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Welcome

Welcome to the inaugural issue of RAND Health Quarterly!

"Objective analysis. Effective solutions." This tagline aptly describes the RAND Corporation’s core approach as a nonprofit institution that helps improve policy and decisionmaking through research and analysis. Approximately 1,000 research professionals from more than 50 countries work at RAND, representing diversity in work experience; academic training; and political and ideological outlook; as well as race, gender, and ethnicity. Hailing from academia, government, and industry, RAND researchers combine theory with practical, real-world experience. Our research is supported by a global clientele that includes government agencies, foundations, other nonprofit organizations, private-sector firms, and philanthropists.

RAND Health is one of the largest private health research groups in the world, with more than 270 projects under way at any given time, addressing a wide range of health care policy issues. However, research on health and health care at RAND is not performed solely in RAND Health. Research units as diverse as the RAND National Security Research Division and RAND Infrastructure, Safety, and Environment conduct health-related and health-relevant work. Multi-unit research centers—such as the Center for Military Health Policy Research and our Drug Policy Research Center—routinely perform health-related research that crosses RAND’s divisions. The researchers pursuing this work include physicians, economists, psychologists, organizational analysts, operations researchers, political scientists, engineers, psychometricians, medical sociologists, policy analysts, and statisticians.

RAND studies in peer-reviewed journals are indexed by the National Library of Medicine’s PubMed/MEDLINE service, but until now many of RAND’s top technical reports, our monographs, and our highly readable policy summaries—RAND research briefs—were not indexed. RAND Health Quarterly will bring all of this high-quality work together for the first time and provide links to our researchers’ other publications in an easily navigable and highly readable format.

Nearly every project that RAND undertakes is a team effort, and this project is no exception. The journal is the product of an extensive collaboration involving our researchers, communications analysts, the Publications and Creative Services Department, and the Web Communications Group. Jim Thomson, our president and chief executive officer; Michael Rich, our executive vice president; and every unit head at RAND are deeply appreciative of their efforts.

Our vision is that RAND Health Quarterly will serve as our premier vehicle for showcasing the breadth and depth of RAND’s health-related research and facilitate access to our work for scholars using online search tools to identify top-quality research relevant to their question or interest.

We look forward to sharing our work with you in the years to come, and we warmly welcome your comments and suggestions.

Sincerely,

Arthur L. Kellermann, MD, MPH
Vice President and Director
RAND Health
Letter from the Editor

We are pleased to present the inaugural issue of *RAND Health Quarterly*, an online journal sharing the results of recent RAND research areas across a broad spectrum of health-related issues. Our work spans a wide range of topics each year, including health policy and health economics; health care delivery, quality, and patient safety; clinical care; global health; mental health; health promotion and disease prevention; public health and emergency preparedness; military health; research methods; and science policy.

In this issue, we present a sample of work from our 2010 archives, followed by reports from the first quarter of 2011. Highlights of this work include:

- research-based practical tools to help policymakers identify neighborhood-level “hot spots” of suboptimal health or health care that may be due to low health literacy and to help develop plans to enhance community resilience in the face of health security threats
- assessments of policy options and practices for incorporating comparative effectiveness research into decisionmaking, considering models of payment reform, and reporting on health care providers’ performance
- studies of clinical care, including international variation in the use of medications for a variety of conditions and changes in nephrology as it evolves from a focus on end-stage renal disease to the treatment of all stages of chronic kidney disease
- evaluations of a program to provide care for maternal depression and a disaster case management pilot program
- studies that assess the relationship between patient safety and malpractice litigation, describe the role that faith-based organizations play in addressing HIV in Central America, provide an overview of evidence for tobacco product regulation, assess methods for evaluating disease management programs, and explore the impact of research investments on cardiovascular conditions and stroke
- research on health and health care in the U.S. military community, emphasizing suicide prevention, the needs of veterans, the experiences of military families, and leadership in the military health care system.

We hope you will find the information in *RAND Health Quarterly* helpful to your future research and policy assessment efforts.

To manage your subscription to *RAND Health Quarterly*, please visit http://rhq.rand.org/subscribe.html. The *RAND Health Quarterly* editorial staff can be reached at RHQ@rand.org.

Kind regards,

Robin M. Weinick, Ph.D.
Editor
*RAND Health Quarterly*
Payment Reform
Analysis of Models and Performance Measurement Implications

by Eric C. Schneider, Peter S. Hussey, Christopher Schnyer

Abstract

Insurers and purchasers of health care in the United States are on the verge of potentially revolutionary changes in the approaches they use to pay for health care. Recently, purchasers and insurers have been experimenting with payment approaches that include incentives to improve quality and reduce the use of unnecessary and costly services. The Patient Protection and Affordable Care Act of 2010 is likely to accelerate payment reform based on performance measurement. This article provides details of the results of a technical report that catalogues nearly 100 implemented and proposed payment reform programs, classifies each of these programs into one of 11 payment reform models, and identifies the performance measurement needs associated with each model. A synthesis of the results suggests near-term priorities for performance measure development and identifies pertinent challenges related to the use of performance measures as a basis for payment reform. The report is also intended to create a shared framework for analysis of future performance measurement opportunities. This report is intended for the many stakeholders tasked with outlining a national quality strategy in the wake of health care reform legislation.

Full Text

Background

Insurers and purchasers of health care in the United States are on the verge of potentially revolutionary changes in the approaches they use to pay for health care (Rosenthal, 2008). While the traditional fee-for-service payment model has been altered or joined by payment reforms, including prospective payment for hospitals in the 1980s and health plan and medical group capitation in the 1990s, critics continue to assert that the persistent use of fee-for-service payment is increasing the volume and intensity of services without enhancing the quality of care or its efficiency. Specifically, fee-for-service payment may contribute to the overuse of services with little or no health benefit and does not foster coordination of care across providers or care delivery organizations (Miller, 2009; Mechanic and Altman, 2009).

Recently, purchasers and insurers have been experimenting with payment approaches that include incentives to improve quality and reduce the use of unnecessary and costly services (Mechanic and Altman, 2009; Fisher et al., 2009; Lee, Berenson, and Tooker, 2010). The federal government has given a new impetus to these payment approaches within the Patient Protection and Affordable Care Act (PPACA) of 2010 (Thorpe and Ogden, 2010). These payment approaches are designed to achieve two interrelated goals: quality improvement and cost containment (Figure S.1). Cost containment is to be achieved by reversing the incentives under fee-for-service payment to increase the use of services by shifting some amount of financial risk to providers, spurring them to consider the costs of their decisions. The introduction of financial risk in payment models may have mixed consequences for quality. On the one hand, financial risk may promote high quality by motivating providers to reduce rates of overuse of inappropriate services. On the other hand, financial risk may lead providers to reduce services that are important to high-quality care or impede access to care.

To address the risks to quality that may emerge in the transition away from fee-for-service payment, proposed new payment reform models (PRMs) do more than simply introduce new ways to pay for services. They include explicit measures of quality and tie payment to performance on those measures so that quality improvement will be driven by financial incentives.
to providers for the use of clinically appropriate services, efforts to make care more patient-centered through coordination and integration of a patient’s care among providers, and incentives to invest in patient safety.

As this discussion implies, PRMs will have to be designed and implemented carefully in order to ensure that both the cost containment and quality goals are achieved. Furthermore, performance measurement and reporting are a crucial component of new payment models. The potential reliance on performance measures to address both cost containment and quality goals is already placing new demands on the performance measure development enterprise. Measures will be needed to perform several important functions in new payment systems, including two that are central to this report:

- Setting performance-based payment incentives. New PRMs typically create performance incentives by adjusting payment amounts based on measured performance (e.g., determining whether a payment occurs and the amount of a payment or determining nonpayment for services if they are linked to poor-quality care).

- Protecting against unintended adverse consequences of cost containment. PRMs may create unintended adverse consequences, such as avoidance of some high-risk or high-cost patients by providers, other barriers to access, and underuse of evidence-based services. Measurement approaches will be needed to identify and ameliorate these unintended consequences.

The purpose of this report is to provide information about the current status of performance measurement in the context of payment reform and to identify near-term opportunities for performance measure development. The report is intended for the many stakeholders tasked with outlining a national quality strategy in the wake of health care reform legislation. Through a subcontract to the National Quality Forum (NQF), a team of investigators at RAND used a rigorous and selective process to create a catalog of payment reform programs that includes both demonstration projects and those outlined in legislation. Based on the features of these programs, each was categorized into one of 11 PRMs. Next, each model and its programs were analyzed to describe the rationale for performance measurement, identify the performance measures available to the model, and assess its unmet measure needs. Finally,
a set of near-term measure development opportunities and implementation challenges were explored to inform the direction of future measure development.

The uses of performance measurement and reporting in health care are a vast and complex topic. Performance measures have many other functions in addition to their use to set payment incentives. Of necessity, this report focuses on the two functions noted above and limits the scope of discussion to these functions. The report does not address the following issues:

- Measures of "financial performance," such as total spending on services or resource use that may be used by payers to negotiate payment amounts with providers, are not addressed. These "accounting" measures are a focus of the report only if they are closely linked to quality measures within an efficiency framework.

- Other applications of performance measurement and reporting are not addressed unless they are an intrinsic part of the PRMs. These other applications include the use of performance measures to

  - monitor progress toward improvement goals
  - inform consumers and purchasers to enable selection of providers
  - stimulate competition among providers
  - stimulate innovation
  - promote the "values" of the health system.

- Variations in the implementation of actual incentives and the distribution of payments between health plans, hospitals, provider groups, and individual providers are beyond the scope of the report. Many payment models are complex and not yet fully specified, making it difficult to assume any special configuration of payers, providers, and incentives. However, where such configurations would affect performance measure development and implementation, we note this.

- PRMs relevant to hospitals, physicians, and other medical providers are emphasized. Long-term care, home health, ambulatory surgery, and many other delivery organizations are obviously critically important. These organizations have participated in payment reform experiments, and they are addressed in health reform legislation. Nevertheless, to make the scope of the discussion manageable, we have elected to focus on hospital and physician PRMs. Results and lessons from these models could be applicable to payment reform programs developed for these other organizations.

**KEY FINDINGS**

**Payment Reform Models**

- We identified and catalogued 90 payment reform programs, classifying them into 11 general PRMs.
- The PRMs are diverse with respect to the targeting of payment to performance goals, the bundling of services, and the level at which payment is made to organizations and individual providers.
- While three types of care delivery entities have been prominently featured in PRMs (the hospital, the ambulatory group practice, and the individual physician), performance-based payment reform will involve other types of providers (long-term care, ambulatory surgical centers, and others).
- Payment reform programs frequently blend elements of the 11 PRMs.
- Additional blending of PRMs seems likely as programs are implemented in the future.

**Implications of the Use of Performance Measurement to Support the Emerging Payment Reform Models**
• The number and sophistication of measures in use varies widely across programs within each PRM, suggesting ongoing experimentation to determine optimal approaches.
• Many available performance measures are not yet in use in current payment reform programs.
• Measure development should be guided by a longitudinal care framework rather than a focus on discrete clinical services.
• Complex organizational types may benefit from complex measurement strategies that support internal incentive and quality improvement models.
• Composite measures will be important, especially in assessing episodes of care.
• Efficiency-of-care measures may be useful in PRMs that are not based on global or capitated payment.
• Blended payment models will rely on blended performance measurement strategies.
• Structure-of-care measures will be required for some models, at least in the near term.

Priority Areas for Further Measure Development

The following measure types offer promising opportunities for further measure development and refinement across many of the PRMs we identified:

• health outcome measures that can be used to assess care for populations:
  • health status measures (functional status and quality of life)
  • safety outcomes (preventable harms attributable to health care)
• care coordination measures (including measures that assess care transitions)
• measures of patient and caregiver engagement (measures that assess the participation of patients and caregivers in their care)
• measures of structure (particularly management measures and health information technology [HIT] utilization measures that address new organizational types)
• composite measures that combine outcome, process, structure, patient experience, cost, and other measure types
• efficiency measures that combine quality and resource use measures.

To minimize the risk that new PRMs will increase disparities in care, additional measure development may be useful in two specific areas:

• clinical and sociodemographic risk profiles of providers’ patient populations
• measures of access to care and measures to detect provider avoidance of high-risk patients.

PROJECT METHODS

The goal of the project was to describe the performance measurement needs created by current and emerging payment reform approaches, to assess the suitability of existing performance measures to support these needs, and to suggest near-term priority areas for performance measure development that would support these needs effectively going forward. To achieve the goal, RAND, in consultation with NQF staff, carried out the following tasks (see Figure S.2):

• scan of payment reform programs to derive payment reform models (PRMs)
• selection of payment reform programs to highlight features of PRMs
• analysis of the rationale for use of performance measures in the model and the suitability of available performance measures
• assessment of the gap between measures needed and available measures to identify unmet measure needs.

For each PRM, we describe
The rationale guiding selection of performance measures, payment incentive–specific uses of measurement in the PRM, and the special need for measures created by the model.

An analysis of available measures, including the contrast between available measures, the unmet measure needs of the PRM, and the implementation challenges associated with measure implementation.

Across the PRMs, we summarize the key opportunities for measure development and the common implementation challenges associated with implementing performance measurement.

RESULTS

We grouped the reviewed payment reform programs into 11 PRMs that create demand for performance measures.

These 11 models vary widely in the extent to which they alter current payment methods, the scope of patients and services affected, and the providers subject to the new payment arrangements. Therefore, the model incentives and purposes of performance measurement also vary substantially between models. Even within a particular model, different implementations may vary widely on these dimensions. However, there are some general patterns of relationships between the models that can be helpful in comparing their performance measurement needs.

Description of Payment Reform Models and Uses of Performance Measures

- Payment Reform Model
- Brief Description
- Payment Incentive–Specific Uses of Performance Measurement
Model 1: Global payment

A single per-member per-month payment is made for all services delivered to a patient, with payment adjustments based on measured performance and patient risk.

1. Determining based on measured performance whether bonus payments will be made and the amount of those payments (using a pay-for-performance [P4P] mechanism)
2. Assessing negative consequences, such as avoidance of patients with complex conditions, greater severity of disease, or other risk factors
3. Informing strategic decisions by payers about the design and implementation of the payment program (e.g., assessing the impact of the payment model on cost and quality)
4. Assisting providers to identify opportunities for quality improvement and greater efficiency of care delivery

Model 2: ACO shared savings program

Groups of providers (known as accountable care organizations [ACOs]) that voluntarily assume responsibility for the care of a population of patients share payer savings if they meet quality and cost performance benchmarks.

Similar to global payment model:

1. Determining based on measured performance whether bonus payments will be made and the amount of those payments (using a P4P mechanism)
2. Assessing negative consequences, such as avoidance of patients with complex conditions, greater severity of disease, or other risk factors
3. Informing strategic decisions by payers about the design and implementation of the payment program (e.g., assessing the impact of the payment model on cost and quality)
4. Assisting providers to identify opportunities for quality improvement and greater efficiency of care delivery

Model 3: Medical home

A physician practice or other provider is eligible to receive additional payments if medical home criteria are met. Payment may include calculations based on quality and cost performance using a P4P-like mechanism.

1. Evaluating whether practices meet medical home qualification criteria, which may include multiple tiers of achievement
2. Evaluating practice impact on quality and resource use
3. Supporting practice-based quality improvement activities

Model 4: Bundled payment

A single “bundled” payment, which may include multiple providers in multiple care settings, is made for services delivered during an episode of care related to a medical condition or procedure.

1. Making adjustments to providers’ episode-based payment rates based on quality of care
2. Determining whether providers meet performance criteria for participation in a bundled payment program
3. Assessing negative consequences, including avoidance of certain types of patients or cases, particularly through patient experience measures
4. Assisting providers to identify opportunities for quality improvement and greater efficiency of care delivery

Model 5: Hospital-physician gainsharing

Hospitals are permitted to provide payments to physicians that represent a share of savings resulting from collaborative efforts between the hospital and physicians to improve quality and efficiency.
1. Determining if hospitals and affiliated physicians are eligible to participate in a gainsharing program
2. Ensuring that the quality of patient care is not compromised
3. Ensuring that the payment incentives lead to improved hospital operational and financial performance (e.g., efficiency)
4. Detecting increases in the volume of referrals for services not covered within the gainsharing arrangement
5. Assessing adverse consequences, such as hospital or physician avoidance of patients with adverse risk characteristics
6. Making information available to providers about opportunities for improvement

**Model 6: Payment for coordination**
Payments are made to providers furnishing care coordination services that integrate care between providers.

1. Determining whether providers receive performance-related bonuses (in some programs)
2. Evaluating the effectiveness of programs that seek to improve coordination-related performance. The approaches taken by programs within this PRM have tended to offer flexible financing to multidisciplinary teams of providers and then measure cost and health outcome measures to assess how cost and quality change over time.
3. Assessing negative consequences, including avoidance of certain types of patients or cases, particularly through patient experience measures
4. Assisting providers to identify opportunities for quality improvement and greater efficiency of care delivery

**Model 7: Hospital P4P**
Hospitals receive differential payments for meeting or missing performance benchmarks.

1. Determining the amount of bonus payments or adjustments to the diagnosis-related groups (DRG) payment schedule
2. Measuring unintended adverse consequences of the PRM and monitoring performance trends in areas not targeted by P4P
3. Assisting hospitals to identify opportunities for quality improvement and greater efficiency of care delivery

**Model 8: Payment adjustment for readmissions**
Payments to hospitals are adjusted based on the rate of potentially avoidable readmissions.

1. Determining which readmissions are considered preventable
2. Determining which hospitals will be subjected to a payment penalty
3. Assisting hospitals to identify opportunities to improve the discharge transition
4. Measuring unintended adverse consequences of the PRM, such as assignment of admitting diagnoses to avoid the penalty

**Model 9: Payment adjustment for hospital-acquired conditions**
Hospitals with high rates of hospital-acquired conditions are subject to a payment penalty, or treatment of hospital-acquired conditions or serious reportable events is not reimbursed.

1. Determining whether a payment is adjusted
2. Assisting hospitals to identify opportunities to improve safety
3. Measuring unintended adverse consequences of the PRM and monitoring performance trends in areas not targeted by the payment adjustment

**Model 10: Physician P4P**
Physicians receive differential payments for meeting or missing performance benchmarks.

1. Determining adjustments to bonus payments or to fee schedules
2. Measuring unintended adverse consequences of payment models and monitoring trends in performance for areas not targeted by P4P
3. Identifying opportunities for quality improvement

**Model 11: Payment for shared decisionmaking**
Payment is made for the provision of shared decisionmaking services.

1. Evaluating the use of shared decisionmaking tools in improving patient decisionmaking and better aligning treatment choices with patient preferences
2. Certification of patient decision aids
3. Assessing the potential for unintended adverse consequences of tying payments to the shared decisionmaking process

Table S.1 describes the 11 models with regard to four attributes relevant to performance measurement and performance-based incentives: (1) whether performance is measured for a predefined population, (2) whether performance is measured for a predefined episode of care, (3) whether performance is measured across more than one type of care delivery organization, and (4) whether the PRM incentive is a fee-for-service payment applied to one or more newly specified services.

The PRMs toward the top of the table tend to represent payment made to a group of providers and/or provider organizations to provide high-quality and efficient care to a defined population over time. The performance goals generally include a broader and more comprehensive set of services than the goals defined for the models toward the bottom of the table. The PRMs at the top of the table may incorporate and combine elements of PRMs from rows at the bottom of the table. At the bottom of the table, payment is generally used to achieve relatively narrowly defined performance goals, and the payment is more frequently made to individual providers, rather than groups. PRMs in the middle of the table are blended with respect to each of the three dimensions. These models generally focus payment on specific sets (e.g., bundles) of services that are delivered during an episode of care.

Next, we briefly describe the near-term performance measurement needs defined by each PRM. The lists of near-term performance measurement needs are not intended to be comprehensive or exclusive. For each PRM, it is possible to imagine a program that includes all possible measures. Because the devotion of resources to measure development and implementation is likely to be limited, such a perspective would be uninformative. Instead, we have selected those measure needs that are likely to be of greatest interest within the context of each specific PRM.

**The Special Performance Measure Needs Created by Payment Reform Models**

**Model 1: Global payment**
1. Reflect the broad range of care services delivered and the multiple care delivery settings that participate in providing care to a population under the global payment (i.e., measures for physician groups, hospitals, emergency departments, post-acute care, and any other setting that may provide care under the global payment)
2. Include key indicators (such as health outcomes attributable to the care provided under the global payment), composite measures, or measure sets
3. Enable longitudinal, population-based measurement of the care services provided to the population covered by the global payment
4. Can be used within or across global payment programs that vary with respect to
   - the length of the time period addressed by longitudinal measurement and whether this time period is fixed or variable
   - the provider holding the global payment (e.g., integrated delivery system, hospital, or ambulatory provider group)
### Table S.1
Attributes of Payment Reform Models

<table>
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<tr>
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<th>Attributes</th>
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<td>Performance Measured for a Population</td>
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<tr>
<td>Model 1: Global payment</td>
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<td>Model 2: ACO shared savings program</td>
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<tr>
<td>Model 3: Medical home</td>
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<td>Model 4: Bundled payment</td>
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<td>Model 5: Hospital-physician gainsharing</td>
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<td>Model 6: Payment for coordination</td>
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<td>Model 9: Payment adjustment for hospital-acquired conditions</td>
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<td>Model 10: Physician P4P</td>
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<td>Model 11: Payment for shared decisionmaking</td>
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**NOTES:** √√ = key attribute of the PRM, √ = may be an attribute of the PRM, none = unlikely to be an attribute of the PRM.

- the range of providers that participate in the global payment
- the range of services providers deliver under the global payment.

**Model 2: ACO shared savings program**
1. Reflect the broad range of care services delivered and the multiple care delivery settings that participate in the ACO (i.e., measures for physician groups, hospitals, emergency departments, post-acute care, and any other setting that may be included in the ACO)
2. Include key indicators (such as health outcomes attributable to the care provided under the global payment), composite measures, or measure sets
3. Enable longitudinal, population-based measurement of the care services provided to the population enrolled in the ACO
4. Can be used within or across ACOs that vary with respect to
   - the length of the time period addressed by longitudinal measurement and whether this time period is fixed or variable
   - the features of the ACO management responsible for allocating the shared savings (e.g., integrated delivery system, hospital, or ambulatory provider group)
   - the range of providers that participate in the ACO
   - the range of services that providers deliver within the ACO.

Model 3: Medical home
1. Reflect the adoption of care processes and structural capabilities (management features and health information technology) that enhance continuity and coordination of care
2. Assess whether care is patient-centered, including the outcomes of primary care, the patient experience, and patient and caregiver engagement with primary care

Model 4: Bundled payment
1. Are related to the conditions targeted by the bundles
2. Are tailored to the care delivery settings that participate in delivering components of the care bundle (i.e., measures for hospitals as well as for individual physicians) or that can be used effectively across multiple care delivery settings in an episode-of-care framework
3. Can be used to detect negative consequences of the payment model (e.g., bundle-specific measures of appropriateness of care and the patient experience of care)
4. Assess coordination of care within and across episodes (or bundles)

Model 5: Hospital-physician gainsharing
1. Apply to both the hospital and individual physicians covered by the gainsharing arrangement
2. Evaluate the specific treatments or procedures covered by the gainsharing arrangement
3. Are treatment-specific or procedure-specific, particularly to evaluate adverse consequences, such as avoidance of high-risk patients
4. Include patient health and safety outcomes. Measures of process should be chosen carefully to avoid the potential to “lock in” care processes that have acceptable or superior substitutes.
5. Assess care coordination, access, cost, and utilization

Model 6: Payment for coordination
1. Assess whether care coordination activities are accomplished
2. Assess costs, service utilization, patient experience, and health outcomes of patients who receive care coordination services

Model 7: Hospital P4P
1. Measure sets may be narrowly or broadly defined, depending on the number of performance goals included in the performance incentive.
2. A narrowly constructed set may focus on a specific domain of measurement, such as health care–associated infections (HAI). Other P4P measure sets may focus on patient outcomes, patient experience, costs of care, or access to care. For example, measurement may focus on the evidence-based safety processes associated with avoidance of preventable complications, such as HAI.
3. A broadly constructed measure set will blend payment incentives on measures from multiple domains.
4. P4P programs may also be included as components of other PRMs, such as the global payment or ACO shared savings PRMs. Hospital P4P may also be layered on top of a bundled payment program with hospital episodes defining bundles of care and performance measures defining the P4P adjustment to a bundled payment.
5. Structural capabilities of a hospital or credentials of hospital-based clinicians may determine eligibility for participation in a P4P program or eligibility for a differential payment.
Model 8: Payment adjustment for readmissions
1. Emphasize aspects of care under the hospital’s control and account for the clinical and sociodemographic risk characteristics of the hospital’s patient population
2. Can be used to assess adverse outcomes (such as patient experience measures)
3. Can be used to understand the processes that influence the risk of readmission and can help to redesign the discharge transition to reduce readmission rates

Model 9: Payment adjustment for hospital-acquired conditions
1. Enable identification and documentation of the occurrence of hospital-acquired conditions (e.g., treatment complications and other safety outcomes). Performance measurement within this model is used to document the occurrences of preventable hospital-acquired conditions. While the NQF publishes a list of serious reportable events that are considered preventable, these are rare events.
2. Provide an assessment of the preventability of these conditions. Hospital-acquired conditions used in measurement should be associated with evidence that they are preventable (Pronovost, Goeschel, and Wachter, 2008).
3. Enable meaningful aggregation of conditions to form composite measures. In addition, measures of safety processes that can prevent such events may enable stakeholders to implement the PRM so that it is more likely to reduce the incidence of hospital-acquired conditions over time.

Model 10: Physician P4P
1. Assess delivery of evidence-based chronic disease management, including care processes, patient outcomes, patient experience, and access to care
2. Include composites of measures across conditions to assure that clinicians do not focus on some aspects of care delivery to the detriment of others
3. Assess structural capabilities of physician practices to determine eligibility to participate in a P4P program or eligibility for a differential payment
4. Can be used to evaluate the quality of episodes of care (in combination with the bundled payment model)
5. Assess the appropriateness of care and efficiency of care delivery

Model 11: Payment for shared decisionmaking
1. Can be used to assess patient and caregiver experience and patient and caregiver engagement
2. Include structural aspects of care, such as criteria for the certification of patient decision aids
3. Assess the process used to enable shared decisionmaking

THE POTENTIAL IMPACT OF PAYMENT REFORM MODELS ON PERFORMANCE MEASURE DEVELOPMENT

Any portfolio of performance measures generally reflects those quality problems that are concerning to health care stakeholders. Frequently, the concerns arise in relation to the payment mechanisms used to purchase health care services. During the past decade, performance measure developers have tended to specify measures for either a fee-for-service payment environment or a capitated health plan environment. Early efforts to develop measures for use in capitated health plans tended to focus on assessing underuse of preventive services and chronic care. Fewer measures focused on inappropriate service delivery, and very few prior measurement efforts have addressed the efficiency of care delivery. Our analysis suggests that new initiatives to base payment on performance measurement may create a new set of demands on performance measure developers.

There are several implications of the shift to a focus on measurement to support the emerging PRMs.
Measure Development Should Be Guided by a Longitudinal Care Framework Rather Than a Discrete Service Focus

Many past performance measures have tended to focus on the delivery of discrete clinical services, such as preventive services, medications, or other treatments delivered at a specific point in time. Exceptions include the chronic disease measurement sets that address care processes delivered during a specified time frame (e.g., one year). Some of the PRMs we studied are built on a longitudinal care framework for services delivered to a population (global payment, ACO shared savings, medical home, bundled payment, and hospital-physician gainsharing). Episode-based measurement is not a new construct. Risk-adjusted mortality after hospitalization or surgery is an outcome measure that is used to assess an episode of hospitalization or surgery. However, developing and refining a variety of quality measures to address episodes of care will be an important step. Using a longitudinal measurement framework to develop measures will naturally emphasize health outcomes. In particular, the measurement of changes in functional status, morbidity, and quality of life will be attractive to clinicians to the extent that these results can guide clinical care. The selection of process measure sets should also be informed by the longitudinal framework.

Complex Organizational Types May Benefit from Complex Measurement Strategies That Support Internal Incentive and Quality Improvement Models

Some of the PRMs encompass a broad range of clinical activities and organizational types that must coordinate with one another (e.g., global payment and ACO shared savings) in contrast to others that target relatively narrowly specified goals for a specific organizational type (e.g., reducing hospital-acquired conditions or promoting the use of shared decisionmaking tools). Although it is also possible to set performance incentives on a few key indicators (e.g., population outcomes), the complex organizational types (meaning those organizations that encompass multiple specialized services that have not traditionally been merged together outside of integrated delivery systems) may have expansive measure needs in order to set incentives to providers internally (including outcome, process, and other measure types). While each organization could develop its own measures for internal use, nonstandardized measurement approaches may defeat the use of results for other purposes (such as public reporting). Standardized but flexible measure sets including both outcome and process that can serve P4P and other PRMs (independent of the ACO or medical home context) will also be useful to complex organizations.

Priorities for measure development may be unclear until these delivery models and their patient populations are more specifically defined. For example, it will be difficult to specify measures for an ACO without knowing the range of providers and delivery organizations that will participate. The creation of composite measures may be especially challenging until the ACO organization is better defined.

Composite Measures Will Be Important in an Episode-Based Payment Framework

Composite measures that combine clinical process measures or process and outcome measures longitudinally will be desirable in an episode-based measurement framework. A recent paper summarizes some of the considerations in choosing composite measure sets for specific purposes (Peterson et al., 2010).

Efficiency of Care Measures May Be Useful

Containing costs is a goal of most of the PRMs either directly (through the fixed base payment of models, such as the global payment PRM) or indirectly (through bonuses that improve quality and reduce the need for future care, such as the physician P4P PRM). While assessment of costs may be necessary to set or negotiate payment amounts, measurement of costs is not necessary once a cost-containing incentive is established. In the context of the cost-containing incentive, performance measurement is used primarily to counteract the potential quality deficits that could arise from actions taken to reduce costs (e.g., reducing services). Given the challenges of developing measures of efficiency, some observers have
favored measuring cost or resource use (especially relative resource use). Cost and resource use can be difficult to interpret in the absence of accompanying measures of quality (to form efficiency measures) or case-mix or risk adjustment. Setting payment adjustments based on reductions in resource use or cost may undermine quality.

Identifying and rewarding efficient care is desirable. Efficiency measures could be useful (Hussey et al., 2009). However, few efficiency measures have been developed to date, and such measures are very challenging to develop. Measuring appropriateness or overuse of services can be useful in some of the PRMs (e.g., hospital and physician P4P). For example, P4P bonuses could be set based on efficiency measure results. The bundled payment PRM requires payers to establish payment amounts that account for the cost of a bundle of services delivered efficiently. Thus, the bundle includes an implicit efficiency consideration by defining an optimal set of services (and their associated cost) to set a payment rate. Gain-sharing programs set implicit targets related to cost but do not define efficiency explicitly.

**Blended Payment Models Will Rely on Blended Measurement Strategies**
Where payment models are blended, the measurement strategies may be adapted across models. Addition of P4P to a global payment strategy has been accomplished under the Alternative Quality Contract of Blue Cross Blue Shield of Massachusetts. Likewise, the use of bundled payment may be readily combined with other payment models. The measures developed for use in these other payment models can be readily integrated into the more complex payment models.

**Structure-of-Care Measures Will Be Required for Some Models, at Least in the Near Term**
Some of these measures will take the traditional form of structure used in accreditation programs. These typically assess the presence or absence of a feature without further assessing its functionality. For example, computerized order entry systems can be present but not used. The recent approach in legislation that defines “meaningful use” of health information technology (HIT; translated by the Department of Health and Human Services into operational criteria for functionality) represents an example of this more sophisticated approach to assessing the structure of care (Donabedian, 1980). The medical home, payment for care coordination, and payment for shared decisionmaking models require the specification of criteria to enable certification that a provider or organization has basic capabilities. Medical home criteria define capabilities related to care management, access, and HIT. Shared decisionmaking payments will depend on the use of certified decision aids and, possibly, processes, and payments for care coordination will require criteria for certifying the coordinating provider or organization.

**CONCLUSIONS**
The signing of PPACA into law in 2010 is likely to accelerate payment reform based on performance measurement. This technical report is intended to inform multiple stakeholders about the principal PRMs and the status of performance measures in these models and programs. The report summarizes the characteristics of PRMs and the performance measure needs they will generate. Finally, the report identifies the near-term measure development opportunities that may best accelerate the successful implementation of performance measurement in these models.

The report is also intended to create a shared framework for analysis of future performance measurement opportunities. Much measure development, implementation, and evaluation remains to be accomplished. Even for models with a track record of implemented programs and evaluation (such as the hospital and physician P4P models), measure sets have not reached their full potential. These programs were important first steps showing that payment based on performance is feasible even with the relatively limited measure sets available today. Barriers to a fully operational performance measurement system in health care can be overcome with careful planning and integration of care delivery systems, investments in mea-
sure development and testing, and investments in the development of valid and reliable data sources that have adequate clinical data to support new measures.

Ongoing and planned demonstration projects and their evaluations will offer valuable lessons about the measures needed to implement these and future PRMs. Investing in infrastructure that improves the available data for performance measurement will be a necessary precursor to successful deployment of new types of measures. Carefully bridging payment reform and performance measurement while attending to the potential adverse unintended consequences should optimize the health of Americans and assure that care is affordable in the future.

REFERENCES


For more information, see RAND TR-841-NQF, available at [http://www.rand.org/pubs/technical_reports/TR841.html](http://www.rand.org/pubs/technical_reports/TR841.html)
Disease Management Evaluation
A Comprehensive Review of Current State of the Art

by Annalijn Conklin, Ellen Nolte

Abstract

Many countries across Europe and elsewhere have been experimenting with various structured approaches to manage patients with chronic illness as a way to improve quality of care, reduce costs and lead to better population health outcomes in the long run. Despite a body of studies of disease management interventions, uncertainty about the effects of these remains not least because current guidance on evaluation methods and metrics require further development to enhance scientific rigour while also being practical in routine operations. This articles provides details of a report that reviews the academic and grey literature to help advance the task of improving the science of assessing disease management initiatives in Europe. It provides a comprehensive inventory of current evaluation methods and performance measures, and highlights potential challenges to evaluating complex interventions such as disease management. Challenges identified are methodological, analytical and conceptual in nature, with a key issue being the establishment of the counterfactual. An array of sophisticated statistical techniques and analytical frameworks can assist in the construction of a sound comparison strategy when a randomised controlled trial is not possible. Issues to consider include: a clear framework of the mechanisms of action and expected effects of disease management; an understanding of the characteristics of disease management (scope, content, dose, context), and of the intervention and target populations (disease type, severity, case-mix); a period of observation over multiple years; and a logical link between performance measures and the intervention’s aims and underlying theory of behaviour change.

Full Text

Chronic diseases account for a large share of healthcare costs while the care for people with such conditions remains suboptimal. Many countries in Europe are experimenting with new, structured approaches to better manage the care of patients with chronic illness and so improve its quality and ultimately patient health outcomes. While intuitively appealing, the evidence such approaches achieve these ends remains uncertain. This is in part because of the lack of widely accepted evaluation methods to measure and report programme performance at the population level in a scientifically sound fashion that is also practicable for routine operations. This report aims to help advance the methodological basis for chronic disease management evaluation by providing a comprehensive inventory of current evaluation methods and performance measures, and by highlighting the potential challenges to evaluating complex interventions such as disease management.

Challenges as identified here are conceptual, methodological, and analytical in nature. Conceptually, evaluation faces the challenges of a diversity of interventions subsumed under a common heading of “disease management” which are implemented in various ways, and a range of target populations for a given intervention. Clarifying the characteristics of a disease management intervention is important because it would permit an understanding of the effects expected and how the intervention might produce them and also allow for the replication of the evaluation and the implementation of the intervention in other settings and countries. Conceptual clarity on the intervention’s target and reference populations is equally necessary for knowing whether an evaluation’s comparator group represents the counterfactual (what would have happened in the absence of a given intervention). Other conceptual challenges relate to the selection of evaluation measures which often do not link indicators of effect within a coherent framework to the aims and elements (patient-related and provider-directed) of a disease management intervention and to the evaluation’s objectives.
The establishment of the counterfactual is indeed a key methodological and analytical challenge for disease management evaluation. In biomedical sciences, randomised controlled trials are generally seen as the gold standard method to assess the effect of a given intervention because causality is clear when individuals are randomly allocated to an intervention or a control group. In the context of multi-component, multi-actor disease management initiatives, this design is frequently not applicable because randomisation is not possible (or desirable) for reasons such as cost, ethical considerations, generalisability, and practical difficulties of ensuring accurate experimental design. As a consequence, alternative comparison strategies need to be considered to ensure findings of intervention Disease management evaluation effect(s) are not explained by factors other than the intervention. Yet, as alternative strategies become less of a controlled experiment, there are more threats to the validity of findings from possible sources of bias and confounding (e.g. attrition, case-mix, regression to the mean, seasonal and secular trends, selection, therapeutic specificity and so on) which can undermine the counterfactual and reduce the utility of the evaluation.

As many design options have been suggested for disease management evaluation, choosing an appropriate study design can be an important methodological approach to selecting a suitable control group for an alternative comparison strategy that still achieves the goals of randomisation in disease management evaluation. Equally, there are various analytical approaches to such construction whereby controls are randomly matched to intervention participants can be created through predictive modelling or propensity scoring techniques, or they are created statistically by developing baseline trend estimates on the outcomes of interest. Whichever the approach taken to construct a sound comparison strategy, there will be a set of limitations and analytical challenges which must be carefully considered and may be addressed at the analysis stage. And, while some statistical techniques can be applied ex post to achieve the objectives of randomised controlled trials, such as regression discontinuity analysis, it is better to plan prospectively before a given intervention is implemented to obtain greater scientific returns on the evaluation effort.

Other methodological and analytical challenges in disease management evaluation also require thoughtful planning such as the statistical power of evaluation to detect a significant effect given the small numbers, non-normal distribution of outcomes and variation in dose, case-mix, and so on, typical of disease management initiatives. Several of these challenges can be addressed by analytical strategies to assure useful and reliable findings of disease management effects such as extending the measurement period from 12 month to 18 months and adjusting for case-mix to calculate sample size, for example. But, ultimately, what is required is a clear framework of the mechanisms of action and expected effects that draws on an understanding of the characteristics of disease management (scope, content, dose, context), those of the intervention and target populations (disease type, severity, case-mix), an adequate length of observation to measure effects and the logical link between performance measures and the intervention’s aims, elements and underlying theory driving the anticipated behaviour change.

For more information, see RAND TR-894-EC, available at http://www.rand.org/pubs/technical_reports/TR894.html
How Health Systems Make Available Information on Service Providers
Experience in Seven Countries

by Mirella Cacace, Stefanie Ettelt, Laura Brereton, Janice Pedersen, Ellen Nolte

Abstract

This article provides details on a report that reviews and discusses information systems reporting on the quality or performance of providers of healthcare ("quality information systems") in seven countries: Denmark, England, Germany, Italy, the Netherlands, Sweden and the United States. Data collection involves a review of the published and grey literature and is complemented by information provided by key informants in the selected countries using a detailed questionnaire. Quality information systems typically address a number of audiences, including patients (or respectively the general public before receiving services and becoming patients), commissioners, purchasers and regulators. We observe that as the policy context for quality reporting in countries varies, so also does the nature and scope of quality information systems within and between countries. Systems often pursue multiple aims and objectives, which typically are:

- to support patient choice
- to influence provider behaviour to enhance the quality of care
- to strengthen transparency of the provider-commissioner relationship and the healthcare system as a whole
- to hold healthcare providers and commissioners to account for the quality of care they provide and the purchasing decisions they make.

We emphasise that the main users of information systems are the providers themselves as the publication of information provides an incentive for improving the quality of care. Finally, based on the evidence reviewed, we identify a number of considerations for the design of successful quality information systems, such as the clear definition of objectives, ensuring users’ accessibility and stakeholder involvement, as well as the need to provide valid, reliable and consistent data.

Full Text

There is growing interest in the public release of information on the performance of healthcare providers as a means to improve the quality of care and promote transparency and accountability. Countries have made considerable investments in creating systems to make available such information. However, there is lack of systematic comparative assessment of such systems. Thus, there is a need to better understand the drivers behind and leaders of initiatives and their aims and objectives; the nature, frequency and source of information provided; their availability to and usability by the public, and, finally, whether and how these systems might have an impact on the quality of care.

This report aims to contribute to filling these gaps by reviewing information systems reporting on the quality or performance of providers of healthcare ("quality information systems") in seven countries: Denmark, England, Germany, Italy, the Netherlands, Sweden and the United States. Data collection involved a review of the published and grey literature, complemented by information provided by key informants in the selected countries using a detailed questionnaire.

The review highlights that as the policy context for quality reporting in countries varies, so also does the nature and scope of quality information systems within and between countries. Systems often pursue multiple aims and objectives, which typically are:

- to support patient choice
- to influence provider behaviour to enhance the quality of care
• to strengthen transparency of the provider–commissioner relationship and the healthcare system as a whole
• to hold healthcare providers and commissioners to account for the quality of care they provide and the purchasing decisions they make.

However, system objectives are not always well defined and documented, which makes it difficult to assess whether, and how well, systems achieve their intended aims.

Similarly, quality information systems typically address a number of audiences, including patients (or respectively the general public before receiving services and becoming patients), commissioners, purchasers and regulators. Ultimately, however, the main users of information systems are the providers themselves as the publication of information provides an incentive for improving the quality of care. Most systems have the stated aim to make information available to patients thus supporting choice of provider.

Yet there are examples of systems that, in their present format, seem to be ill-suited to meet patients’ information needs as the nature of information collected and their presentation might require specialist knowledge in order to be usable and useful. This reflects, to a certain extent, the origins of several of the information systems reviewed here, which have developed gradually, often through a combination of some form of ‘bottom up’ initiatives and ‘top down’ regulation. In Sweden, for example, the national quality registries were initially developed by clinicians and professional networks, while requirements for quality reporting for hospitals in Germany were defined by the legislator. The Weisse Liste in Germany is developed by a private foundation in collaboration with associations of patient and consumer organisations.

As quality information systems vary in their objectives and target audiences, so does the nature and scope of data provided. In most countries, several systems co-exist, frequently, although not always, serving slightly different purposes. The scope ranges from those whose sole purpose it is to inform about one aspect of performance, typically waiting times (e.g. Ventetider in Denmark and Väntetider i Vården in Sweden), to systems that give users access to detailed information about the quality of care delivered by individual providers. Where detailed information on provider performance is available, it tends to focus on hospitals with only a minority of systems also providing information on the quality of primary and/or preventive care (e.g. NHS Choices in England, Zichtbare Zorg in the Netherlands, and Öppna jämförelser in Sweden). Furthermore, only a few systems provide patient ratings based on systematic surveys, including patients’ experience (e.g. NHS Choices, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) in the United States (US), and KiesBeter in the Netherlands), patient satisfaction (Qualitätskliniken in Germany) or provide an opportunity for direct feedback from patients (e.g. the ongoing pilot project by AOK-Gesundheitsnavigator in Germany).

Governments and health authorities play a key role in operating and funding quality information systems. Where healthcare governance has been devolved to regions or countries, quality reporting typically also involves regional governments. Furthermore, professional groups are involved, for example by operating the databases on clinical quality in Denmark or the national quality registries in Sweden. Dr Foster Intelligence in England has originated in the private for profit sector and is operated as a public–private partnership.

Although countries reviewed here have developed a variety of quality information systems for a range of different audiences, the evidence about the impact of these systems is fairly limited. Systematic evaluative work is mainly available for the US, suggesting that public reporting can improve the quality of care in some areas. However, the effects of information systems on quality of care are difficult to isolate as these frequently are part of broader quality initiatives. Also, the requirements for increased reporting necessitate improved documentation, which may explain some of the (initially) observed effects of quality reporting on improvements.
Quality improvement can result from selection and/or as a consequence of provider behaviour change. These mechanisms are however difficult to disentangle. Findings from six of the seven countries reviewed here suggest that patients rarely search out information about healthcare providers. Low uptake of published information suggests that the available data does not sufficiently meet patients’ information needs, also highlighting lack of systematic involvement of patients in the development of quality information systems (with NHS Choices in England being a notable exception). Growing evidence suggests that other user groups, such as managers and providers, indeed use comparative information to improve care where public reporting occurred. It is important to note that information systems can encourage changes in provider behaviour even if the public makes limited use of them. This supports the notion of an association between public reporting and quality improvement, which operates largely through provider behaviour change. More systematic research is needed, however, to understand the underlying mechanisms.

Based on the evidence reviewed here, we identify a number of considerations for the design of quality information systems. Thus, the purpose of publishing information on the quality of service providers needs to be well defined, as does the primary target groups that are supposed to be using the system. Where patients or the public are the main intended users, information systems must ensure access and usability so as to minimise the possibility of unequal access to web-based resources. Stakeholder involvement can improve acceptance of information systems and therefore potentially increase its use. It will therefore be necessary to decide early on which stakeholders to include and at what stage of the process.

Several findings highlighted the necessity to improve and ensure the high quality of data provided. Mechanisms for ensuring validity, reliability and consistency of reported data should go hand in hand with safeguarding the completeness of data. Mandatory approaches can be effective, but also incentive-driven schemes, for example ‘pay-for-reporting’ (Hospital Compare, US) can be successful in achieving high participation of healthcare providers. As there might be an incentive for some providers to manipulate data, control mechanisms are indicated. Finally, and perhaps most challenging, there is a need for systematic evaluation of information systems to assess the cost–benefit relation of information systems as well as their overall value for money. This includes rigorous measurement of potential impacts on provider behaviour and detailed understanding of the mechanisms at work. Further learning from international experience can be helpful in achieving these aims.

For more information, see RAND TR-887-DH, available at http://www.rand.org/pubs/technical_reports/TR887.html
Assessing the Impacts of Revising the Tobacco Products Directive
Study to Support a DG SANCO Impact Assessment

by Jan Tiessen, Priscillia Hunt, Claire Celia, Mihaly Fazekas, Han de Vries, Laura Staetsky, Stephanie Diepeveen, Lila Rabinovich, Helen Ridsdale, Tom Ling

Abstract

Tobacco use is one of the largest avoidable causes of morbidity and premature death in the EU. Whilst smoking prevalence in the EU has been declining over the past 30 years, smoking has remained more prevalent among men than women in the EU-27, with some of the new Member States reporting the widest gaps between male and female smokers. For young smokers (13 to 15 years old) this situation is somewhat reversed, with slightly more girls than boys smoking. Against this background, the European Commission Directorate-General for Health and Consumer Protection (DG SANCO) considered a revision of the Tobacco Products Directive 2001/37/EC across five general areas: scope of the directive, labelling requirements, registration and market control fees, ingredients, and sales arrangements. More specifically, the types of policy options under consideration included (but were not limited to): an increase of warning label sizes on the back of packaging to 100%, a restriction for the display of products at retail outlets and an introduction of additional measurement method for TNCO (the modified ISO method) with maximum limits set accordingly. DG SANCO commissioned RAND Europe to provide support in assessing the potential health, macroeconomic, and compliance cost and administrative burden impacts of revising the Tobacco Products Directive. In addition to assessing impacts, the study provides an up-to-date overview of the evidence and basis for current tobacco product regulation that may be of interest to a wider audience interested in tobacco control policies.

Full Text

Smoking and Other Forms of Tobacco Use Remain One of the Largest Avoidable Causes of Morbidity And Premature Death in the EU

With more than 650,000 deaths a year – representing more than 15 percent of all deaths in the EU – attributable to smoking, tobacco use is one of the largest avoidable causes of morbidity and premature death in the EU. For more than a decade smoking prevalence in the EU has, however, been declining, reflecting a wider trend of reduction in smoking prevalence that may be observed since the 1980s. Over the past 30 years, smoking has remained more prevalent among men than women in the EU-27, with some of the new Member States reporting the widest gaps between male and female smokers. For young smokers (13 to 15 years old) this situation is somewhat reversed, with slightly more girls than boys smoking.

The negative health impacts of tobacco use are well established and smoking has been linked to several forms of cancer, respiratory diseases, vascular diseases, negative reproductive effects and a wide range of other negative health impacts such as increased risks of cataracts and adverse surgical outcomes related to poor wound healing.

Tobacco-related diseases incur considerable direct and indirect costs for society, including direct healthcare costs and indirect costs such as productivity losses (absenteeism, lost skills, unemployment), welfare provision costs (sickness and unemployment benefits) and fire and other accidents (property losses, wild fires), as well as intangible costs such as pain and suffering that result from loss of life or illnesses brought on by tobacco use. These costs have been estimated to be up to €363 billion in 2000, corresponding to 3.9 percent of EU-27 GDP.
Tobacco manufacturing is dominated by a few large companies, while retail structures are more diverse across Europe.

The tobacco industry sector may be roughly categorised into the following activities: tobacco growing, tobacco manufacturing, tobacco wholesale and tobacco retail activities.

Tobacco manufacturing, and in particular the production of manufactured cigarettes, is dominated by a few very large companies in the EU, displaying the characteristics of an oligopolistic market. These companies are Philip Morris International (PMI), British American Tobacco (BAT), Imperial Tobacco and Japan Tobacco International (JTI). Total employment in tobacco manufacturing in Europe was estimated to be 47,000 in 2006, according to Eurostat data. However, overall cigarette manufacturing is a capital-intensive business. According to Eurostat data, gross turnover was in the region of €48 billion in 2006, and tobacco manufacturing is highly profitable.

There are different models of tobacco retailing across the EU, with some Member States having monopoly systems and specific retail outlets while others allow tobacco sales in a wide range of retail outlets. Eurostat reports a total number of 64,000 retail outlets with some 150,000 employees across Europe.

Tobacco product regulation incurs administrative burdens for tobacco manufacturers in the form of labelling and reporting requirements. Based on self-reported data from the tobacco industry, which are likely to be overestimated, the current administrative burden amounts to between €33.2 and €55.4 million per annum.

**Tobacco Use Generates Substantial Tax Revenues for the Member States, but Illicit Trade Undermines National Tobacco Taxation and Other Tobacco Control Measures**

The taxation of tobacco products through excise duties and VAT leads to substantial tax revenues for the Member States in the EU. In 2007 revenues from tobacco consumption accrued to just below €67 billion. Losses due to smuggling have been estimated to amount to €230 million a year in 2007. The Tobacco Products Directive is a key instrument of European tobacco control policy. European tobacco control policies encompass a wide range of policy measures, including restrictions on cross-border advertising, harmonisation of tobacco excise duties, initiatives to reduce exposure to second-hand smoke, recommendations for comprehensive tobacco control policies across Member States and tobacco product regulation.

One of the key instruments is the Tobacco Products Directive (2001/37/EC), which establishes maximum tar, nicotine and carbon monoxide (TNCO) yields for cigarettes, specifies the labelling provisions, bans the use of misleading descriptors – such as ‘mild’, ’light’ and so on, and bans the marketing of oral tobacco in the EU (except in Sweden). The implementation of the Tobacco Products Directive has been assessed in two reports on its application. These identified emerging issues and areas for further action which DG SANCO is now seeking to address in an upcoming revision of the directive.

**DG SANCO Considers Changes in Five Areas of the Regulation**

DG SANCO is thus currently considering revising the directive in five areas of tobacco product regulation:

1. Adjusting the scope of the directive by including further tobacco products and paraphernalia.
2. Changes to the labelling requirements for producers.
3. Introducing reporting and registration requirements and market control fees.
4. Defining the ingredients of tobacco products.
5. Revising the sales arrangements for tobacco products.
For each of these areas of change, DG SANCO is presently considering a number of measures to strengthen current regulation, and has clustered these into five policy options. These options may be described as follows:

- Option 1: No change.
- Option 2: No binding measures.
- Option 3: Minimum revision of the directive, bringing it in line with scientific and international developments.
- Option 4: Revision of the directive, bringing it in line with scientific and international developments and strengthening the protection of vulnerable groups.
- Option 5: Revision of the directive with the objective of strengthening product regulation and full implementation of the polluter pays principle.

This Study Will Inform a Full Impact Assessment by DG SANCO

Against this background, DG SANCO commissioned RAND Europe to provide support for assessing the impacts of these five policy options. This report serves as an input to DG SANCO’s own impact assessment exercise. By taking into account the possible health, economic and social impacts of these policy options, RAND Europe weighs their costs and benefits and supports the identification of a preferred policy option to meet DG SANCO’s objectives of achieving a high level of health protection and ensuring good functioning of the internal market. This report does follow the impact assessment guidelines of the European Commission (EC) as far as feasible; it, however, does not constitute a full impact assessment.

A Variety of Methods to Assess Possible Impacts of European Action Has Been Used in This Study

This study uses a variety of research methods and techniques of analysis to arrive at an assessment of the different social and economic impacts of the options currently being considered by DG SANCO. It is primarily based on analysis of existing literature and data sources, but additional primary data have also been gathered to inform the assessment of the administrative burden and compliance costs for industry. The key methods used are as follows:

1. Targeted literature reviews of both the health and economic impact of different measures of tobacco product regulation, including labelling and health warnings, changes in sales arrangement, more stringent regulation of ingredients and additives and reporting requirements.
2. The analysis of statistical data available based on official data sources, including data from the World Health Organization (WHO), Organisation for Economic Cooperation and Development (OECD), Eurostat and Eurobarometer.
3. Primary data gathering, using key informant interviews and questionnaires with tobacco manufactures and retailer associations, on the administrative burden and compliance cost of tobacco product regulation. These data were analysed using a methodology inspired by the standard cost model.
4. Two quantitative models were developed and used to forecast future mortality and morbidity rates, and healthcare costs, and to model the macroeconomic impacts of reductions in smoking prevalence.
5. A cost consequence framework and scoring mechanism to compare the different options and to identify their different impacts was also used.

With the strengths and limitations of these options in mind and taking into account the timeframe and scope of this research project, RAND Europe assessed the potential impacts of the options considered.
Stakeholder Consultation

As part of the development of this research, key stakeholders were consulted in an informal consultation exercise, preceding the formal consultation to be conducted by DG SANCO as the legislative proposal is developed. The key objective of the stakeholder consultation was to provide input for this research project at an early stage and to ensure that the project team could obtain the best available information. The engagement with stakeholders had two key components:

1. Discussion of an interim report, with stakeholders having the opportunity to provide comments and feedback during a series of workshops, and to provide written comments for the research team.
2. An administrative burden measurement exercise with tobacco manufacturers and retailers, consisting of key informant interviews and the distribution of a cost questionnaire to a number of businesses and their umbrella organisations.

This Study Reviewed Evidence and Assessed Measures in Five Areas of Change

To assess the options suggested by DG SANCO, RAND Europe reviewed evidence in five areas of change to arrive at a balanced and reasoned assessment of the potential impacts of the different measures considered by DG SANCO.

Scope of the Tobacco Products Directive

Recent years have seen a diversification of tobacco products in use, such as roll-your-own cigarettes (RYO) and water pipes, and the emergence of new forms of product such as electronic cigarettes. Evidence shows that consumers do not have good knowledge about the harmfulness of these products and underestimate the health risks of their use. In the case of electronic cigarettes, very little is currently known about health impacts, and in many Member States they are not adequately regulated. Extending tobacco regulation to these products – as well as to paraphernalia such as rolling paper, water pipes, pipes, and so on – may help to increase consumer awareness and have positive health effects, but there is very little evidence available on the health impacts of regulating such products. Extending the scope of the Tobacco Products Directive would affect the producers of paraphernalia and electronic cigarettes, but given the limited information available on these business sectors, measuring this impact is fraught with difficulty.

Labelling and Packaging

There is a large and clear body of evidence showing that health warnings on tobacco products increase consumers’ knowledge about the health consequences of tobacco use, and contribute to changing attitudes towards tobacco and consumers’ smoking behaviour. In general pictorial warnings are more effective than textual warnings; and the larger the warnings, the more effective they tend to be. There are, however, difficulties in observing this individual-level effect at the population level using prevalence rates. Generic or plain packaging has been shown to reduce the attractiveness of cigarette packages and to direct the attention of the consumer to the more prominent health warnings on the pack, and is thus likely to strengthen further the positive impact of health warnings. There is strong evidence that quantitative TNCO measurement and labelling does not accurately represent the yields smokers are exposed to and that smokers wrongly interpret cigarettes with lower yields as less damaging for their health. Very limited information is available on the effect of additional inserts for tobacco packages.

Labelling and packaging are likely to result in administrative burden for tobacco manufacturers; these are, however, to a large extent one-off costs for adapting the label and can be further reduced by synchronising labelling changes due to regulation with labelling changes that would have occurred anyway (e.g. changes in text and pictorial warning contents). Thus the longer the transition period of introducing labelling changes, the lower the costs. Changes
Assessing the Impacts of Revising the Tobacco Products Directive

...in the packaging regime may impact on brand values, but there is little evidence of such an effect.

Registration and Market Control Fees
Improving the current unsatisfactory situation of ingredient reporting by having mandatory reporting formats may lead to better data about the composition of tobacco products becoming available, and subsequently to better consumer information and potentially better regulation. Using market control fees or a general liability principle to transfer healthcare costs to tobacco manufacturers has not been previously attempted, but it would be likely to have the same effect as a substantial rise in tobacco duty, leading to large positive health effects and savings in healthcare costs but also to reduced revenues and employment in the tobacco industry.

Ingredients
A substantial body of literature assesses the harmfulness, and in particular the carcinogenic nature, of specific tobacco ingredients, but little is known about the health effects a regulation or ban of these ingredients would have on tobacco consumers. Tightening the yield limits for manufactured cigarettes will not necessarily lead to better health outcomes as studies have shown that smokers compensate for lower (nicotine) yields by smoking more intensely or more.

Sales Arrangements
Restricting or banning the promotion of tobacco products in retail outlets, and restricting or banning the display of tobacco products at the point of sale (PoS), have been shown to remove smoking cues and reduce triggers for unplanned tobacco purchases in stores. This effect is thought to be particularly strong among adolescents and young people, who are thought to be more susceptible to such displays and promotions. However, the literature does not provide any estimates of the effect of removing such displays and promotions on smoking prevalence. Vending machines are often considered an easily accessible source of tobacco products for adolescents. The literature shows that (technical) solutions to restrict access to vending machines do not necessarily succeed in effectively restricting youth access, and therefore that banning vending machines altogether might be more effective to curb youth consumption of tobacco. However, adolescents often use a wide range of sources in order to access tobacco products – such as older-looking or older friends and acquaintances – and therefore although banning vending machines may have some impacts on youth tobacco purchasing, it would not prevent them from accessing tobacco products altogether.

The effect of package size is very mixed in nature, with both positive and negative effects observed. Small packages lower the barrier for purchasing tobacco, making it more feasible for people on tight budgets, including children and adolescents, to purchase tobacco. Therefore enlarging packages raises the barriers for purchase. At the same time, it has been observed that smokers regulate their intake by packs rather than by individual cigarettes and therefore bigger packs may incite smokers to increase their cigarette consumption.

Little is known about the total extent of cross-border (internet) sales of tobacco products, but it has been shown elsewhere that cross-border trade may undermine national tobacco control policies, in particular different excise duty rates but also underage sales regulation.

Some of the suggested changes to sales regulation – such as banning the promotion and display of tobacco products – would have substantial economic impacts, mostly on tobacco retailers. They would need to make changes to their stores and sale processes as well as losing advertising revenues from tobacco manufacturers. These costs might have a knock-on effect on price and thus consumption of tobacco products. Packaging changes would involve compliance cost for manufacturers, but could also lead to long-term savings if they lead to a reduction in product lines.
Baseline Scenario and the No-Change Option

To assess the impacts of changes to the Tobacco Products Directive and to assess the impacts of the 'no-change' policy option, RAND Europe developed a baseline scenario. The baseline scenario assumes that past trends in prevalence and health impacts will continue into the future. There are two main elements in the baseline scenario: a forecast of future prevalence, and a forecast of future mortality and morbidity. Derived from these two forecasts are impacts on healthcare costs and tax revenues on the tobacco industry.

Even in the absence of stricter tobacco product regulation, we forecast prevalence will fall across EU over the next decades. This result is based on a strong trend in prevalence reduction over the last decade or so, which has seen a considerable extent of tobacco control policy being implemented in the EU, and the scenario may thus overestimate the reduction in prevalence if regulatory activity in fields such as taxation and smoke-free environments is not maintained at the current level.

Based on falling prevalence, the baseline scenario forecasts a continuing fall in employment in the tobacco manufacturing and tobacco retail sectors. In all but one of the different forecasts available, tax revenues are likely to increase despite changes in prevalence, assuming the relationship between consumption and tax revenues remains the same as in previous years.

For assessing future health impacts we assumed an average time lag of health impacts of 17 years. Thus the baseline scenario will be dominated by past changes in prevalence and the effects of current policy will only be felt well into the 2020s. Male mortality and morbidity rates will therefore decline across the EU until 2027, while female rates will increase until 2027. Overall, we estimate a total of 342,000 tobacco-related deaths in 2027, direct healthcare costs of €36 billion and indirect costs of €43 billion.

RAND Europe Assessed Economic and Health Impacts of Five Different Policy Options

RAND Europe assessed the economic and health impacts of five different policy options. While smoking tobacco also has environmental effects, these were not considered central to this assessment.

Option 1

The baseline scenario describes the no-change option. In this case, even in the absence of tighter tobacco product regulation, smoking prevalence and tobacco-related morbidity, mortality and healthcare costs are likely to fall until 2027, accompanied by reduced employment and economic activity in the tobacco industry sector. This option would, however, not address the obvious shortcomings of the current directive. These include difficulties in dealing with new and emerging products, and unsatisfactory ingredient reporting and information and consumer awareness of the harmfulness of tobacco products other than manufactured cigarettes. The administrative burden arising from continuing reporting requirements would continue to be incurred by the tobacco industry, and is estimated to be at around €1 million to €10 million for cigarette manufacturers, and between €0.3 million and €1.7 million for cigar manufacturers.

Option 2

The impact assessment guidelines encourage EC services also to explore non-binding measures as an alternative to binding legislation. In the case of tobacco product regulation, where a range of binding legislation is already in place, such an approach is likely to encounter difficulties as the current legislative framework could not be amended or changed. In terms of effectiveness, experience with previous non-binding measures – such as harmonised
reporting formats and laboratory cooperation – have not proved very successful. Against this background, no detailed list of non-binding measures has been developed by DG SANCO to be assessed in this study; nevertheless we should like to explore potential health and economic impacts briefly.

In terms of achieving positive health impacts, some impacts could be achieved by Member States implementing stricter measures on their own, as is already the case for the introduction of pictorial warnings, displays bans and restrictions or bans on vending machines. Other measures such as introducing large pictorial warnings or plain packaging would only be possible after a change in regulations. This might lead to more diverse tobacco product regulation in the areas where the current Tobacco Products Directive allows further measures by Member States, and to no change in the areas where a revision of the directive would be required. Thus, overall health impacts would be likely to be lower than in scenarios where a revision of the current directive is implemented.

More diverse national tobacco control regulations would, however, certainly have a negative impact on tobacco manufacturers across Europe. More diverse regulation increases the cost of compliance as more national particularities have to be taken into account. This includes, for example, a search for relevant information on regulation and adapting products to meet national requirements, and has the potential to undermine the functioning of the single European market.

**Option 3**

Option 3 is the first ‘legislative option’, combining measures in all areas of change. It has been designed as a minimum revision to the directive, bringing it into line with scientific and international developments. Our assessment starts with the health impact.

**Health Impact**

Analysing this option, the strongest health impact may be expected from the introduction of mandatory pictorial warnings, which according to a UK impact assessment could reduce prevalence by at least 0.5 percent, saving 900 lives and preventing 9,300 cases of lung cancer, aerodigestive cancer and chronic obstructive pulmonary disease (COPD) annually from 2027, with related savings in healthcare costs.

Especially targeted at adolescent smokers are the measures relating to underage sales, vending machines and the promotion of tobacco products in retail stores. For all these measures positive health impacts, albeit not quantifiable, may be expected as these measures have been shown to influence purchasing decisions. The overall scope of the impacts will, however, remain limited as many Member States have implemented similar measures already and the changes would mean a further institutionalisation of common practice in the Member States. For example, all but two Member States have already instituted a minimum purchasing age of 18 years.

Introducing a minimum package size is also a measure designed to protect adolescent smokers. The reasoning here is that larger packets are more expensive, and would be less likely to be bought by cash-strapped youths. Evidence of the impact of this measure is, however, very mixed because bigger pack sizes have been shown to increase tobacco consumption. Therefore we do not expect positive, population-wide health effects from this measure.

Changes in the labelling of tobacco yields will without a doubt benefit consumers as it has been shown that quantitative yield information confuses consumers about the relative harmfulness of different tobacco products. This has to be set against the evidence that lower yield cigarettes are as harmful as high-yield cigarettes, given that smokers compensate for lower yield cigarettes by either smoking more intensely or smoking more cigarettes in order to obtain the dose of nicotine they require. We do not expect additional measurement methods and a further reduction of yields to have substantial health impacts. This is somewhat dif-
different for the ban on carcinogenic ingredients, which could reduce the presence of high-risk additives and ingredients currently used in tobacco products. However, there is not sufficient knowledge about this, and there is no common list of these ingredients that could be used to determine the most harmful ingredients and thus those whose reduction would be most likely to produce a positive impact on the health of consumers.

The primary benefit of extending the scope of the directive to paraphernalia and other non-tobacco nicotine products would be to increase consumers’ awareness of the risks of these products. Smokers of roll-your-own cigarettes (RYO), pipes and water pipes often believe that these products are less harmful than manufactured cigarettes when in fact there is evidence to the contrary. There are, however, difficulties regarding how far the current regulations could meaningfully be applied to the other product categories.

This leads us to a set of measures contained in Option 3, concerning the reporting and registration of tobacco products. While these measures do not have direct health impacts, they are set out to develop the (scientific) infrastructure to improve both scientific and regulatory knowledge about tobacco products, as well as to increase the information available to consumers and thus bring about clear long-term benefit.

**Economic Impact**

For all options changes in prevalence, either directly induced by policies such as labelling or as a result of increasing costs to industry, have the most wide-ranging economic impacts. For Option 3 we expect a decline in prevalence of 0.5 percent through labelling measures. Prevalence changes are likely to have an impact on industry revenue and profits (€200m and €35m) and on employment (–0.5 for manufacturers, retailers (–2.9 percent to –1.3 percent) and wholesalers (–1.5 percent to 0.1 percent).

Tax revenues may fluctuate in the range of –€350 million reduction or an increase of €1.1 billion if current trends of increased revenues continue. Prevalence changes resulting from new labelling requirements will save direct healthcare costs in the region of €91 million, and indirect costs of mortality and morbidity of €108 million.

For industry the economic impact of Options 3 to 5 arises out of the administrative burden for manufacturers and compliance costs for retailers. A number of measures in Option 3 are likely to result in administrative burden as they require changes to the packaging and labelling of tobacco products. These occur primarily as one-off costs for the change of a label; ongoing costs seem to be low. It is important to note that these costs are not simple to calculate. The maximum cost incurred by industry will be that of the most comprehensive labelling change.

In this option the costs would range between one-off costs of €101.8 million and €198.8 million, and only marginally increased ongoing costs. Indeed, introducing qualitative TNCO labelling may increase annual running costs by between €4.8 million and €9.8 million a year only. Adjustments to the reporting and registration requirements will cause additional administrative burden, but are overall relatively low. The introduction of standardised electronic reporting may even reduce the burden for tobacco manufacturers.

Owing to the large number of businesses, retailers face the most substantial economic cost in adapting to measures proposed in this option. The one-off costs for retailers have been estimated to be between €44.1 million and €394.2 million and ongoing compliance costs to be up to €70.8 million a year. Another cost for retailers will be that of the introduction of age restrictions for vending machines. However, these will be relatively low (up to €48m) as many Member States already have such measures in place.

Costs that could not be quantified, owing to uncertainty in the required action as well as a lack of data, include the costs for reformulating products because of changed ingredient regulation and the introduction of minimum package sizes.
Option 4

Option 4 is the second option that involves changes to the legislative framework. The suggested measures have been in particular designed to bring the directive into line with scientific and international development and strengthen the protection of vulnerable groups, particularly adolescents. Again we started by looking at the health impact of this option.

Health Impact

In this option even stronger labelling requirements are suggested, with the mandatory introduction of pictorial warnings covering 75 percent of the pack in combination with generic or plain packaging. These two measures are likely to have an even stronger impact on prevalence rate, so the conservatively estimated 0.5 percent reduction in prevalence – leading to reduced mortality of 900 lives and 9,300 fewer cases of lung cancer, aerodigestive cancer and COPD annually from 2027 with related savings in healthcare costs – will be the lower boundary of the expected effect.

Measures targeted at protecting adolescents from smoking are further strengthened in this option, with a complete ban on vending machines for adolescents – which would solve the enforcement problems related to age restrictions on vending machines and could lead to small reductions in youth smoking. It has, however, to be stated that this effect will be far less effective in reducing the current percentage of youths using vending machines as they are likely to compensate at least partially by using other sources of supply such as older-looking – or older – friends and acquaintances.

A ban on cross-border internet sales of tobacco products may help Member States to enforce their wider tobacco control policies, in particular taxes and age restrictions. Overall, internet purchases of tobacco products constitute only a very small proportion of tobacco purchases; therefore we do not expect this to have a measurable health effect.

Widening the definition of ingredients to cover the tobacco leaf, as well as introducing higher market control fees to cover the costs of ingredient work, would contribute to a better understanding of the harmfulness of specific ingredients, including the tobacco leaf, but health impacts would be achieved in the long term only if further action is taken on the basis of this information.

Finally, this option contains a measure to decrease continuously the yield limits of tobacco products. As discussed earlier, given the evidence that smokers compensate for lower yield cigarettes by smoking more intensely or more, there is little evidence that such measures would produce positive health impacts on consumers.

The economic impacts of Option 4 are only slightly higher than those for Option 3, with slightly increased costs for manufacturers and retailers, and with the same effect on smoking prevalence.

Economic Impact

The economic impacts of Option 4 are only slightly higher than those for Option 3, primarily in the form of increased costs for manufacturers and retailers, and the same effect on smoking prevalence is expected.

For Option 4 we thus expect a decline in prevalence of 0.5 percent through labelling measures. Prevalence changes are likely to have an impact on industry revenue and profits (€200m and €35m) and on employment (−0.5 for manufacturers, −2.9 percent to −1.3 percent for retailers and −1.5 percent to 0.1 percent for wholesalers).

Tax revenues may fluctuate in the range of €350 million reduction or an increase in €1.1 billion if current trends of increased revenues continue. Prevalence changes resulting from new
labelling requirements will save direct healthcare costs in the region of €91 million, and indirect costs of mortality and morbidity of €108 million.

Labelling costs for industry may be expected to stay the same between options as they already include the costs incurred for a substantial redesign of labels. However, the cost for retailers of implementing restriction on the display of tobacco products is potentially substantial.

In this option there are, however, important cost impacts that could not be quantified. The first are the costs of introducing a comprehensive ban of vending machines across Europe, which is very likely to be substantial in terms of sunk costs but which could be reduced by a long transition period. The second important cost that could not be quantified concerns tobacco manufacturers’ brand equity, which would be substantially reduced if plain packaging is introduced and if other possibilities for maintaining brands, such as in-store advertising, are banned as well.

**Option 5**

In Option 5 a further strengthening of the directive is foreseen, with the objective of strengthening product regulation and fully implementing the polluter pays principle.

**Health Impact**

Option 5 is again characterised by a further tightening of the labelling requirements, with pictorial health warnings covering most of the package surface of a plain tobacco pack. Compared to the other options, this is likely to have the largest health impact and is likely to exceed the conservative estimate we used in the quantitative estimation. For this option pictorial warnings are very large and there is no possibility of branding and other distracting designs. The success of producing inserts is less certain. There is only sparse evidence of the effectiveness of this measure and information, if provided in a text-heavy format, may be less effective in reaching less literate smokers.

The largest health effects of all options may, however, be expected through the two different approaches to internalising the external costs of smoking through fees or through making cigarette manufacturers liable for the external costs engendered by tobacco consumption. If the currently approximate €100 billion in indirect costs is passed on to tobacco manufacturers, this will have a substantial impact on the price of tobacco products and thus on the prevalence of tobacco use. Our calculation estimated a 25 percent reduction in prevalence, which would result in a reduction of around 45,000 in smoking-related deaths and 46,000 fewer cases of lung cancer, aerodigestive cancer and COPD per annum by 2027.

The complete ban of tobacco promotion and displays in store is likely to have a positive impact on adolescent smoking and to a lesser extent also on adult smokers – in particular on those attempting to quit or stay quit – as all smoking cues would be removed from stores. As the implementation of this measure is connected to considerable costs, this would have an additional impact on the price of tobacco products, which could lead to further reductions in prevalence, estimated at 0.12 percent, and result in 200 fewer deaths and 2,200 fewer cases of lung cancer, aerodigestive cancer and COPD annually by 2027.

From the introduction of a minimum package size we do not expect population-wide health effects as there is conflicting evidence on the health impact of such a measure.

Further measures in this final option concern the infrastructure to collect and analyse ingredients, which could have long-term positive health impacts.

**Economic Impact**

Without a doubt Option 5 would have the most substantial economic impact, both in terms of costs for industry and in terms of potential economic benefits such as saved healthcare costs.
This is because of the idea of transferring healthcare costs to the tobacco manufacturers, who would in turn be required to increase the price of their products, leading to an overall reduction in prevalence.

Using the data available, we would expect a 25 percent reduction in prevalence, with a related reduction in revenues of €10 billion, reduction in profits of €1.7 billion, and reduced employment for manufacturers of between 13 percent and 17 percent, of 15–22 percent for wholesalers and of 50–70 percent for retailers.

Lost tax revenues would constitute around €15 billion (a reduction of around 24 percent), while direct healthcare costs of €4.5 billion and indirect costs of €5 billion to €6 billion could be saved annually.

We expect the impacts of labelling costs and changes in prevalence related to these to be along the same lines as for the other two regulatory options, but with higher one-off and ongoing costs for banning the display of tobacco products in retail stores. These have been estimated as set-up costs of between €321 million and €2,297 million, with ongoing costs of around the same level.

In addition to these impacts, other important unquantified impacts include the cost of setting up an EC laboratory to conduct ingredient work, which is likely to be transferred to industry through fees.

For more information, see RAND TR-823-EC, available at http://www.rand.org/pubs/technical_reports/TR823.html
Building Community Resilience to Disasters
A Way Forward to Enhance National Health Security

by Anita Chandra, Joie Acosta, Stefanie Stern, Lori Uscher-Pines, Malcolm Williams, Douglas Yeung, Jeffrey Garnett, Lisa S. Meredith

Abstract

Community resilience, or the sustained ability of a community to withstand and recover from adversity, has become a key policy issue at federal, state, and local levels, including in the National Health Security Strategy. Because resources are limited in the wake of an emergency, it is increasingly recognized that resilience is critical to a community’s ability to reduce long recovery periods after an emergency. This article shares details of a report that provides a roadmap for federal, state, and local leaders who are developing plans to enhance community resilience for health security threats and describes options for building community resilience in key areas. Based on findings from a literature review and a series of community and regional focus groups, the authors provide a definition of community resilience in the context of national health security and a set of eight levers and five core components for building resilience. They then describe suggested activities that communities are pursuing and may want to strengthen for community resilience, and they identify challenges to implementation.

Full Text

Community resilience, or the sustained ability of a community to withstand and recover from adversity (e.g., economic stress, influenza pandemic, man-made or natural disasters), has become a key policy issue, especially in recent years (HHS, 2009; The White House, 2010; DHS, 2010). This emphasis on resilience is being embraced at federal (Department of Health and Human Services [HHS], Department of Homeland Security [DHS], the White House), state, and local levels. The National Health Security Strategy (NHSS) (HHS, 2009) identifies community resilience as critical to national health security, i.e., ensuring that the nation is prepared for, protected from, and able to respond to and recover from incidents with potentially negative health consequences. Given that resources are limited in the wake of an emergency, it is increasingly recognized that communities may need to be on their own after an emergency before help arrives, and thus need to build resilience before an emergency. Resilience is also considered critical to a community’s ability to reduce long recovery periods after an emergency, which can otherwise require a significant amount of time and resources at the federal, state, and local levels.

While there is general consensus that community resilience is defined as the ability of communities to withstand and mitigate the stress of a disaster, there is less clarity on the precise resilience-building process. In other words, we have limited understanding about the components that can be changed or the “levers” for action that enable communities to recover more quickly. The literature to date has identified factors likely to be correlated with achieving resilience for communities, including reducing pre-disaster vulnerabilities and conducting pre-event prevention activities to minimize the negative consequences of disaster; however, these domains have been rather broad and lack the specificity required for implementation. Further, community resilience in the context of health security represents a unique intersection of preparedness/emergency management, traditional public health, and community development, with its emphasis on preventive care, health promotion, and community capacity-building. Thus, addressing the national goal of building community resilience (as outlined in the NHSS) offers an opportunity for communities to identify and build on the public health activities that local health departments and their partners are already pursuing. Community resilience is a relatively new term for the public health community, but it captures and expands upon many traditional themes in emergency preparedness as well as general health
promotion. In the context of today’s resource-limited environment where efficiency is critical, communities can identify and leverage the activities that are already in place to further build resilience.

Although the importance of community resilience to health security is widely recognized, understanding how to leverage existing programs and resources to build community resilience is a significant challenge. Important community tools have been developed to assist communities in enhancing aspects of resilience, and they should be used. They include the Community Advancing Resilience Toolkit (CART) and the work by the Community and Regional Resilience Institute (CARRI).

However, a roadmap or initial list of activities that communities could implement to bolster community resilience specific to national health security is still needed. Several important assumptions motivate the need for this roadmap. Despite progress in identifying the conceptual and theoretical underpinnings of community resilience, a working definition of community resilience in the context of health security has been lacking. Further, we acknowledge that communities have been implementing many strategies to enhance their resilience. However, it is difficult for local health departments and their partners to synthesize the wealth of information from the current body of literature and place it within the context of national health security in a way that will inform local planning. To date, communities have minimal opportunity to share activities for building or enhancing community resilience and to discuss whether and how government and nongovernmental actors should be involved. Further, it is currently unclear how to measure community resilience to assess the level of progress toward achieving greater health security.

This report provides an initial model of options for building community resilience in key areas. Note that in certain circumstances, communities have already undertaken activities similar to those listed herein. This report is intended to be comprehensive, and therefore it provides a menu of options that can be prioritized.

The report is intended principally for community leaders developing a local strategy for building resilience. These leaders include government and nongovernment actors who may be part of local emergency planning committees or related community planning teams. Given the limited evidence base on what activities are most effective for bolstering community resilience, the report is not intended as an implementation guide or “how to” toolkit. Although the goal of the report is to provide information to motivate local planning, it will be incumbent upon communities to critically review the information, assess the activities they are already undertaking, select from newly identified activities with attention to which activities are feasible given resource constraints, develop locally driven plans, test activities, and share lessons learned with other communities.

For this study, we performed three tasks: (1) conducted a substantive literature review, (2) convened six stakeholder focus groups across the United States, and (3) held three meetings with relevant subject matter experts (SMEs). The definition of community resilience and the activities we outline here for achieving resilience were created in consultation with outside experts representing various stakeholder groups in public health, medicine, social services, and emergency management.

Definition of Community Resilience in the Context of National Health Security

The definition of community resilience is shown in the box. The definition draws upon both the literature review (Norris, 2008; Chandra et al., 2010; HHS, 2009; HHS, 2010), as well as discussions with focus group participants.

The definition emphasizes the following concepts, which focus group participants suggested would be evident in a resilient community:
Definition of Community Resilience

Main Definition:
Community resilience entails the ongoing and developing capacity of the community to account for its vulnerabilities and develop capabilities that aid that community in (1) preventing, withstanding, and mitigating the stress of a health incident; (2) recovering in a way that restores the community to a state of self-sufficiency and at least the same level of health and social functioning after a health incident; and (3) using knowledge from a past response to strengthen the community’s ability to withstand the next health incident.

Key Components:
Key components or “building blocks” of community resilience that affect both a community’s pre-event vulnerability to disaster and its adaptive capacity to recover include the physical and psychological health of the population; social and economic well-being; individual, family, and community knowledge and attitudes regarding self-reliance and self-help; effective risk communication; level of social integration of government and nongovernmental organizations in planning, response, and recovery; and the social connectedness of community members. In order to build community resilience, a community must develop capabilities in the following areas: active engagement of community stakeholders in health event planning and personal preparedness, development of social networks, creation of health-promoting opportunities to improve the physical and psychological health of the community (as well as to address disparities in health across subgroups), plans and programs that address and support the functional needs of at-risk individuals (including children), institution of plans to respond effectively to the post-disaster physical and psychological health needs of community members, and rebuilding plans for health and social systems that can be activated immediately.

- Engagement at the community level, including a sense of cohesiveness and neighborhood involvement or integration
- Partnership among organizations, including integrated pre-event planning, exercises, and agreements
- Sustained local leadership supported by partnership with state and federal government
- Effective and culturally relevant education about risks
- Optimal community health and access to quality health services
- Integration of preparedness and wellness
- Rapid restoration of services and social networks
- Individual-level preparedness and self-sufficiency
- Targeted strategies that empower and engage vulnerable populations
- Financial resiliency of families and businesses, and efficient leveraging of resources for recovery.

We acknowledge that the definition of “community” can widely vary; it can be a geographic term or can be bounded by membership to a cultural group. Although it will be important for local planning teams to define community boundaries with community stakeholders, for the purpose of this roadmap, we primarily use a geographic definition guided by the catchment area of the local health department (e.g., city/county/parish/municipality).

Levers for Building Community Resilience

To identify key activities for building and strengthening community resilience, we drew on findings from the literature review, focus groups, and SME meetings to define eight “levers” that can be used by communities to strengthen community resilience in the context of the health security. These levers are shown in the rounded boxes in Figure S.1.

The levers are designed to strengthen the five core components (shown in rectangular boxes), which are correlated with community resilience in the specific context of enhancing
health security or public health preparedness. The components are the main domains or factors associated with community resilience, such as the health of the population. The levers are the means of reaching the components, such as improving a population’s access to health services. The levers are highlighted in boldface type below:

- **Wellness** and access contribute to the development of the social and economic well-being of a community and the physical and psychological health of the population.
- Specific to the disaster experience, education can be used to improve effective risk communication, engagement and self-sufficiency are needed to build social connectedness, and partnership helps ensure that government and nongovernmental organizations (NGOs) are integrated and involved in resilience-building and disaster planning.
- **Quality** and efficiency are ongoing levers that cut across all levers and core components of community resilience.

### Activities for Building Community Resilience

Because activities related to the levers strengthen each of the components of community resilience, a community moves closer to achieving community resilience as it conducts more activities. This process is shown in a circle in Figure S.1 because developing resilience is not static but rather is an iterative and ongoing process.

This report describes suggested activities that communities can use or build on to strengthen community resilience in specific areas. The activities presented in the report offer a range of ideas that can be implemented by communities according to their specific needs. It will be
important for communities to use the roadmap as a starting point for local community resilience strategy development (see next section). None of these activities has undergone rigorous evaluation. Before a community resilience toolkit can be developed, communities will need to use this roadmap, report on lessons learned, and assess the impact of implementing particular activities.

**Implementation and Measurement of Community Resilience–Building Activities**

As communities review this roadmap, it is important to determine an approach to implementation, including monitoring and evaluating implementation and determining the effectiveness of particular activities. These implementation questions include the following:

- How will we know if these activities are working?
- What capacities are needed for communities to fully implement community resilience–building activities?
- How long will it take communities to achieve full implementation of community resilience–building activities?

**How Will We Know If Community Resilience–Building Activities Are Working?**

Measurement of community resilience is essential for the operationalization and implementation of community resilience. Measurement will allow communities, states, and the nation as a whole to assess hypothesized links between inputs into the community resilience process (e.g., community partnerships and education of community members) and outcomes (e.g., greater resilience). Measurement is also critical to track progress in building community resilience at the local level. We suggest some potential areas of measurement for community resilience. Testing of proposed measures will be needed to develop the evidence base, refine the measures, and inform the next generation of measures.

**What Capacities Are Needed for Communities to Fully Implement Community Resilience–Building Activities?**

Much as in traditional public health practice, implementing community resilience–building activities requires the capacity to build and maintain strong and reliable partnerships (e.g., the partnership lever), mobilize community members (e.g., the engagement lever), and use data and information for evaluation, monitoring, and decisionmaking (e.g., the quality lever). Strong and reliable partnerships involve a diverse array of public, private, governmental, and nongovernmental organizations (e.g., academic institutions, healthcare providers, advocacy groups, media outlets, businesses). In building partnerships, communities will have to consider such questions as who should take the lead in establishing partnerships and how community resilience–building activities might need to be adapted for specific communities. Engagement and self-sufficiency also require the capacity to mobilize partnerships. Models such as the Mobilizing for Action through Planning and Partnership (MAPP) have been developed to support community mobilization efforts (Mays, 2010). Finally, state and local health agencies are increasingly utilizing performance standards, measures, monitoring, and quality improvement processes.

**How Long Will It Take for Communities to Achieve Full Implementation of Community Resilience–Building Activities?**

Implementing community resilience activities takes time. In order to appropriately gauge expectations, a richer understanding of the process of implementation is needed. In addition, implementation planning should acknowledge the activities that communities are already pursuing to enhance resilience. It can be helpful to draw guidance from a model of implementation that outlines the stages that a community must pass through before full implementation is achieved (Simpson, 2002). One such model is the Simpson Transfer Model, in which diffusion happens in four stages: exposure, adoption, implementation, and practice (Simpson, 2002). Communities must first be exposed to community resilience–building and then can
build the capacity needed to adopt activities to build resilience. Once organizations have the capacity to implement community resilience–building activities, they begin early implementation, followed by practice of the activities until they become institutionalized. Appropriate monitoring and evaluation can help communities assess what stage of implementation they are in and gauge outcomes accordingly.

**Conclusion and Future Research Directions**

This roadmap represents an important step forward in identifying the critical elements of community resilience to support national health security and offers a practical list of potential activities for building resilience before a disaster. The report also suggests several areas in which the evidence base for community resilience needs to be strengthened. Clarification in such areas as the following should identify best practices in community resilience-building and measure the overall effect of increasing community resilience:

**Wellness and Access:** What are the best ways to frame preparedness in the context of wellness messaging? How should communities convey the connection between individual/family and community preparedness?

**Education:** How do we link better risk communication with improved community resilience?

**Engagement:** How can we use advanced technologies, including new social media, to inform the public, facilitate the social re-engagement of people after a disaster, and promote social connectedness?

**Self-Sufficiency:** What are the best means to incentivize individual and community preparedness? What policies, including financial and other incentives, will work?

**Partnership:** What is the best way to integrate nongovernmental organizations in planning, and what is the most effective way to assess the capacities and capabilities of specific NGO partners?

**Quality and Efficiency:** What are the best metrics for monitoring and evaluating resilience–building activities? Which baseline data are most critical for assessing key community resilience components and elements?

**References**


For more information, see RAND TR-915-DHHS, available at http://www.rand.org/pubs/technical_reports/TR915.html
Views from the Homefront
The Experiences of Youth and Spouses from Military Families

by Anita Chandra, Sandraluz Lara-Cinisomo, Lisa H. Jaycox, Terri Tanielian, Bing Han, Rachel M. Burns, Teague Ruder

Abstract

As the United States continues deployments of service members to support operations in Iraq and Afghanistan, it is increasingly important to understand the effects of this military involvement, not only on service members but also on the health and well-being of their spouses and youth. This article shares detail of this report that examines the functioning of a sample of youth in military families who applied to a free camp for children of military personnel and to specifically assess how these youth are coping with parental deployment. The report addresses the general well-being of military youth during and after parental deployment, with attention to their emotional, social, and academic functioning. It also examines the challenges that their nondeployed caregivers face. The study includes quantitative and qualitative components: three waves of phone surveys with youth and nondeployed caregivers, and in-depth interviews with a subsample of caregivers. The researchers found that children and caregivers who had applied to attend the camp confronted significant challenges to their emotional well-being and functioning. Four factors in particular—(1) caregiver emotional well-being, (2) more cumulative months of deployment, (3) National Guard or Reserve status, and (4) quality of caregiver-youth communication—were strongly associated with greater youth or caregiver difficulties.

Full Text

Background: Focus on Military Families

The wars in Iraq and Afghanistan represent the largest stress on the all-volunteer force since its inception in the early 1970s. Since late 2001, the United States has deployed approximately 2 million service members to support these operations. The pace of these deployments has been frequent, with many service members deploying several times over the past nine years, often with little quality time at home in between deployments. These deployments have also engaged the National Guard and Reserve forces extensively. In theater, the nature of combat exposure has placed additional stress on service members. Given the use of improvised explosive devices and the various insurgencies, there is no real front line. As such, even those in support roles are exposed to combat-related stressors.

The stressors that service members face during deployment may also influence the experiences of family members, both during the deployment and after the return home. However, the impact of these unique deployments and the wartime environment on military families is still not well understood.

A small but growing body of research has examined the impact of deployment on military families and has yielded valuable insights. However, there has been relatively little work in several areas: First, there is little information on how youth (and specifically pre-teens and teenagers) are faring across multiple domains or on understanding the experiences of youth as informed by both their own and adult perspectives. Second, there are few data on the challenges specifically related to deployment and reintegration that military youth face and how these challenges may differ by factors, such as youth age or gender, family military service or component, or the family’s military deployment history, including number of deployments and total months of deployment. Finally, there has been relatively little analysis of how
the wartime environment and deployments affect the emotional and psychological well-being of the spouse or other caregiver who stays at home to care for the family.

**Study Purpose and Approach**

This study is intended to begin addressing these research gaps. It represents the first comprehensive (i.e., across multiple domains), longitudinal examination of the behavioral and emotional well-being of a select sample of military families as they cope with the stress of war and deployment. The aim of the study is not to summarize the experience of all military families but rather to describe perspectives of a sample of military youth applying to *Operation Purple*, a summer camp program. The study addresses three research questions:

- How are military youth who applied to this summer camp program functioning emotionally, socially, and academically?
- What, if any, challenges do these study participants report during and after parental deployment?
- How are their nondeployed caregivers faring, particularly related to deployment?

To address these questions, a team of RAND researchers surveyed and interviewed a sample of military families from among the applicants to the 2008 *Operation Purple* camp, a free camp for children from military families that is sponsored by the National Military Family Association. There are camps at 63 sites nationwide. Children between ages 7 and 17 can attend, and multiple children from one family are eligible for the camps. The mission of *Operation Purple* is to help children meet other military youth and for those who have experienced a parental deployment to cope with the stress of war.

Initially, we recruited 1,507 youth aged 11–17 years from the *Operation Purple* applicant pool to participate in our study. We attempted to minimize some issues of selection bias by randomly selecting from the *Operation Purple* applicants to include families that mirrored the service and component composition of deploying personnel in November 2007 (the most current data at the time of the study). However, since applicants to *Operation Purple* are a service-seeking or program-seeking population of military families, we place study findings in this context throughout the report.

The study had two components: quantitative and qualitative. The quantitative component consisted of phone surveys with one youth and his or her nondeployed or "home" caregiver from each of the participating families at three time points over the course of one year: baseline in the summer of 2008, six months later in the winter of 2009, and then one year later in the summer of 2009. The surveys included the same questions to allow for repeated measurement across time, with the exception of open-ended questions about deployment experience that changed wave to wave. The second, qualitative, component involved in-depth, semistructured phone interviews with nondeployed caregivers to provide additional detail on how parental deployment affected family life and the experiences of the nondeployed caregiver.

We applied a set of general linear mixed models (McCulloch and Searle, 2001) to estimate the relationship between the outcomes of interest and key predictors while accounting for relevant covariates. We primarily used the longitudinal data set to explore which factors were significantly associated with outcomes of interest throughout the study period, rather than at a single point in time. We also examined whether there were any notable trends in how functioning (well-being) and the experience of deployment-related challenges changed over the study period, particularly for those who had experienced a deployment at baseline or during the study period and/or the return of a deployed parent during the study period. Our qualitative analysis employed traditional inductive coding processes to identify salient themes related to how nondeployed caregivers cope with parental deployment.
Key Findings

Below we summarize our findings for each of the research questions.

Youth Functioning and Well-Being

Using reports from both youth and their caregivers, we examined youth functioning and well-being in five areas: emotional difficulties, anxiety symptoms, peer and family functioning, academic engagement problems, and risk behaviors. For purposes of comparison, we used population-based data from studies of national samples of U.S. youth from the same age group, to the extent that those data were available.

Emotional or Behavioral Difficulties. We found that youth in our study were experiencing relatively high levels of emotional or behavioral difficulties. Overall, 30 percent of caregivers in the study at baseline reported moderate-to-high levels of emotional or behavioral difficulties among their children. At the 6-month and 12-month interviews, caregiver reports of youth difficulties decreased on average (compared with what these average scores were at baseline), but nearly 30 percent of caregivers in the study still reported difficulties in the moderate-to-high range. Among caregivers of youth 11–14 years, 34 percent in our study sample reported elevated emotional or behavioral problems compared with only 19 percent of youth this age in the general population.

Youth in the study also reported on their emotional or behavioral difficulties. Approximately 44 percent of youth in the study reported difficulties in the moderate-to-high range at baseline; this dropped to an average of 38 percent at 6 and 12 months.

Anxiety Symptoms. We found that youth in our study sample reported experiencing anxiety symptoms at levels that were higher than the average observed in other studies of youth. Thirty percent of the youth in our study reported elevated anxiety symptom levels, compared with 15 percent of youth in civilian studies. Over the study period (or survey wave to wave), anxiety symptoms reported by study participants decreased overall on average.

Peer and Family Functioning. Among our sample at baseline, caregiver reports of youth peer functioning problems were comparable to levels found in studies of other U.S. youth, but family functioning problems were slightly worse. Over the study year, peer functioning improved slightly; family functioning issues remained unchanged on average.

Academic Engagement Problems. We queried study participants about their ability to attend to tasks at school. Overall, report of academic issues was comparable to other studies of U.S. youth. Over the study period, youth academic engagement changed. On average, the score improved significantly between the 6-month and 12-month surveys.

Risk Behaviors. We asked youth in our study sample about their engagement in problem or risk behaviors, such as getting into fights with peers, getting into trouble at school, and using alcohol or other substances. Overall, study youth reported problem behaviors at rates comparable to those in other U.S. studies. For the purpose of this analysis, we compared only groups of youth on those items that all respondents answered, regardless of age. Over the study year, there was no change in the levels of youth-reported risk behaviors.

Groups Reporting More Problems in Functioning and Well-Being. The longitudinal data analyses identified particular subgroups and factors that were associated with greater levels of problems in functioning and well-being in our study sample.

- Older teens in our study reported more difficulties academically, while younger teens reported more anxiety symptoms.
- Girls in our study reported more anxiety symptoms.
- Caregivers in our study who were faring well emotionally were more likely to have children who were functioning well.
• Youth–caregiver communication problems were associated with youth functioning difficulties.

Deployment-Related Issues for Youth
The research team also examined issues for youth specifically related to parental deployment and reintegration using two scales for measuring deployment and reintegration challenges, one each for the caregiver and youth reports.

Deployment-Related Challenges. During a deployment, youth in our study sample reported that dealing with life without the deployed parent (68 percent) and helping the caregiver deal with life without deployed parent (68 percent) were the most difficult. Another frequently endorsed concern was not having people in the community understand what deployment is like (45 percent).

We also asked caregivers about youth difficulties during deployment. Caregivers in our study endorsed two items as the most difficult challenges for their child during deployment: dealing with life without the deployed parent (72 percent) and feeling overwhelmed by new responsibilities at home (57 percent).

Reintegration Challenges. We also asked youth and caregivers about reintegration challenges. Youth in our study cited two challenges most frequently: fitting returning parent back into home routine (54 percent) and worrying about the next deployment (47 percent). Caregivers in our study cited the same item as the most difficult challenge for their child during reintegration—fitting the returning parent back into the home routine (62 percent). Caregivers cited getting to know the deployed parent again (52 percent) as the second most difficult challenge.

Groups Reporting More Deployment and Reintegration Challenges. The longitudinal analysis identified subgroups in our study sample who had more problems over the course of the study year that were specifically related to deployment or reintegration:

• Older teens, youth experiencing more cumulative months of parental deployment, and youth whose caregiver had poorer emotional well-being reported more difficulties during deployment.
• Girls in the study reported more difficulties related to reintegration.
• Caregivers in the study with spouses in the Reserve component (Guard or Reserve) were more likely to report that their children faced deployment and reintegration challenges.

Caregiver Well-Being
We also asked caregivers in the study about their own well-being. With respect to caregiver well-being, we asked about their emotional status, as well as issues related to household management, their relationship with the deployed parent, and parenting issues. These are all areas in which significant changes may occur during a deployment. We then asked caregivers about challenges specifically related to the period of deployment.

Caregiver Emotional Well-Being. We assessed the emotional well-being of caregivers. We found that, within our sample and on average, caregivers’ emotional well-being improved over the study period, although there were important variations among subgroups, as we describe below. Decreases in difficulties between baseline and 6 months were not significant, but improvement in well-being between baseline and 12 months was marginally significant.

Household Hassles. A deployment may translate into loss of emotional or other kinds of support for caregivers, which may, in turn, lead to increased household burdens. We queried caregivers about the degree to which household-related challenges bothered them. Caregivers in the study were most bothered by the following household hassle at baseline: not having time to do things they wanted to do (53 percent) and having too many responsibilities
Views from the Homefront: The Experiences of Youth and Spouses from Military Families

at home (47 percent). The average report of household hassles declined over the course of the study.

**Relationship Hassles.** Prior research suggests that deployment can have a negative impact on the relationship between the caregiver and the deployed service member. The most frequently endorsed relationship hassles among our study sample at baseline were *changing roles in the marriage* (30 percent) and *problems growing apart from the partner* (25 percent). The average number of relationship hassles reported increased slightly from wave to wave over the study period.

**Parenting Hassles.** Caregivers were asked about a range of parenting challenges they had experienced in the six months prior to the interview, such as challenges related to parenting the focal child. Of these, concerns about *child’s behavior in school* (42 percent) and *problems with child’s behavior* (31 percent) most bothered caregivers in the study. The average report of parenting hassles decreased over the course of the study year.

**Groups of Caregivers and Factors Associated with Well-Being Problems.** We found that certain caregiver groups in the study reported more difficulties with well-being. We also found that certain factors were associated with more problems.

- Reserve component caregivers in the study reported poorer emotional well-being and higher numbers of household challenges.
- Household challenges decreased for families in the study as the quality of family communication increased on average wave to wave.
- Reserve component caregivers and all caregivers facing a current deployment in the study reported a higher number of relationship issues.
- Parenting issues were greater for caregivers of boys and those experiencing a deployment at the time of the study.
- Caregiver emotional well-being was the most salient variable across all challenges, with poorer emotional well-being associated with more challenges.

**Caregiver Challenges Specifically Related to Deployment**
The study team created scales to measure caregiver challenges specifically related to deployment and reintegration.

Key deployment challenges for caregivers in the study were the following: *taking on more responsibilities at home caring for children* (83 percent) and *helping child deal with life without the deployed parent* (80 percent). Difficulties reported did not change significantly during the study period.

During reintegration, the most widely cited caregiver challenges were *fitting deployed parent back into the home routine* (71 percent) and *rebalancing childcare responsibilities* (61 percent). Difficulties reported did not change significantly during the study period.

**Conclusions**
In interpreting our findings and drawing conclusions from them, it is important to bear in mind the unique characteristics of our study sample, which consisted of self-selected military families who were seeking a program. In particular, it should be noted that families in our study may have been experiencing more difficulties at the time of their application to *Operation Purple* than other military families, thus overestimating need. In the clinical services literature, those who are service-seeking tend to have higher need than the general population. On the other hand, these study families may also have access to resources that other families lack. In the youth development field, those young people who are at higher risk are the most difficult to recruit into programs. Thus, the absolute level of problems may be an underestimate relative to families who are in more distress and unable to organize to gain access to programs like *Operation Purple*. Regardless of which (if any) of these presumptive explana-
tions is true, we were able to identify which subgroups of families experienced relatively more or fewer difficulties. Doing so will help improve efforts to align program content more accurately with the needs of those seeking services.

Keeping this in mind, we conclude the following: Children and nondeployed caregivers who had applied to *Operation Purple* confronted significant challenges to their emotional well-being and functioning. Four factors in particular—(1) caregiver emotional well-being, (2) more cumulative months of deployment, (3) National Guard or Reserve status, and (4) quality of caregiver-youth communication—were strongly associated with greater youth or caregiver difficulties. We discuss each of these factors in more detail below.

- **Caregiver emotional well-being.** Among the study sample, we found that caregiver emotional well-being is related to both the caregiver and the youth across a number of dimensions. Caregivers in the study who reported poorer emotional well-being also reported that their children had greater emotional, social, and academic difficulties. Further, if caregiver emotional health difficulties persisted or increased on average over the study period, youth difficulties remained higher when compared with youth whose caregivers reported fewer emotional difficulties. Lower levels of caregiver emotional well-being were also associated with greater stressors for the caregiver, including more challenges maintaining the household, parenting, and relating to the deployed parent.

- **More cumulative months of deployment.** Families in the study that experienced more total months of parental deployment also reported more youth emotional difficulties, and these difficulties did not diminish over the study period. Families in the study with more months of deployment reported more problems both during deployment and reintegration.

- **National Guard and Reserve status.** Caregivers in the study with partners in the Reserve component (Guard or Reserves) reported more challenges than their counterparts in the Active component. In particular, Guard and Reserve caregivers in the study reported more difficulties with emotional well-being, as well as more challenges during and after deployment.

- **Quality of caregiver-youth communication.** The quality of communication between caregivers and their children was highly associated with family functioning. In addition, the quality of family communication indicated how well families were functioning. Families in the study reporting poorer youth–caregiver communication also reported more problems with youth well-being.

In addition, the study identified challenges specifically related to the deployment and reintegration of a parent/spouse.

- **A major challenge during deployment was difficulties maintaining the household.** Across the study period, we noted that both caregivers and youth in the study cited difficulties with taking on more household responsibilities. For caregivers, this included more parenting responsibilities, and for youth this included taking care of siblings. In addition, both caregivers and youth in the study reported difficulties confronting life without the deployed parent. Youth and caregivers also reported difficulties during deployment due to what they perceived as a lack of community understanding of what life was like for them during this period. This was particularly an issue for caregivers from the Reserve component.

- **Caregivers and youth in the study noted that reintegration of the deployed parent, while a joyous experience, also brought readjustment challenges.** Caregivers described difficulties in rebalancing childcare responsibilities while still ensuring that the deployed parent had the necessary time to adjust to home life. Youth in the study, on the other hand, did not experience this type of improvement if their parent returned, although it is possible that such improvement may occur but take longer to observe. Youth also reported that understanding their deployed parent again, particularly if that parent experienced mood changes, was difficult.
Recommendations

Based on these findings, we offer the following recommendations for policy and programmatic action, as well as further research.

- **Review availability of support programs or services, including mental health services, for caregivers.**

  Given the importance of caregiver emotional well-being as a factor related to youth well-being, ensuring the availability of and access to mental health services for spouses and children is important. In addition, more social and instrumental support services may be warranted. Caregivers have more responsibilities to juggle and thus may require help to balance these new burdens. Programs to help caregivers anticipate and plan for these changes may also be helpful. In addition, programs to help caregivers develop and maintain healthy social support networks, including those with other military spouses, may mitigate some of these stressors.

- **Target support for those families reporting children with elevated emotional difficulties and experiencing more months of deployment.**

  We noted that some youth in the study reported greater emotional difficulties or elevated anxiety symptoms during the study period, signifying that certain youth may be struggling with problems that do not diminish with time. As of this writing, military organizations do not have a systematic plan for screening and serving youth whose caregivers are experiencing significant months of deployment. Our findings also suggest that older teens (ages 15–17) and girls in particular may benefit from targeted initiatives.

- **Provide sufficient resources for caregiver support, particularly for Guard and Reserve caregivers.**

  Our study findings show that Guard and Reserve caregivers in our study sample reported higher levels of difficulties. This finding should be interpreted in the context of the study’s Operation Purple applicant sample. Given that it can be challenging for Guard and Reserve families to link to services (e.g., due to lack of proximity to military installation or connection to military resources), our sample of Guard and Reserve families may represent a unique group who may have a greater ability to access resources. The fact that this group reports difficulties represents an opportunity to better serve this subgroup. For instance, we should examine the availability of formal and informal mental health services, particularly when families are geographically far from military mental health providers.

- **Focus programs on the quality of family communication.**

  The quality of communication between caregivers and their children was associated with how families in the study fared during and after deployment. Thus, it is important to consider integrating evidence-based strategies in programs to improve the quality of caregiver–youth and caregiver–deployed parent communication. This may entail pre- and postdeployment interventions that address whole-family communication, focused on improving perceived empathy for each family member’s experience.

- **Implement support programs across the deployment cycle, including during the reintegration period.**

  We noted that families in the study faced challenges during deployment and reintegration, suggesting that support programs must be in place across the entire deployment cycle. Given the strong association between cumulative months of deployment and youth and caregiver difficulties, targeted initiatives for families experiencing many months of deployment may be needed.
In addition to these recommendations that specifically correspond to key subgroups reporting more challenges, the next two suggestions relate to the study findings as a whole.

- **Consider screening for family emotional well-being.**

  Our examination of the well-being of youth and nondeployed caregivers suggests that some type of ongoing assessment of family member health and well-being before and after a deployment may be warranted.

- **Require evaluation of programs in light of existing research.**

  Over the past seven years, there has been a rapid proliferation of programs to support military families. A rigorous and systematic evaluation of these programs is needed, including an assessment of how well program content aligns with the needs of the subgroups that would benefit most.

In addition, research needs to continue addressing gaps in understanding of the effects of deployment in youth and caregivers. In particular, there are four types of studies that are needed most urgently.

1. **Compare military families to civilian cohorts.** It is critical to understand how a contemporary cohort of youth is faring in order to isolate the unique stress that deployment may contribute. Future studies of this nature should consider including appropriately matched samples of nondeploying civilian youth. As with most studies to date of military youth, our sample had the limitations of convenience, in this case a population applying to a specialized summer camp program. Future efforts should use a population-based, representative sample.

2. **Examine caregiver well-being, with more measures of mental health.** Given the salience of caregiver emotional well-being, further examination of the mental health and well-being of caregivers is warranted, using validated mental health screening tools. To date, we have had limited information on the mental health of the caregivers.

3. **Tie longitudinal study periods to deployment periods.** A study that anchors all families to a deployment period to allow assessment before a deployment would improve measurement of the effects associated specifically with deployment, because there would be a common exposure point and all families could be examined on the same timeline.

4. **Follow youth over a longer period, into adulthood.** Following youth over a longer time period will help to determine if the emotional difficulties we noted in this study worsen across time points as deployments continue or level off. Tracking these youth into adulthood will also provide an opportunity to assess whether deployment-related challenges have an impact after adolescence.

Despite this need for additional research, the present study is able to provide important information about the status and experiences of a group of military families that are applying to Operation Purple, a summer program designed specifically for military youth experiencing parental deployment. This gives insight into the large group of families interested in such types of services and answers questions about the extent of their difficulties.

**Final Observation**

The unique features of the current conflicts in Afghanistan and Iraq—including multiple, extended deployments—are creating psychological and emotional challenges for both service members and their families. This research represents an important first step in understanding the nature of those challenges for military youth and their nondeployed caregivers within a self-selected sample of military families that sought support services. The findings identified key factors that were related to the experience of greater challenge for behavioral and emotional difficulties and explores the potential consequences of these difficulties. Continuing to broaden and deepen understanding of the challenges facing military families by study-
ing other samples of military youth, the challenges they face, and the resiliency resources they draw on in response will be critical for helping military organizations to understand their needs and to respond appropriately.

**Reference**


For more information, see RAND TR-913-NMFA, available at [http://www.rand.org/pubs/technical_reports/TR913.html](http://www.rand.org/pubs/technical_reports/TR913.html)
A Needs Assessment of New York State Veterans
Final Report to the New York State Health Foundation

by Terry L. Schell and Terri Tanielian, eds., with Carrie Farmer, Lisa H. Jaycox, Grant N. Marshall, Terry L. Schell, Terri Tanielian, Christine Anne Vaughan, Glenda Wrenn

Abstract

Mental health disorders and other types of impairments resulting from deployment experiences are beginning to emerge, but fundamental gaps remain in our knowledge about the needs of veterans returning from Iraq and Afghanistan, the services available to meet those needs, and the experiences of veterans who have tried to use these services. This article focuses directly on the veterans living in New York state; it includes veterans who currently use U.S. Department of Veterans Affairs (VA) services as well as those who do not; and it looks at needs across a broad range of domains. The authors collected information and advice from a series of qualitative interviews with veterans of Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF) residing in New York, as well as their family members. In addition, they conducted a quantitative assessment of the needs of veterans and their spouses from a sample that is broadly representative of OEF/OIF veterans in New York state. Finally, they conducted a review the services currently available in New York state for veterans. The study found substantially elevated rates of post-traumatic stress disorder (PTSD) and major depression among veterans. It also found that both VA and non-VA services are critically important for addressing veterans’ needs, and that the health care systems that serve veterans are extremely complicated. Addressing veterans’ mental health needs will require a multipronged approach: reducing barriers to seeking treatment; improving the sustainment of, or adherence to, treatment; and improving the quality of the services being delivered. Finally, veterans have other serious needs besides mental health care and would benefit from a broad range of services.

Full Text

Since October 2001, approximately 2 million U.S. troops have deployed as part of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). Although not always counted as official casualties by the U.S. Department of Defense (DoD), mental health disorders and other types of impairments resulting from deployment experiences are beginning to emerge.

DoD, the U.S. Department of Veterans Affairs (VA), and Congress have moved to study the issues, quantify the problems, and formulate policy solutions. They are beginning to implement the hundreds of recommendations that have emerged from various task forces, commissions, and research reports. However, despite widespread policy interest and a firm commitment from the military services to address these injuries, fundamental gaps remain in our knowledge about the needs of veterans returning from Iraq and Afghanistan, the adequacy of the care system available to meet those needs, and the experiences of veterans and service members who use these systems. Since many veterans will seek care in the civilian health care sector, state-based programs that integrate services and provide comprehensive lists of available resources might help service members and their families. But a lack of information about veterans’ state-level needs hampers states in their planning efforts.

We recently examined the problems facing the broad population of OEF/OIF service members and veterans (referred to as the “Invisible Wounds” study; see Burnam et al., 2009; Tanielian and Jaycox, 2008; Tanielian et al., 2008; Post-Deployment Stress: What You Should Know, 2008; Post-Deployment Stress: What Families Should Know, 2008; Meredith et al., 2008; Karney et al., 2008; Tanielian, 2009, 2008; Eibner, 2008; Jaycox, 2008). That project took a broad, societal view of problems facing returning service members and applied a health ser-
services perspective to develop policy recommendations. As in the current study of New York veterans, we examined prevalence of problems among returned service members and veterans and the systems of care in place to help them, using both qualitative and quantitative methods. We found that about one in five service members and veterans screened positive for a probable diagnosis of post-traumatic stress disorder (PTSD) or depression and that only about half of those had received any mental health care in the prior year. We identified important gaps both in access to mental health care and in quality of that care at the national level and made recommendations to help close those gaps that were widely disseminated to policymakers, to the media, and to key stakeholders.

Other research teams within the military and the VA health care system have also worked on these issues. We have published two recent reviews of this literature (Ramchand, Schell, Jaycox, and Tanielian, forthcoming; Ramchand, Schell, Karney, et al., 2010). These studies have typically found PTSD rates among previously deployed individuals that vary between 5 and 20 percent, depending on the specific population being sampled. Rates of major depression are typically similar to the rates of PTSD. In addition, studies of veterans actively seeking services in the VA have found somewhat higher rates of PTSD, depression, and physical health problems than have been found in other populations of returned service members.

Although there are now many studies assessing the challenges that individuals face who previously deployed for OEF/OIF, this existing literature is extremely limited for planning at the state and local levels. There are three reasons that these existing studies do not provide useful guidance to policymakers or service providers in these communities. First, the existing studies have systematically excluded a large proportion of community-dwelling veterans. Across all of the studies on OEF/OIF veterans, there are no studies that can estimate the need among veterans who have left the military service but have not sought treatment in the VA health care system. Neither DoD nor VA researchers have studied these individuals. Secondly, studies at the national level are not necessarily representative of the particular types of veterans who reside in particular states or communities, and they might not provide accurate estimates of the problems and needs of local veterans. Finally, research on veterans’ needs has focused almost exclusively on mental health problems. There is considerably less information about their needs across the broader range of services that states and communities might provide, such as other health, occupational, or educational benefits.

The current study is designed to address these shortcomings in the existing literature. It focuses directly on the veterans living in New York state; it includes veterans who currently use VA services as well as those who do not; and it looks at needs across a broad range of domains.

The study took a three-pronged approach to assessing and addressing the needs of veterans in New York state. First, we collected information and advice from a series of qualitative interviews with veterans of OIF/OEF residing in New York, as well as their family members. Second, we conducted a quantitative assessment of the needs of veterans and their spouses from a sample that is broadly representative of OEF/OIF veterans in New York state. Finally, we conducted a review of the services available in New York state for veterans. This information has been compiled in a format that is designed to serve as a guide for veterans.

**Qualitative Interviews of Veterans and Their Family Members**

We conducted six focus groups across the state of New York. Five of these were with veterans and one with family members. To increase the inclusion of women and family members, we also conducted eight individual phone interviews with female veterans and family members of veterans. Participants were recruited primarily through Iraq and Afghanistan Veterans of America (IAVA), which was funded separately by the New York State Health Foundation to assist with recruiting interviewees. IAVA sent email to its membership within approximately 50 miles of selected focus group locations, and potential participants registered online to attend. Participants received $50 for their participation.
The interviews were designed to (1) document how veterans and their family members think about the challenges they face; (2) gather opinions about the availability, quality, and comprehensiveness of the available programs and services; and (3) elicit innovative ideas for improvement. Across these interviews, several common themes emerged. In particular, veterans and family members reported a range of mental health concerns following veterans’ return from Iraq or Afghanistan, difficulties reconnecting with friends and family, and problems finding jobs commensurate with their skills. There was also a shared perception that it is extremely difficult to navigate the existing system of benefits and services across both VA and non-VA providers, including difficulties determining (1) what services are available, (2) whether the services would be helpful for one’s specific problems, (3) where services are available, (4) who is eligible to receive them, and (5) how to apply. Finally, there was general agreement on several suggestions for improvement, including improving military out-processing and subsequent outreach and educational efforts to increase utilization of existing services; expanding VA services to reduce travel time, waiting times, and delays in scheduling appointments; and expanding programs to help families of veterans.

It should be noted that, while qualitative interviews are extremely useful for gaining insight into how individuals think about specific issues, these research methods have substantial limitations. It is extremely important that the reader keep these limitations in mind while reviewing our results. First, the reader should be careful to avoid treating these opinions and perceptions as if they reflect objective facts in the world. We have abstracted these opinions from the interviews and focus groups but have deliberately not attempted to fact-check their statements. Secondly, participants in our interviews and focus groups were not a representative or random sample of veterans in New York state. In fact, they differed in systematic ways from the large group of veterans who were not interviewed. Finally, it is important to realize that these interviews represent a snapshot of these veterans’ opinions at a given point in time. It is possible that the veterans reintegrating in the future will be facing a different set of challenges from those discussed in these interviews.

Although the opinions expressed in qualitative interviews should not be taken as representative or accurate descriptions of the challenges that veterans face, these interviews do provide important insight into veterans’ beliefs and perceptions. It is important to document that veterans think that the system of care that serves them is difficult to understand, that it is time-consuming to navigate these systems, and that the quality of care is suspect and highly variable. These perceptions are important because they likely inhibit the use of services that would help veterans meet the challenges they face, even if, by objective or comparative measures, the services are promptly delivered and of high quality.

**Quantitative Needs Assessment of Veterans and Their Spouses**

We conducted a mixed-mode, telephone and web-based survey with 913 veterans and 293 spouses of these veterans. The data used for sampling veterans were obtained from a release of names and addresses (RONA) request to the VA. The RONA mechanism is designed to allow governmental and nonprofit organizations to provide outreach for veterans’ services, and this study provided a targeted needs assessment and service referrals to the participating veterans. The RONA provided names and mailing addresses of all VA-eligible veterans with addresses in New York who became eligible in the prior five years. Because these addresses did not have matched phone numbers and were, in many cases, several years old, we used two commercial databases, LexisNexis and Telematch, to get a land-line telephone number associated with a particular name and address and to identify more-recent addresses if they were available.

Letters were sent to a random sample of veterans explaining the study and providing information to allow them to complete the survey on the web. Individuals who did not complete the survey on the web were called on the phone and given an opportunity to complete the telephone version of the interview. After completing the veteran interview, we asked to inter-
view the spouse of each married veteran participant. Participants and their spouses were each paid $30 for their participation. Interviews were conducted in August–October 2010.

The assessment of veterans identified several areas of diminished health and well-being. A relatively high percentage of veterans (22 percent) were found to have a probable mental health diagnosis based on symptoms over the prior 30 days, with approximately equal numbers screening positive for major depression and for PTSD (16 percent for each). Ten percent of the sample met criteria for both PTSD and depression. This suggests that veterans are at substantially increased risk for mental health problems, particularly PTSD, relative to similar individuals in the general population. In addition to those with a current probable mental health diagnosis, many participants felt that they would benefit from mental health services. Approximately half of the sample had a probable need for treatment defined by either a current probable diagnosis or a self-indicated need for treatment. About a third of those with a need for treatment had sought mental health services in the prior 12 months. Slightly more than half of those who sought help received a minimally adequate dose of treatment in the past 12 months. When asked about barriers to seeking treatment, the most commonly endorsed barriers were concerns about the side effects of medications and concerns about potential institutional discrimination (e.g., by an employer or the government) against those getting treatment.

In addition to mental health problems, there was evidence that veterans face significant physical health and economic problems. Veterans were found to have significantly worse overall physical functioning scores than similar individuals in the general population. They were also unemployed at a significantly higher rate than the overall New York unemployment rate. In contrast, the level of alcohol abuse in the sample was very similar to that found among similar individuals in the general population, and relatively low rates of illicit drug use were reported.

Veterans were asked about specific benefits that they thought would be helpful to them. A majority of veterans viewed the following benefits as personally helpful: VA health care; education benefits; housing assistance, including home loans; and assistance at a VA vet center.

In contrast to the broad range of needs experienced by the veterans in the study, their spouses were remarkably similar to the general population. Their mental health, alcohol use, physical functioning, and rate of unemployment were all approximately equal to general-population norms. When asked about a range of common life hassles, few spouses reported being greatly bothered by them. However, when asked about problems experienced at the time of the veteran’s return from deployment, 44 percent reported having problems dealing with their veteran spouse’s mood changes, and 42 percent reported being worried about the possibility of future military deployments.

Conclusions

As we look across both the qualitative and quantitative needs assessment, several common themes emerge. First, it is clear from our study that veterans’ health and well-being are the responsibility of more than just the VA. We found both in our focus groups and in our survey that other clinical and social-service delivery systems are critically important for addressing veterans’ needs. The majority of veterans have other sources of health insurance, and much of the care delivered to veterans in New York is through either the civilian health care system or other public-sector providers. When thinking about how to improve the access to high-quality services for veterans, we need to think beyond making changes in the VA and look at factors in the private health care system, such as severe restrictions on the amount of mental health care provided by some insurance; the availability of both counseling and drug therapy; the mental health screening and referral procedures of primary-care physicians; and the level of training in evidence-based treatments for PTSD and depression among civilian providers.
A second theme that emerges across the qualitative and quantitative needs assessments, as well as our review of the available services, is that the health care systems that serve veterans are extremely complicated. Enabling veterans to access the benefits and services that are available to them will require, in many instances, personalized assistance. Focus group participants widely praised the work of the new regional OEF/OIF care coordinators within the VA. However, (1) most veterans do not know about this resource, and (2) these coordinators are focused primarily on helping coordinate VA care and might not know about other resources or benefits available to veterans. Better outreach is needed to connect veterans with care coordinators who can provide personalized assistance across a range of service sectors. Such outreach is extremely difficult in the current system, which is likely to miss the veterans who are most in need of assistance—i.e., those who have not yet enrolled in the VA system. Improving this outreach would be facilitated by more-up-to-date data on the full population of veterans. For instance, this could be accomplished by having the VA get regularly updated addresses from the databases maintained by the Social Security Administration or Internal Revenue Service.

A third theme that emerges across both the focus groups and the survey is that addressing veterans’ mental health needs will require a multipronged approach. It will require reducing barriers to seeking treatment; improving the sustainment of, or adherence to, treatment; and improving the quality of the care being delivered. Given the veterans’ concerns about drug side effects, making sure psychotherapy is widely available might be important. Addressing veterans’ concerns about occupational discrimination against those who get treatment might be more difficult. However, it might be helpful to educate veterans about the laws ensuring confidentiality of medical services (within both the VA and the civilian sectors), as well as recent changes to the security clearance process that reduce the likelihood of such negative outcomes from treatment. In addition to addressing these barriers, it might be critical to improve the overall quality of mental health care being delivered across all service sectors. This might require programs that increase screening in the civilian sector for the specific mental health problems that affect veterans, reduce wait times for counseling, increase the number of providers trained in the provision of evidence-based treatments for PTSD and depression, and provide mental health services at more-convenient locations and times.

Finally, many of the findings presented in this report have focused on mental health issues, which is consistent with the prominent role they played in both the qualitative and quantitative assessments. However, it is important to note that veterans have other serious needs. The current economic environment is extremely difficult for individuals who are making major career transitions. High unemployment is certainly a substantial threat to veterans’ overall psychological and physical well-being. This suggests that job placement, education, and vocational programs might be a welcome and effective means to improve veterans’ well-being. Similarly, there is a small, but important, subset of veterans who are facing substantial physical health limitations. Although there are disability benefits available to these individuals for limitations that can be shown to be service connected, there are a broader range of services that would likely benefit these individuals.

References


For more information, see RAND TR-920-NYSHF, available at http://www.rand.org/pubs/technical_reports/TR920.html
Developing Military Health Care Leaders
Insights from the Military, Civilian, and Government Sectors

by Sheila Nataraj Kirby, Julie A. Marsh, Jennifer Sloan McCombs, Harry J. Thie, Nailing Xia, and Jerry M. Sollinger

Abstract

The U.S. Department of Defense has highlighted the importance of preparing health care leaders to succeed in joint, performance-based environments. The current wartime environment, rising health care costs, and an increased focus on joint operations have led to recommendations for Military Health System (MHS) transformation. Part of that transformation will involve improving the identification and development of potential MHS leaders. An examination of how candidates are identified for leadership positions, the training and education opportunities offered to them, and the competencies they are expected to achieve revealed both a range of approaches and several commonalities in the military, civilian, and government sectors. A conceptual framework guided a series of interviews with senior health care executives from a wide range of organizations and military health care leaders from the Army, Navy, and Air Force, as well as a case study of the leader development approaches used by the Veterans Health Administration. Several themes emerged in terms of how leaders are developed in each sector, including the importance of mentoring, career counseling, 360-degree feedback, self-development, and formal education and training programs. Lessons learned in the civilian and government sectors hold importance for transforming the way in which MHS identifies and develops health care officers with high leadership potential for senior executive positions.

Full Text

Background and Purpose

Over the past few years, military leaders have realized that the Military Health System (MHS) has to transform itself and the way it does business. This need has been driven by the rapid escalation in the costs of health care, a changing environment with an increased emphasis on performance management, the unprecedented challenges facing the U.S. military at home and abroad that require it to assume new roles and responsibilities, and the need to transform the medical force so that future medical support is fully aligned with joint force concepts. As part of a larger project providing assistance to the MHS in establishing a joint medical education and training campus at Fort Sam Houston, Texas, RAND was asked to examine the ways in which leaders in the health care field are prepared and supported in the civilian and military sectors, to review the competencies necessary to be a leader in the current environment, and to recommend improvements to the ways in which potential leaders are identified and developed for leadership positions in the MHS.1

A primary goal of officer management is to produce qualified senior leaders who can function in both joint and service-specific environments and who have the competencies that are important for successful leadership. Our framework assumes that military medical officers are functionally qualified and continue to develop their domain knowledge and skills. Thus, our focus is on who is developed and where and how these officers receive the knowledge, experience, and acculturation necessary to qualify them for leadership in both service and joint environments. An organization’s approach to leader development plays out

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1 We use the term leader to identify an individual who is likely to be in a command or executive position in an organization.
against the larger backdrop of the local, regional, national, and global context, which shapes what an organization expects from leaders and how it designs and implements development strategies. These contextual factors also enable or constrain the ability of an organization to develop the needed leaders. There are three important dimensions of an organization’s approach to leader development: how it selects individuals who have the potential to be leaders, how it develops them, and how it incentivizes them to apply for and remain in leadership positions.

**Data and Methods**

The study encompassed several tasks, including a review of the literature on leader development and the creation of a conceptual framework to guide data collection and analysis. The conceptual framework focused on how organizations select “high-potentials” for leader development, the strategies that organizations use to incentivize and develop these leaders, and the extent to which the overall approach is systematic and purposeful. Obviously, an organization’s approach to leader development is affected by the context and the organizational environment and guided by explicit and implicit expectations for leaders. Using this framework as the basis for our interview protocol, we conducted structured interviews with 57 military health professions officers\(^2\) and community managers and with 30 civilian health care leaders in 25 organizations. We also conducted a case study of how one government agency—the Veterans Health Administration (VHA)—approaches executive leader development. The case study included interviews with 16 top-level leaders and network and facility directors. The interviews were conducted over a period of two years—2007 through 2009. The MHS, the VHA, and the civilian health care organizations examined in this study are all facing the same kinds of pressures with respect to delivering high-quality health care while struggling with escalating costs and rising demand. As a result, lessons learned by the VHA and civilian health care organizations about designing and implementing leader development policies may have considerable relevance for the military.

**Findings**

Data from these interviews, along with our extensive review of service documents and the literature on the subject, provide a rich portrait of how health care leaders are currently developed in the three sectors, the competencies necessary to be a successful leader in today’s environment, perceived gaps in leader development, and some perceived best practices.

Our findings are organized around four research topics:

- desired attributes of leaders in the health care field
- military officers’ perceptions about how well the current system works in preparing health professions officers to lead and succeed in performance-based and joint environments
- lessons learned from civilian health care organizations and the VHA regarding leader development
- recommendations to improve leader development of health professions officers in the services.

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\(^2\) Following U.S. Department of Defense (DoD) Directive 6000.12 (1996), we use the term *health professions officers* when referring to officers who are “serving in the Medical Corps, the Dental Corps, the Veterinary Corps, the Nurse Corps, the Medical Service Corps, the Army Medical Specialist Corps, the Biomedical Sciences Corps, officers whom the Secretaries of the Military Departments have designated as ‘qualified in specified healthcare functions,’ and those members in DoD programs leading to commissioning in, assignment to, or designation for service in any of those Corps” (Enclosure 2). When referring more generally to leaders in the civilian and military sectors, and in the Veterans Health Administration (VHA) more generally, we use the term *health care leaders*. 
Desired Attributes of Health Care Leaders

To determine the kinds of knowledge, skills, and experience that organizations believe that leaders need, we reviewed a number of civilian health care leadership competency frameworks, the High Performance Development Model adopted by the VHA, and the military health care leadership competencies identified by the Joint Medical Executive Skills Program (JMESP) as necessary for successful command of a medical treatment facility or for other executive MHS positions. In addition, we asked respondents about the attributes that organizations looked for in their senior leaders—the skills, knowledge, attitudes, and experiences that organizations expected of their executives. Perhaps not surprisingly, there was remarkable consistency in the set of competencies identified both by the frameworks and individuals, which we categorized into three types of competencies and experiences.

First, *management knowledge and experience* includes the skills and abilities to effectively manage financial, human, and information resources to ensure successful fulfillment of organizational goals. Respondents often described the need for both “hard” and “soft” skills. Identified common hard-skill competencies that fall into this category include human resource (HR) management (such as recruitment, staffing, training, and evaluation and assessment), financial resource management (such as budgeting, asset management, and monitoring of financial resources), and information and technology management. The soft skills, or interpersonal and communication skills (with internal and external customers), were considered equally important.

Second, *leadership knowledge and experience* provides strategic and visionary guidance to help the organization meet future challenges. Competencies that fall into this category include visionary leadership (i.e., envisioning a future state and influencing movement toward it), change leadership (i.e., continuously seeking innovative approaches and welcoming changes as opportunities for improvement), flexibility and adaptability, and creative and strategic thinking and planning.

Third, *enterprise knowledge and experience* includes competencies that demonstrate a sound understanding of the profession and the organization, such as organizational awareness or stewardship; an understanding of the larger context in which the organization operates (or systems-level thinking); and an understanding of the global environment.

All our respondents stressed the importance of educational achievement and competency in functional areas. In addition, several respondents also emphasized the importance of leaders who possess strong values and moral character (“a strong moral compass”) in addition to knowledge, skills, and abilities. According to several civilian and VHA respondents, a strong values orientation (e.g., organizational stewardship, integrity, financial responsibility) is included in competency profiles for top executives. Diversity of experience, practice in both managing and leading, and, in some cases, an understanding of and experience with the higher levels of the organization were mentioned as critical for leaders.

Respondents were divided in terms of the extent to which health care leaders should possess and maintain clinical skills. Some physician respondents—both military and civilian—stated that the greatest credibility of a health care leader comes from being a physician. In keeping with this belief, the Air Force has a policy of reserving command of medical centers and hospitals for physicians (Medical Corps, or MC). In contrast, the Army and the Navy have opened up these positions to all corps. Military respondents referred to these diametrically opposed policies as “best in breed” versus “best in show.” Most respondents (including some Air Force leaders) felt that the Air Force policy was shortsighted and out of step with practice in the civilian sector and organizations like the VHA, in which hospital leaders are often not physicians. Several leaders noted that clinical skills do not automatically translate into leadership skills.

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3 As of December 2010, the Air Force Surgeon General states that this policy is under evaluation.
Military Respondents’ Perceptions of the Current System of Leader Development

Context, Organizational Environment, and Organizational Leader Expectations. Several respondents recognized the complexity of the military environment and its effects on leader expectations. Particularly among Army and Navy respondents, leaders noted that the military and their respective services had become quite complex on a number of levels: for example, challenges of managing a workforce that now includes military, civilian, and contract workers; dealing with the stresses and demands of war and the disruptions caused by deployments; and new productivity demands and attention to the “bottom line.” All shape what is expected of leaders and how they are selected and evaluated.

Respondents in all three services identified differences in opportunities for leadership and growth across the corps. Several leaders in the Army and Navy believed that, when compared to Medical Service Corps (MSC) officers (who are trained in medical administration and other nonclinical skills), MC officers (who are doctors) are at a disadvantage in acquiring leadership skills. Some respondents believed that, given the length of time required for clinical training and the demand to keep officers in clinical positions, it often takes longer and is more difficult for MC providers to gain the requisite skills, although they have greater opportunities to move into leadership positions.

Some Navy respondents criticized the Navy’s "lock-step" requirement that an individual must be a director, then an executive officer, then a commanding officer, pointing out that this system overlooks other opportunities for individuals to develop or demonstrate leadership skills. Some respondents noted that rank does not equate to leadership and that physicians, in particular, were often placed in leadership positions because of rank without the requisite experience and training.

Although some respondents in all three services were aware of a set of formal leadership competencies endorsed by the military, most did not remember the name (JMESP), and few found them to be particularly meaningful or consequential.

Overall Approach to Leader Development. There was variation across and within the services in terms of respondents’ perceptions of how purposeful and systematic the services are in developing leaders. Most Air Force respondents considered the Air Force to have a reasonable and well-defined system in place for leader development and mentioned both the flight paths and the development teams as the formal process for managing careers. Perceptions were more mixed in the other two services, with some respondents characterizing the approach as lacking purposeful planning and design; they used descriptions such as “happenstance,” “serendipity,” and “being in the right place at the right time.”

How to Select. All services use formal and informal methods to select high-potentials, but perceptions about the efficacy of these approaches varied. Most respondents in all three services viewed formal evaluation reports as one of the primary methods for identifying individuals with leadership potential, with below-the-zone promotions and “getting ranked” as important indicators of high leadership potential. Nevertheless, there was widespread concern about the limitations of these reports, including inflated ratings, subjectivity, the use of “code words” as discriminators, a lack of writing skills on the part of the raters, and raters being too far removed in rank from those being evaluated. Many respondents also mentioned the role that boards play in identifying and selecting individuals for leadership positions and leader development, but some expressed concern about the “soundness” and objectivity of this process. A few respondents mentioned interviews as another formal and effective way to select leaders, but this approach did not seem to be widely used. Many respondents across the services noted that an “informal system” with information gleaned from colleagues and word of mouth greatly affected the identification of leaders and potential leaders, and that these were often more important than formal methods in selecting leaders at the highest levels.
While a few were satisfied with the timing of selection for leadership opportunities and training, several leaders in the Army and Navy argued that identification needed to occur earlier than it currently does. For example, many Navy leaders believed that formal development opportunities often came too late in one’s career to be useful and that the Navy needs to be more proactive in providing opportunities to individuals before they are in leadership positions, rather than offering them “after the fact, when you take over one of these organizations.” As discussed earlier, in all three services, respondents mentioned that physicians do not receive leader development opportunities early enough in their careers and often lack leadership and management skills and experience. Some respondents, particularly those in the Navy, mentioned the need to accord diversity more consideration in the selection process.

**How to Develop.** In our interviews, approaches to developing high-potential candidates as described by respondents fell into three broad categories: job assignments, education and training, and mentoring.

**Job Assignments.** Many of our respondents viewed on-the-job experience as the most valuable and effective means of developing leaders, but not all were satisfied with this emphasis. Others felt that this approach was particularly challenging for physicians. Most agreed that diversity of job experience and wide exposure to different types of jobs and responsibilities are important for leader development.

Enterprise knowledge and experience are increasingly seen as important for military leaders as operations become more joint and integrated (i.e., interservice, interagency, intergovernmental, and multinational). Across the services, many respondents considered joint experiences to be beneficial to leader development; however, they did not tend to endorse mandatory requirements for joint experience and assignments, noting that the lack of joint billets available to health care officers made mandating them difficult.

**Education and Training.** Almost all our respondents described receiving formal education and training for certain positions and commands. However, views were mixed about the value of the current education and training. Some believed that certain courses were valuable; others noted that coursework must be teamed with experiential learning. Leaders across the services cited a need for better writing skills and more instruction on the business aspects of medicine, particularly for clinicians.

All respondents discussed senior-level professional military education opportunities, including their service’s war college and the National War College. Almost all agreed that in-residence attendance at war college was far more valuable than completing the coursework through correspondence, which was viewed as a way of merely “checking a box.” However, several leaders noted downsides to resident participation, including the high opportunity costs for both the individual and the service. Navy respondents were more critical of that service’s war college in terms of the time needed to complete the coursework, the limited slots available, the potential for doctors to lose their bonuses, and the lack of planning in subsequent career assignments that prevented some physicians from applying what they learned.

Respondents were hesitant to endorse mandatory joint education, given the limited number of seats at schools offering joint professional military education.

Respondents across the services identified the value of educational and training opportunities provided by individuals and organizations outside of the military, many of which are sponsored by the services. These included graduate school, strategic leadership courses, and the Interagency Institute for Federal Health Care Executives. In other cases, leaders across the services described seeking out their own education outside of the military (such as courses offered by the American College of Healthcare Executives).
Mentoring. There was widespread agreement across the services that mentoring was important for leader development, and almost all respondents described personal experiences with mentoring or being mentored. Mentor relationships were initiated from either the top or the bottom. While some leaders noted that their service had a formal mentoring system, almost all described informal mentoring and tended to believe that it was more effective than formal mentoring programs.

How to Incentivize. Several respondents described how leaders were motivated to participate in certain “development opportunities” because they greatly affect promotion and command opportunities (for example, the advanced professional military education courses). Others related their own decision to seek education and assignments to promotion incentives. Several respondents mentioned that retention was an important constraining factor in the ability to identify, grow, and mentor high-potentials and that the military needed to look at ways to retain good people. In particular, some respondents mentioned that two-year assignments were short and disruptive to families and acted as a disincentive to retention.

Lessons Learned from Civilian Health Care Organizations and the VHA Regarding Leader Development

Our interviews with leaders in civilian health care organizations and the VHA mirrored research findings about best practices in leader development and also provided some additional insights. Next, we highlight some practices that leaders in these organizations believed were important or effective.

Context, Organizational Environment, and Organizational Leader Expectations. Two major themes emerged in this area. One was the importance of supporting leadership development at the highest level and the belief that “investing in leadership is as or more important than other investments and priorities.” This includes investing in infrastructure resources and making a commitment to managing the process of identifying potential leaders. A second was the need to develop a “living” competency model that is linked to organizational goals and strategic improvement plans—a model that drives the organization’s approach to leader development. In these organizations, the leader’s competencies were infused throughout the leader development process, guiding recruitment and selection, assessment of needs for professional and management development, development of programs, and evaluation.

Approach to Leader Development. Most organizations adopted purposeful approaches that were clearly aligned with the strategic and business goals of the organization.

How to Select. In addition to succession planning, respondents reported that their organizations were thoughtful and deliberate in their recruiting, interviewing, and hiring processes for executives. Several respondents reported using behavioral interview questions to identify individuals who possessed the competencies and behaviors they sought, while others mentioned specific screening techniques to assess individuals’ values. The U.S. Department of Veterans Affairs uses performance-based interviewing extensively as a selection and assessment tool. Some civilian and VHA respondents mentioned that it was important to develop not only people with high potential but also “solid performers” because they are the “bread and butter” of the organization and also need opportunities for growth.

Several respondents considered diversity issues when deciding whom to target. One organization felt strongly that it needed to be proactive to better ensure that the hospital staff reflected the community. Respondents from civilian organizations described diversity strategies aimed at ensuring that more women and minorities were promoted to senior roles, which involved working to develop these candidates at less senior levels.

How to Develop. Respondents mentioned that their leader development programs went beyond the traditional classroom format to include some or all of the following: stretch assignments or details to leader positions, short-term projects overseen by preceptors, 360-degree or other rigorous types of assessment and feedback, mentoring or coaching, per-
sonal development plans, and structured reflection. Promising specific strategies included the following:

- job assignments
- coaching or mentoring
- cross-functional and team development
- 360-degree feedback.

Respondents also stressed the need to evaluate these strategies on a regular basis and to revise or adapt them as needed to improve their effectiveness.

**How to Incentivize.** Respondents from both civilian organizations in our sample and the VHA reported involving top executives in some form of annual performance-based evaluation. These processes tend to emphasize evaluation based on measurable metrics that are tied to broader organizational goals as well as to individual ones, and they generally link to incentive or compensation plans based on weighted formulas. Some organizations seem to focus exclusively on outcomes and measurable objectives. While most systems evaluate what leaders accomplish over the year, some also assess how they have accomplished their goals. The “how” tends to be guided by leadership competencies and was described by some as the “non-measurables,” such as how an individual develops others, handles HR issues, and demonstrates organizational stewardship, among other things. A handful of respondents noted the importance of nonpecuniary rewards and recognition for leaders and emerging leaders. These approaches could include providing a special title or project to individuals with demonstrated talent or accomplishments.

**Recommendations**

Overall, the majority of our military respondents believed, with some caveats, that the services do a good job of preparing their military health care leaders for executive positions in the MHS by using a multipronged approach that includes job assignments, education and training, informal mentoring, and annual reviews. Their comments, along with those of our civilian and VHA respondents, suggest possible avenues for change and improvement. To distill lessons learned about effective ways to develop leaders for executive positions, we returned to the MHS’s stated goal—to prepare health care leaders to succeed in joint, performance-based environments—and its desire to adopt a new paradigm for changing the way “we think and act,” in particular to move to jointly staffed facilities, performance-based management, and total force and team development. We then looked for recommendations that would help transform leader development to meet the MHS’s strategic goals.

**Organizational Leader Expectations**

- Reexamine the JMESP competency model to ensure that it meets the MHS’s strategic goals, and infuse the competencies throughout the leader development process.
- Emphasize the importance of soft skills along with the hard skills in selection and evaluation.

**How to Select**

- Consider using performance-based interviews to recruit and evaluate officers for executive-level positions.
- Improve diversity among those selected for leader development opportunities.
- Implement a policy of “best in show” rather than “best in breed.” In doing so, examine the health corps structure to ensure that all corps have equitable access to leadership opportunities.

**How to Develop**

- Reexamine the overall approach to leader development to determine whether it is feasible to provide shorter-term projects or stretch assignments to high-potentials.
• Provide physicians with leader development opportunities along with business and management skills earlier in their careers.
• Encourage the use of 360-degree feedback, and make it an integrated part of leader development.
• Examine ways of providing and validating shorter-term and more tailored joint training and education opportunities for health professions officers.
• Recognize the importance of mentoring in evaluations, and consider providing formal training in mentoring and coaching.
• Evaluate leader development programs for currency and relevancy.

How to Incentivize
• Consider a separate evaluation process or form for health professions officers that integrates the competencies that the military considers important. At the same time, consider ways to reduce subjectivity and inflation in evaluations.
• Examine ways of implementing three-year assignments for health professions officers.

We recognize that many of these approaches will require structural changes and may be difficult to implement. In addition, some may require difficult trade-offs. For example, selecting physicians for early leader development opportunities requires selecting fewer of them and necessarily narrowing the pipeline. This may result in overlooking some officers who have the potential to be effective leaders but who may not have the opportunity to distinguish themselves early in their careers. Going to three-year assignments has the same potential downside. Emphasizing joint education and training may mean reducing emphasis on other necessary management or leadership skills and training. Nonetheless, the recommendations here provide a useful starting point for discussion of how best to align leader development of health professions officers with the MHS’s vision for transformation.

Reference

For more information, see RAND MG-967-OSD, available at http://www.rand.org/pubs/monographs/MG967.html
The War Within
Preventing Suicide in the U.S. Military

by Rajeev Ramchand, Joie Acosta, Rachel M. Burns, Lisa H. Jaycox, Christopher G. Pernin

Abstract

Since late 2001, U.S. military forces have been engaged in conflicts around the globe, most notably in Iraq and Afghanistan. These conflicts have exacted a substantial toll on soldiers, marines, sailors, and airmen, and this toll goes beyond the well-publicized casualty figures. It extends to the stress that repetitive deployments can have on the individual servicemember and his or her family. This stress can manifest itself in different ways—increased divorce rates, spouse and child abuse, mental distress, substance abuse—but one of the most troubling manifestations is suicide, which is increasing across the U.S. Department of Defense (DoD). The increase in suicides among members of the military has raised concern among policymakers, military leaders, and the population at large. While DoD and the military services have had a number of efforts under way to deal with the increase in suicides among their members, the Assistant Secretary of Defense for Health Affairs asked RAND to review the current evidence detailing suicide epidemiology in the military, identify “state-of-the-art” suicide-prevention programs, describe and catalog suicide-prevention activities in DoD and across each service, and recommend ways to ensure that the activities in DoD and across each service reflect state-of-the-art prevention science.

Full Text

Since late 2001, U.S. military forces have been engaged in conflicts around the globe, most notably in Iraq and Afghanistan. These conflicts have exacted a substantial toll on soldiers, marines, sailors, and airmen, and this toll goes beyond the well-publicized casualty figures. It extends to the stress that repetitive deployments can have on the individual servicemember and his or her family. This stress can manifest itself in different ways—increased divorce rates, spouse and child abuse, mental distress, substance abuse—but one of the most troubling manifestations is suicides, which are increasing across the U.S. Department of Defense (DoD). The increase in suicides among members of the military has raised concern among policymakers, military leaders, and the population at large. While DoD and the military services have had a number of efforts under way to deal with the increase in suicides among their members, they have also asked what more might be done and posed this question to the RAND National Defense Research Institute (NDRI). DoD asked NDRI to do the following:

- Review the current evidence detailing suicide epidemiology in the military.
- Identify “best-practice” suicide-prevention programs.
- Describe and catalog suicide-prevention activities in DoD and across each service.
- Recommend ways to ensure that the activities in DoD and across each service reflect best practices.

The RAND research team approached this task by reviewing all relevant policy and materials, as well as through key informant interviews with persons knowledgeable about suicide-prevention activities within DoD and with experts in the field of suicidology.

The Epidemiology of Suicide in the Military

The RAND research team took an epidemiological approach to answering questions of keen interest to DoD policymakers.
What Is the Suicide Rate in Military Services?
Suicide rates are typically reported in number of cases per 100,000 people. Figure S.1 shows the suicide rate among active-duty personnel for each military service and for DoD overall and reflects the published rate among active-duty military through 2008. It shows that, in 2008, the U.S. Marine Corps (USMC) and the U.S. Army have the highest rates (19.5 and 18.5, respectively), and the Air Force and the Navy have the lowest rates (12.1 and 11.6, respectively).

The figure also indicates that the suicide rate across DoD has been climbing, rising from 10.3 in 2001 to 15.8 in 2008, which represents about a 50-percent increase. The increase in the DoD suicide rate is largely attributable to a doubling of the rate in the Army. There is evidence that the suicide rate in DoD in calendar year (CY) 2007 was higher than those in CYs 2001 and 2002. There is also evidence that the rate in CY 2008 was higher than the annual rate between CYs 2001 and 2005 and higher than the average rate for CYs 2001 through 2008. Across services, there are significant differences in only the Army’s suicide rate over time. Specifically, the Army suicide rates for CYs 2006 and 2007 were higher than in 2001 and 2004, and the rate in CY 2008 was higher than in it was between CY 2001 and CY 2005 and higher than the average rate for CYs 2001 through 2008.

How Does the Military Suicide Rate Compare with That of the U.S. Population?
An important question is how the rate in the military compares with that of the general population. The estimated annual suicide rate in the general population for 2001–2006 hovers at around 10 per 100,000 (CDC, 2010), notably lower than that in DoD. But these populations are not necessarily comparable, because the military and the national population differ so much in terms of age, sex, and racial makeup and, in part, because the procedures for reporting suicide data also vary, both between states and regions and between the nation and DoD. To derive a comparable population, RAND researchers calculated an adjusted suicide rate for a synthetic national population having the same demographic profile as DoD personnel and as each service. Figure S.2 shows the results of comparing DoD with the com-

Figure S.1

![Figure S.1](image_url)

SOURCE: Mortality Surveillance Division, Armed Forces Medical Examiner.
parable segment of the U.S. population for the years 2001–2006. These results show that the suicide rate in the synthetic civilian population is both fairly constant and substantially higher than that in DoD. Of concern, however, is that the gap between DoD and the general population is closing. The most-pronounced increases in the DoD suicide rate occurred in 2007 and 2008, so, assuming that the national rate remains relatively stable in these years, the gap between the rate in DoD and the general population may be even narrower.

**Who Dies by Suicide in the Military?**

One of the reasons that the synthetic population rates presented in Figure S.2 are higher than in the general population is because they represent the demographic profile of service-members in DoD, who are disproportionately male. In the United States, males are more likely to die by suicide than females—thus, the expected suicide rate based on this demographic characteristic alone is higher than for the country as a whole.

**Who Is at Risk?**

A review of the scientific literature revealed that those who are at a higher risk of dying by suicide fall into the following categories.

**Prior Suicide Attempts.** Although the majority of suicide deaths occur on individuals’ first attempts and the majority of those who make a nonfatal suicide attempt do not go on to die by suicide, a prior suicide attempt is the strongest predictor of subsequent death by suicide (Isometsä and Lonnqvist, 1998; Harris and Barraclough, 1997).

**Mental Disorders.** Certain mental disorders that carry an increased risk of suicide, such as schizophrenia, are of minimal concern to the military because many learning, psychiatric, and behavioral disorders are cause for rejection at enlistment and during training. However, the continuing deployments of U.S. military personnel to Iraq and Afghanistan have highlighted the emergence of specific mental health concerns that are relevant to this population: depression and anxiety disorders (including posttraumatic stress disorder, or PTSD). The

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1 The most recent year for which data are available about suicides in the general U.S. population is 2006 (CDC, 2010).
Institute of Medicine (IOM) estimates that approximately 4 percent of those with depression will die by suicide (Goldsmith et al., 2002), and, though the same figure is not yet known for those with PTSD, community-based surveys indicate that persons with PTSD are more likely than those without the disorder to report past suicide attempts and ideation (Kessler, Borges, and Walters, 1999; Sareen et al., 2005; Farberow, Kang, and Bullman, 1990).

Substance-Use Disorders. People with substance-use disorders and heavy users of alcohol and other drugs face an increased risk for suicide, depending on the presence of a disorder and the type of drug that they use. While drug use is not prevalent in the military largely due to routine screening, approximately 20 percent of servicemembers report heavy alcohol use (drinking five or more drinks per typical drinking occasion at least once per week) (Bray and Hourani, 2007).

Head Trauma/Traumatic Brain Injury (TBI). Evidence also indicates that persons with concussions, cranial fractures, or cerebral contusions or traumatic intracranial hemorrhages had higher rates of suicide mortality than the general population (Teasdale and Engberg, 2001; Simpson and Tate, 2002, 2005). TBI is of particular concern among deployed military personnel who may sustain blast or other concussive injuries as a result of an explosion or blast of an improvised explosive device (IED).

Those Suffering from Hopelessness, Aggression and Impulsivity, and Problem-Solving Deficits. Although mental and substance-use disorders are common among those who die by suicide, the majority of those with such disorders do not die this way (Harris and Barraclough, 1997; Wilcox, Conner, and Caine, 2004; Goldsmith et al., 2002). Researchers have conducted studies to see how persons with the same mental disorders differ with respect to a history of suicide attempts and death by suicide. Those with high levels of hopelessness are at increased risk, and there is some evidence that higher levels of aggression and impulsivity, as well as those with problem-solving deficits, are also at increased risk for suicide (McMillan et al., 2007; Mann et al., 1999; Rudd, Rajab, and Dahm, 1994).

Life Events, Precipitating Events, and Triggers. There is some concern about specific life events (e.g., death of family member, relationship problems) among servicemembers who die by suicide. While there is some evidence suggesting that particular life events differentially increase the risk of suicide (Luoma and Pearson, 2002), such studies have not been conducted among military personnel. Most of the scientific literature suggests that it is the interaction with underlying vulnerabilities, such as behavioral health problems, that influence a suicidal response to these relatively common events (Yen et al., 2005; Joiner and Rudd, 2000).

Firearm Access. Consistent evidence indicates that availability of firearms correlates positively with suicide (Matthew Miller, Lippmann, et al., 2007; Matthew Miller, Azrael, et al., 2006). Military personnel have access to firearms, particularly when deployed, and are more likely to own a personal gun than are members of the general population (Hepburn et al., 2007). Thus, military personnel who are considering suicide are more likely to have access to a firearm, one of the most lethal ways people can kill themselves.

Suicides of Others and Reporting of Suicides. For youth and young adults, there is evidence of contagion—that a suicide may lead to subsequent suicides (Insel and Gould, 2008). There is evidence of suicide clusters primarily among teens (Gould, 1990; Gould, Wallenstein, and Kleinman, 1990; Gould, Wallenstein, Kleinman, et al., 1990), though such clusters generally account for less than 5 percent of youth suicides (Insel and Gould, 2008). Media reporting of suicides, particularly coverage that lasts for a long time, is featured prominently, and is covered extensively in newspapers, is also associated with increases in suicide (Gould, 2001), though adhering to media guidelines on such reporting can mitigate any possible contagion (Pirkis et al., 2006).
Best Practices

RAND researchers reviewed a wide range of prevention programs, assessing them for their application to the military. These programs included universal programs that target entire populations and selected or indicated programs that focus on specific groups at high risk. They also considered self-care (i.e., maintaining one's personal health), making the environment safer, and postvention, which refers to the way an organization or media outlet treats a death by suicide. Taken together, these programs form a continuum of prevention activities ranging from programs delivered on a broad scale at a relatively small cost per person to treatment programs delivered to few at high expense.

The challenge in identifying best practices for suicide prevention is the lack of data on the effectiveness of programs. A best practice for suicide prevention would be one supported by empirical evidence showing that it causally reduced suicides. Currently, only a handful of programs would meet this definition. The bulk of the strong evidence about effectiveness concentrates at the selected prevention end of the spectrum, focusing on interventions or treatments for those who have displayed past suicidal behavior or those deemed to be at increased risk for suicide.

Universal programs with specific suicide-prevention activities generally fall into two categories: those that raise awareness and teach skills and those that provide screening and referral for mental health problems and suicidal behavior. Selected programs also fall into two categories: those that target groups at high risk by virtue of a known risk factor (e.g., mental illness) and those that work directly with suicide attempters who come to the attention of health providers because of their suicidal behavior. Environmental safety programs attempt to identify the means by which people kill themselves in a particular population and then to make these means less available. Examples of such initiatives include policies that restrict access to firearms to prevent self-inflicted gunshot wounds, use of blister packs (which require an individual to extract each pill from a sealed plastic pocket) for lethal medications to prevent intentional overdoses, bridge safeguards to prevent fatal falls, and constructing shower-curtain rods so as to prevent fatal hangings. Postvention efforts primarily have to do with establishing rules and responsibilities for community organizations following a suicide. Postvention also includes training the media on guidelines for proper reporting of suicides to reduce the possibility of imitative suicides. Such training includes not glorifying the death or describing the means by which suicide victims ended their lives.

Our assessment of these various programs indicates that promising practices exist, but much remains unknown about what constitutes a best practice. Our assessment of the literature and conversations with experts in the field indicate that a comprehensive suicide-prevention program should include the following six practices:

1. **Raise awareness and promote self-care.** One clear finding that emerges from the literature is that a focus on skill building may be important at all stages of prevention. Reducing known risk factors, such as substance abuse and mental health problems, is often included as one aspect of integrated approaches.
2. **Identify those at high risk.** Selected or indicated prevention is a fundamental component of a public health approach to disease prevention and is predicated on identifying those at higher risk. Thus, a comprehensive suicide-prevention program should have means by which this may occur, such as screening for mental health problems, one of the strongest risk factors for suicide, in primary care or through the use of gatekeepers.
3. **Facilitate access to quality care.** Access to quality behavioral health care is an integral component of many suicide-prevention programs. Past research highlights that a number of barriers obstruct such access, including some barriers that are specific to the military. Although reducing barriers to mental health care has not been specifically correlated with reducing suicides except as part of broad, integrated programs, facilitating access to effective care will help ensure that those at increased risk will receive quality care and thus reduce suicides.
4. **Provide quality care.** The types of interventions with the strongest empirical support for effectively preventing suicide involve quality mental health treatment and specific interventions focused on suicidality. The need to ensure quality of behavioral health services is a critical and often overlooked component of suicide prevention.

5. **Restrict access to lethal means.** There is evidence that restricting access to lethal means is an effective way to prevent suicide. Universal means restriction might be difficult in the U.S. military, with weapons readily available to deployed soldiers. However, selected or indicated programs that limit gun availability to persons deemed to be at high risk of suicide should be considered.

6. **Respond appropriately.** Given evidence of possible imitative suicides, suicide-prevention programs must have in place a strategy for responding to a suicide. Such a strategy should focus on how details of the suicide are communicated in the media, as well as how the information is passed on to groups to which the deceased individual belonged (e.g., classmates, colleagues, military unit).

**Suicide Prevention in the U.S. Department of Defense and Across the Services**

Each of the services is engaged in a variety of suicide-prevention activities. For each service, we amassed information on the underlying philosophy (stated or not) behind that service's suicide-prevention program, and a description of programs and initiatives along with information about how each service supports suicide-prevention activities (i.e., official documentation bearing on suicide, organizations responsible for suicide prevention, how suicide-prevention programs and initiatives are funded).

**Suicide Prevention in the U.S. Department of Defense**

There are five cross-service suicide-prevention initiatives sponsored by DoD. First, the DoD Suicide Prevention and Risk Reduction Committee is a committee of key stakeholders, including each service's suicide-prevention program manager (SPPM), that meets monthly to provide input on policy, develop joint products, and share information. Second, in 2008, the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) began funding the Real Warriors Campaign, a public education initiative to address the stigma of seeking psychological care and treatment. Third, in 2009, DoD established a congressionally directed DoD Task Force on the Prevention of Suicide by Members of the Armed Forces, which is expected to release its findings in the summer or fall of 2010. Fourth, in 2008, all services began conducting surveillance on suicide events (suicides and attempts or ideation that results in hospitalization or evacuation) using the same surveillance tool: the Department of Defense Suicide Event Report (DoDSER). Finally, since 2002, DoD has sponsored an annual suicide-prevention conference; in 2009 and 2010, the conference was jointly sponsored by DoD and the U.S. Department of Veterans Affairs (VA).

**Suicide Prevention in the Army**

The Army’s current approach to suicide prevention revolves around programs that encourage “soldiers to take care of soldiers” and those that offer a holistic approach to promote resiliency. This information is dispensed primarily through public awareness campaigns and training and education offered to both leaders and soldiers. The message is exemplified by the Army’s Ask, Care, Escort (ACE) program that serves as the cornerstone of most current suicide-prevention efforts. Resiliency programs are offered to persons before deploying and upon returning from deployment. New approaches to facilitate access to care include public-awareness campaigns designed to eliminate stigma associated with seeking behavioral health-care treatment and locating behavioral health-care professionals in nontraditional settings, such as primary care and in theater.

In the past, the Deputy Chief of Staff for Army Personnel (G-1) provided the funding required for the Army Suicide Prevention Program (ASPP) to execute its suicide-prevention mission. However, since the establishment of the Suicide Prevention Task Force in March 2009 and the added emphasis placed on suicide prevention, there is a dedicated line of funding in the
Army’s fiscal year (FY) 2011 budget for suicide prevention and some elements that support it. Nonetheless, suicide-prevention activities are developed, managed, and run across multiple organizations within the Army, including the suicide-prevention program office within G-1 and the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM), Deputy Chief of Staff for Army Operations (G-3), and from such senior leaders as the Vice Chief of Staff of the Army.

Suicide Prevention in the Navy

The Navy’s approach to suicide prevention is guided by a model that sees stress on a continuum and in which suicide represents an extreme endpoint on the continuum. The model emphasizes early intervention to prevent and manage stress, particularly in the face of challenging life events (e.g., relationship or financial difficulties). This information is conveyed via media campaigns and educational programs and trainings, the cornerstone of which is Operational Stress Control. The Navy also places behavioral health-care providers in nontraditional settings, such as providing community-based outreach coordinators for reservists or placing psychologists on aircraft carriers.

The majority of suicide-prevention initiatives in the Navy are funded by the responsible agencies and organizations, though there will be some dedicated funding for suicide prevention in FY 2010. The Navy SPPM serves in this capacity on a part-time basis.

Suicide Prevention in the Air Force

The Air Force approach to preventing suicide is based on initiating cultural changes in attitudes and actions pertaining to suicide and implementing these changes through the highest-ranking Air Force officials. The program is comprised of 11 tenets outlined in an Air Force pamphlet (AFPAM 44-160). These tenets require training and education for all airmen, but also include policies and procedures for monitoring individuals for suicidal behavior following an investigative interview and, in these cases, protect the confidentiality of those receiving treatment from a psychotherapist. The Air Force program also established entities at the installation, major command (MAJCOM), and Air Force levels called the Integrated Delivery System (IDS), which is a conglomeration of Air Force organizations engaged in suicide prevention and related activities that organize and coordinate prevention programs and are guided by the Community Action Information Boards (CAIBs). Guidance to Air Force behavioral health-care providers on assessing and managing suicidal risk is provided through a published guide created by the Air Force and a one-time training that was offered in 2007 with an accompanying plan for sustainment via chain-teaching. There is published evidence to suggest that the implementation of the Air Force Suicide Prevention Program (AFSPP) was associated with a 33-percent risk reduction in suicide (Knox et al., 2003). It has been reviewed by the National Registry of Evidence-Based Programs and Practices, which found that research methods were strong enough to support these claims (SAMHSA, 2010).

Agencies and organizations are responsible for using internal funds to support their responsibilities outlined for that organization, though there is also a full-time Air Force SPPM and a dedicated stream of funding for suicide prevention.

Suicide Prevention in the Marine Corps

The Marine Corps approach to suicide prevention relies primarily on programs in which members of the USMC community are trained to identify and refer marines at risk for suicide to available resources (e.g., a commander, chaplain, mental health professional). The core of the Marine Corps approach occurs via education and training that all marines receive annually both during their required martial-arts training and from their local commands. Special training is offered to all new marines (officers and enlisted) and their drill instructors, front-line leaders (noncommissioned officers [NCOs] and lieutenants), and civilian employees who have regular direct contact with a large proportion of the force. Public-awareness messages disseminated via videos, posters, and brochures aim to reduce the stigma of getting help.

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2 CHPPM is in the process of changing to the U.S. Army Public Health Command (see APHC, 2010).
Behavioral health providers and chaplains who serve marines were also offered a one-time voluntary training on assessing and managing suicidal risk. Finally, there is also a program to support marines before, after, and during deployment, and behavioral health professionals are embedded in infantry regiments to increase marines’ access to behavioral health services.

Agencies and organizations are responsible for using internal funds to support the responsibilities outlined for that organization, though there is also a full-time Marine Corps SPPM and four full-time staff dedicated to suicide prevention at USMC Headquarters.

Conclusions

We assessed how each of the services was performing across the six domains of a comprehensive suicide-prevention program. Their performance is outlined in Table S.1.

Raise Awareness and Promote Self-Care

The services use media campaigns, training and educational courses, and messages from key personnel to raise awareness and promote self-care. Most of the messages conveyed focus on raising awareness, which has limited evidence of creating behavior change. Across services, there are fewer messages disseminated with respect to promoting self-care; those that do exist are generally geared toward deploying personnel or those returning from deployments. Few programs teach strategies to help servicemembers build skills that would help them care for themselves, including the ability to self-refer when needed.

Identify Those at High Risk

The Army, Navy, and Marine Corps generally rely on “gatekeepers” to identify people at increased risk for suicide and actively refer those in distress to follow-up care. There is insufficient evidence to date indicating that these training programs are effective at reducing suicides. An alternative strategy for identifying those at high risk of suicide is to monitor the aftermath of high-risk events. The Air Force does this by monitoring those under investiga-

<p>| Table S.1 |</p>
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<th>Assessment of Suicide-Prevention Activities Across Services</th>
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<td>Goal</td>
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tion, and the Army, Navy, and Air Force all have programs that attempt to monitor service-
members after deployment to mitigate potentially negative consequences of deployment.
The Army and Air Force also have programs that promote mental health screening in primary
care. Only the Air Force and Marines have trained behavioral health-care professionals in sui-
cide risk assessment and management, which some experts we interviewed considered to be
a promising practice.

Programs aimed at identifying those at high risk should be based on research that discerns
those at high risk; the Army is actively pursuing research that could provide information
about Army-specific risk factors, and the Air Force has a consultation tool by which any Air
Force commander can request an investigation to assess his or her unit’s well-being.

Facilitate Access to Quality Care
Across the services, most of the initiatives in place to facilitate access to quality care fall
under the domain of eliminating stigma: Initiatives that raise awareness about suicide and
promote self-care can reduce stigma, as can locating behavioral health care in nontradi-
tional settings, including in primary care and in theater. There are fewer initiatives focused
on assuaging servicemembers’ career and privacy concerns, and there are few initiatives
under the purview of suicide prevention that seek to dispel myths about the ineffectiveness
of behavioral health care, both of which are well-established barriers to such care among
military personnel, though such information is conveyed in the Air Force’s and Marine Corps’
annual training. In addition, the recently launched Real Warriors campaign does begin to fill
this gap.

Provide Quality Care to Those in Need
Providing quality care is a fundamental component of suicide prevention. It was beyond
the scope of the current research project to evaluate the quality of care offered by behav-
ioral health-care providers, though only the Air Force and Marine Corps made us aware of
programs aimed at improving the skills of behavioral health-care providers with respect to
assessing and managing suicidal patients. However, in both services, these programs were
one-time offerings with no plan for additional training. But the Air Force teaches this material
informally in its internship and residency programs, as well as by providing a manual, training
videos, and assessment measures to each clinic.

Restrict Access to Lethal Means
Across the services, there are no known specific policies in place in which access to lethal
means is restricted for the purposes of reducing suicides, either universally or for those at
increased or imminent risk of suicide. The Air Force provides limited guidance to leaders on
means restriction when managing personnel in severe distress.

Respond Appropriately to Suicides and Suicide Attempts
Each service has a team or personnel on whom leaders can call to assist them after a sui-
cide specifically or traumatic event more generally. However, no policies or guidance provide
details on what should be done if and when a unit experiences the loss of one of its own to
suicide.

Recommendations
We make 14 recommendations pertinent to all services:

1. Track suicides and suicide attempts systematically and consistently. The recent initiatives
to use the DoDSER and establish a common nomenclature across all services will help
ensure that communication on suicide is consistent within DoD and foster information
sharing between the services. However, this will also require that the services and each
installation are using the same criteria for determining who requires a DoDSER.

2. Evaluate existing programs and ensure that new programs contain an evaluation com-
ponent when they are implemented. Evaluation provides a basis for decisionmaking and
helps ensure that resources are used effectively and to achieve anticipated outcomes. Current initiatives should be evaluated, and an evaluation plan should be a required component of any new initiative.

3. **Include training in skill building, particularly help-seeking behavior, in programs and initiatives that raise awareness and promote self-care.** Most universal prevention programs in the services focus on raising awareness about suicide, provide resources to which a servicemember can turn when he or she (or someone he or she knows) is feeling suicidal, and may include messages about the importance of peer gatekeepers. There is no evidence to indicate that any of these strategies is effective on its own. A limitation of these kinds of programs is that they do not teach the skills that servicemembers may need to refer themselves to behavioral health professionals or chaplains.

4. **Define the scope of what is relevant to preventing suicide, and form partnerships with the agencies and organizations responsible for initiatives in other areas.** Behavioral health problems (e.g., mental disorders, harmful substance-using behaviors) are risk factors for suicide, and prevention efforts across all of these domains have the potential to affect suicides in DoD. Thus, it is important that suicide-prevention programs within each service create partnerships with the organizations responsible for these other areas to ensure consistent messaging, create jointly sponsored projects, and avoid duplication.

5. **Evaluate gatekeeper training.** The services rely heavily on gatekeeper training, a prevention technique for which there is no evidence of effectiveness (though for which there have been few evaluations). Gatekeeper training is intuitively appealing because it can reach a wide number of people, and the use of nonmilitary gatekeepers might help reduce the stigma associated with recognizing and referring a peer in uniform. On the other hand, it may send the message that suicide is always another person’s problem, and some individuals will not be good gatekeepers and should not be relied on to serve in this capacity. Servicemembers may also not intervene out of fear that their actions could jeopardize a fellow servicemember’s military career. Evaluation of gatekeeper programs is needed to help clarify these issues.

6. **Develop prevention programs based on research and surveillance; selected and indicated programs should be based on clearly identified risk factors specific to military populations and to each service.** Most services produce reports that provide descriptive information about servicemembers who have killed themselves but cannot identify the factors that actually place individuals at risk of killing themselves, which would require a well-defined control group. Identifying risk factors is critical in the development of selected and indicated prevention programs, which are important components of a public health approach to suicide prevention.

7. **Ensure that continuity of services and care are maintained when servicemembers or their caregivers transition between installations in a process that respects servicemembers’ privacy and autonomy.** Because military personnel transition frequently between installations and commands, as well as between active and reserve status, it is important that they know of the resources available at each new command. For those receiving formal behavioral health care or counseling from a chaplain, efforts should be made to help ensure that the servicemember continues to receive the necessary care when he or she (or his or her caregiver) transfers. We recommend that patients themselves manage this process, with support from behavioral health-care providers and chaplains. For example, behavioral health-care providers and chaplains should provide clients moving to a new installation with the contact information for analogous resources at the new installation, encourage their clients to make appointments soon after arriving, and occasionally check in with them.

8. **Make servicemembers aware of the benefits of accessing behavioral health care and specific policies and repercussions for accessing such care, and conduct research to inform this communication.** Military personnel share a widespread belief that behavioral health care is ineffective and a concern that seeking behavioral health care could harm their career. There are no explicit policies with respect to repercussions across the services for accessing this care. Research is needed to discern the effect that seeking behavioral health care has on a servicemember’s military career.

9. **Make servicemembers aware of the different types of behavioral health caregivers available to them, including information on caregivers’ credentials, capabilities, and the con-
fidentiality afforded by each. The behavioral health-care workforce in the military is diverse and varies with respect to education, licensing, and certification or credentialing. Each service also relies heavily on chaplains who are embedded in military units and often serve as front-line responders for persons under psychological or emotional duress. Educating military personnel about the differences among referral specialists with respect to each professional's credentials and professional capabilities is important. Also, each provider is responsible for knowing what type of care he or she is capable of providing and to refer as appropriate. Confidentiality is noted to be a specific barrier to care among this population and is not uniform across providers: For example, chaplains offer total confidentiality, but command staff has access to information about servicemembers' access of professional mental health services (i.e., care offered in a clinical setting). Servicemembers should therefore also be made aware of the confidentiality afforded by different organizations and individuals.

10. Improve coordination and communication between caregivers and service providers. Those who offer behavioral health care should work as a team to ensure that the emotional well-being of those for whom they care is maintained. There were conflicting reports about the relationship between these professionals on military bases. For example, some interviewees reported open communication and collegiality between chaplains and behavioral health-care providers, while others reported a more acrimonious relationship. Improved communication and collaboration between professionals helps create a trustworthy hand-off to ensure that individuals do not fall through the cracks when going from one form of care to another.

11. Assess whether there is an adequate supply of behavioral health-care professionals and chaplains available to servicemembers. Effective suicide prevention in the military will rely on persons accessing quality behavioral health care and counseling. Messages promoting these resources assume a capacity of providers and chaplains who can deliver quality care to those who request it. There appears to be a need for research to address this concern: Chaplains, for example, reported that they thought they were understaffed, though they did not have empirical basis for this assumption. There is also a shortage of behavioral health-care providers in the United States generally, and DoD has faced challenges in recruiting and retaining adequately trained behavioral health-care providers.

12. Mandate training on evidence-based or state-of-the-art practices for behavioral health generally and in suicide risk assessment specifically for chaplains, health-care providers, and behavioral health-care professionals. Programs that promote behavioral health-care providers and chaplains often operate under the assumption that these individuals are sufficiently trained in assessing and managing suicidal patients. Unfortunately, this assumption may not be valid: Few providers are adequately trained in effective ways to assess risk and manage patients at varying levels of risk. Guides do exist that, while not evidence-based, offer helpful guidelines to providers. Both the Air Force and Marine Corps have independently conducted training, but these efforts were one-time occurrences with no future plans. There is also an implicit assumption that these professionals are trained to provide more general high-quality care and counseling. Unfortunately, research from the civilian sector indicates that the provision of quality care for behavioral health is not universal across mental health-care providers, and there is no reason to think that services in the military are any different. There is almost no evidence on the quality of counseling offered by chaplains. The quality of mental health care and counseling offered in DoD is unknown, and efforts to improve quality, such as training providers in evidence-based practice, are not integrated into the system of mental health care offered in DoD treatment facilities. Training all health-care providers on mental health awareness and quality behavioral health care is also an important component of provider training.

13. Develop creative strategies to restrict access to lethal means among military servicemembers or those indicated to be at risk of harming themselves. A comprehensive suicide-prevention strategy should have considered ways to restrict access to the means by which servicemembers could try to end their own lives. Due to the prevalence of firearms as a means by which military servicemembers die by suicide, initiatives to restrict access to firearms should be considered. Although restricting firearms among military personnel seems daunting or even impossible, there is some precedent for such policies in both the Veterans Health Administration (VHA) and DoD. In particular, selected
or indicated prevention strategies may include restricting access to firearms specifically among those identified to be at risk of harming themselves.

14. Provide formal guidance to commanders about how to respond to suicides and suicide attempts. Responding to a suicide appropriately not only can help acquaintances of the suicide victim grieve but also can prevent possible imitative suicides, as well as serve as a conduit to care for those at high risk. Across services, there is no direct policy regarding appropriate ways in which a leader should respond to a suicide within his or her unit. Fear of imitative suicides may also hinder many leaders from openly discussing suicides in their units. There also needs to be guidance for leaders to help care for and integrate servicemembers back into units who have made suicide attempts or expressed suicidal ideation, as there are anecdotal reports of servicemembers being ostracized or ridiculed after seeking behavioral health care or having been treated for suicidal behavior. Not only does this increase the risk of another suicide attempt, but it also creates a hostile and stigmatizing environment for others in the unit who may be under psychological or emotional duress.

Suicide is a tragic event, though the research suggests that it can be prevented. The recommendations represent the ways in which the best available evidence suggests that some of these untimely deaths could be avoided.

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For more information, see RAND MG-953-OSD, available at http://www.rand.org/pubs/monographs/MG953.html
Project Retrosight—Understanding the Returns from Cardiovascular and Stroke Research

The Policy Report

by Steven Wooding, Stephen Hanney, Alexandra Pollitt, Martin Buxton, Jonathan Grant

Abstract

This project explores the impacts arising from cardiovascular and stroke research funded 15-20 years ago and attempts to draw out aspects of the research, researcher or environment that are associated with high or low impact. The project is a case study-based review of 29 cardiovascular and stroke research grants, funded in Australia, Canada and UK between 1989 and 1993. The case studies focused on the individual grants but considered the development of the investigators and ideas involved in the research projects from initiation to the present day. Grants were selected through a stratified random selection approach that aimed to include both high- and low-impact grants. The key messages are as follows: 1) The cases reveal that a large and diverse range of impacts arose from the 29 grants studied. 2) There are variations between the impacts derived from basic biomedical and clinical research. 3) There is no correlation between knowledge production and wider impacts 4) The majority of economic impacts identified come from a minority of projects. 5) We identified factors that appear to be associated with high and low impact. This article presents the key observations of the study and an overview of the methods involved. It has been written for funders of biomedical and health research and health services, health researchers, and policy makers in those fields. It will also be of interest to those involved in research and impact evaluation.

Full Text

All funders have more opportunities for investment in research than they can support, many of which relate to areas of science of high potential interest and/or impact. How best to choose between these is a key issue for funders, the scientific community, governments and society. The "science of science" is a growing field that aims to understand what works in research funding (Marburger, 2005; Grant and Wooding, 2010). This requires a better understanding of research performance, and more importantly the drivers of improved performance. At a conceptual level we need to understand what factors lead to research impact. For example, what kinds of science, what kinds of scientists, and what settings are most conducive to ensuring the scientific success of research and its translation into societal benefits?

Project Retrosight

Project Retrosight was a multinational study that investigated the translation of, and payback from, basic biomedical and clinical cardiovascular and stroke research projects. The main project aims were to:

- examine the variety of payback produced by basic biomedical and clinical cardiovascular and stroke research;
- identify factors associated with high (and low) levels of payback, in particular factors relating to the characteristics of the research, how it was supported or the context in which it was carried out.

The name Project Retrosight is derived from two landmark studies in science policy. The first – Project Hindsight (1967) – was a study sponsored by US Department of Defense that examined the incremental advances of various technologies (Sherwin and Isenson, 1967). The second was Julius Comroe’s book, *Retrospectroscope: Insights into Medical Discovery*
Comroe examined new life-saving advances in medicine and how they had come about. At the same time, in a more or less direct response to Project Hindsight, he worked with Robert Dripps to trace the research antecedents of clinical advances in cardiovascular medicine. This study was described in an article in Science (Comroe and Dripps, 1977). The idea of Project Retrosight was to develop these ideas by tracing prospectively, with the benefit of hindsight, the payback and translation of funded research projects.

Project Retrosight builds on successful methodologies used to evaluate diabetes and arthritis research funding (Hanney et al., 2006; Wooding et al., 2005).

Our approach involved identifying the principal investigators (PIs) of all grants awarded in the early 1990s for basic biomedical and clinical cardiovascular and stroke research by specific funders in Australia, Canada, and the United Kingdom. These PIs were sent simple questionnaires that were used to estimate the impact of the work funded by the grant. A random sample of grants was then selected policy makers, changes in policy or practice, etc. The case studies were then coded qualitatively and analysed to identify factors that appeared to be associated with high and low impact in both academic and wider categories. The associations that emerged were then tested and refined in discussion with researchers, funders and policy makers, and developed into a series of policy implications for research funders. There are, of course, a number of limitations to the analysis. The number of case studies used in Project Retrosight can be viewed as both a limitation and a strength. Whilst the number of case studies is greater than in most other studies of a similar nature, the sample size may still not be large enough to rule out outcomes or differences that could have arisen by chance. Because of this, we have been...
deliberately cautious in interpreting our data and have tested the strength of any associations leading to policy observations. Other limitations include potential inconsistencies in case study reporting and possible confounders; for example, the definitions of basic biomedical and clinical research used, the scope of the case studies and the effects of negative findings. Equally there are significant strengths in the study method chosen, particularly in comparison to other sources of information on research funding policy. These strengths include the use of the Payback Framework to encourage consistency across cases and facilitate comparative analysis; quality assurance checks to ensure consistency across an international team; and consideration of both quantitative and qualitative case study material.

**Key Findings and Policy Implications**

The five key findings from the study are as follows.

1. The cases reveal that a large and diverse range of impacts arose from the 29 grants studied.
2. There are variations between the impacts derived from basic biomedical and clinical research.
3. There is no correlation between knowledge production and wider impacts.
4. The majority of economic impacts identified come from a minority of projects.
5. We identified factors that appear to be associated with high and low impact.
1. The cases reveal that a large and diverse range of impacts arose from the 29 grants studied. As illustrated in Table S.1, there is a considerable range of research paybacks associated with the grants studied, and many of these would not have been identified without the structured, case study approach used in this study. This resonates with the diversity of payback identified in an earlier study on arthritis research (Wooding et al., 2004).

2. There are variations between the impacts derived from basic biomedical and clinical research. In the cases studied, basic biomedical research has a greater academic impact and clinical research a greater wider impact over the timescales investigated. All the grants studied had academic impact, but the average rating was higher in basic biomedical research than in clinical research. For the combined wider impact categories all clinical studies had some impact, compared to only six out of 15 basic biomedical case studies. This finding should be treated with caution as it may be confounded by longer time lags for basic biomedical research.

3. There is no correlation between knowledge production and wider impacts. There is no correlation between the payback category, “knowledge production”, and the three wider categories, “informing policy and product development”, “health and health sector benefits” and “broader economic benefits”. From a policy perspective this would suggest that the level of knowledge production is not a predictor of wider impacts.

4. The majority of economic impacts identified come from a minority of projects. Only four of the 29 case studies reported substantial broader economic benefits and 19 grants had no impact in this payback category. It is important that these distributional effects are understood in any assessment of research impact. Although the majority of economic impacts come from a small proportion of projects, we previously found that the value of the impact achieved from a programme of research overall can significantly outweigh the costs of doing the research (HERG, 2008).

5. We can identify factors that appear to be associated with high and low impact. We have identified a number of factors in cardiovascular and stroke research that are associated with higher and lower academic and wider impacts. These are captured in Table S.2, each with an associated policy implication for research funders and policy makers to consider.

Just as science is the effort to discover and increase human understanding of how the world works and how we can influence it, science policy should be about understanding how the world of science works and how we can influence it to maximise benefits for society. Studies like Project Retrosight contribute to the growing field of the “science of science”, providing an evidence base to inform research funders in their decision making.

References


For more information, see RAND MG-1079-RS, available at http://www.rand.org/pubs/monographs/MG1079.html
Table S.1
Summary of the Impacts Arising from Case Study Grants

<table>
<thead>
<tr>
<th>Australia</th>
<th>Canada</th>
<th>UK</th>
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</thead>
<tbody>
<tr>
<td>All Australian projects produced peer-reviewed publications, e.g. a project on immunoelectron microscopy of amine and peptide synapses on sympathetic preganglionic neurons resulted in 18 articles that have received a total of 780 citations.</td>
<td>All Canadian projects produced peer-reviewed publications, e.g. a project on the determinants of increased growth of vascular smooth muscle in spontaneously hypertensive rats produced a series of journal articles. Sixteen articles produced 849 citations and included a paper in the highly prestigious Journal of Clinical Investigation.</td>
<td>All UK projects produced peer-reviewed publications, e.g. a project on the role of coagulation and fibrinolysis in the pathogenesis of recurrent stroke led to a series of articles, seven of which have been cited 393 times in total.</td>
</tr>
<tr>
<td>All Australian projects led to research capacity building and/or targeting, e.g. a project on high density lipoprotein (HDL) led to collaborations for the PI and advanced the career of the postdoc; it also resulted in new research techniques, further research funding for the group and better targeting of other groups through increased understanding of HDL.</td>
<td>All Canadian projects led to research capacity building and/or targeting, e.g. a project on the effects of simulated stroke on developing astrocytes led to two PhDs; techniques were taught.</td>
<td>All UK projects led to research capacity building and/or targeting, e.g. the project (above) led to two PhDs, an MD and development of a patient cohort and control group that formed the basis of a stream of work. It helped the PI establish his research group.</td>
</tr>
<tr>
<td>All Australian projects contributed to informing policy and/or product development, e.g. a project that created animal models for myocardial dysfunction contributed to the decision to create a transgenic facility at the research institute, and eventually a commercial facility.</td>
<td>Eleven of the 12 Canadian projects contributed to informing policy and/or product development, e.g. guidelines recommend a treatment pathway for antiphospholipid antibodies (APLA) based on the original warfarin-based project.</td>
<td>Four of the nine UK projects contributed to informing policy and/or product development, e.g. a project analysing the automated defibrillators in Scotland’s ambulances is widely cited in policies and made an important contribution to the increased survival rate following out-of-hospital cardiac arrest.</td>
</tr>
<tr>
<td>All Australian projects contributed to health gains, e.g. a project studying the follow-up to heart attacks contributed to a major international project on health promotion, which in turn contributed to a decline in coronary heart disease in the Hunter region.</td>
<td>Seven of the 12 Canadian projects contributed to health gains, e.g. the treatment path for APLA patients is much improved, leading to some health gain.</td>
<td>Four of the nine UK projects contributed to health gains, e.g. a project analysing the automated defibrillators in Scotland’s ambulances is widely cited in policies and made an important contribution to the increased survival rate following out-of-hospital cardiac arrest.</td>
</tr>
<tr>
<td>Five of the eight Australian projects contributed to economic benefits, e.g. the commercial transgenic facility developed as a result of the animal models for myocardial dysfunction is now a multimillion-dollar business that exports 80% of its services.</td>
<td>Two of the 12 Canadian projects contributed to economic benefits, e.g. a project used a radioimmunoassay the PI had created previously: later sold by a commercial company.</td>
<td>Three of the nine UK projects contributed to economic benefits, e.g. the increased life expectancy of patients with Marfan syndrome has mostly been among people of working age; therefore a number of people have been able to remain active in the workforce.</td>
</tr>
</tbody>
</table>
### Table S.2
Factors Associated with High- and Low-Impact Research

<table>
<thead>
<tr>
<th>Factor</th>
<th>Policy Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic biomedical research with a clear clinical motivation is associated with high academic and wider impacts.</td>
<td>When seeking to achieve high academic and wider impacts, encourage and support clinically motivated basic biomedical research.</td>
</tr>
<tr>
<td>Co-location of basic biomedical research in a clinical setting is associated with high wider impact.</td>
<td>When seeking to achieve high wider impacts from basic biomedical research, encourage and support the co-location of basic biomedical researchers with clinicians in a clinical setting (e.g. a teaching hospital or health organisation).</td>
</tr>
<tr>
<td>Strategic thinking by clinical researchers is associated with high wider impact.</td>
<td>When seeking to achieve high wider impacts from clinical research, focus clinical research funding on PIs or teams who think strategically about translation into clinical practice.</td>
</tr>
<tr>
<td>Research collaboration is associated with high academic and wider impact.</td>
<td>When seeking to achieve high academic and wider impacts, encourage and support research collaboration for both basic biomedical and clinical research.</td>
</tr>
<tr>
<td>International collaboration is associated with high academic impact.</td>
<td>When seeking to achieve high academic impact, encourage and support international collaboration for both basic biomedical and clinical research.</td>
</tr>
<tr>
<td>Engagement with practitioners and patients is associated with high academic and wider impacts.</td>
<td>When seeking to achieve high academic and wider impacts, encourage and support clinical researchers who have a record of engaging with practitioners and patients.</td>
</tr>
<tr>
<td>Basic biomedical research collaboration with industry is associated with high academic and wider impacts.</td>
<td>When seeking to achieve high academic and wider impacts from basic biomedical research, encourage and support collaboration with industry.</td>
</tr>
<tr>
<td>Negative or null findings are associated with low academic and wider impacts.</td>
<td>Research funders should acknowledge the importance and potential significance of negative or null findings when assessing the impact of research.</td>
</tr>
<tr>
<td>Initial rejection of a subsequently accepted basic biomedical research grant may be associated with low academic and wider impacts.</td>
<td>Further research is needed to confirm whether initial rejection of a research proposal is associated with low impact. Until this finding can be confirmed or refuted, funders may want to carefully consider such proposals.</td>
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</tbody>
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Feasibility and Design Options for a Potential Entity to Research the Comparative Effectiveness of Medical Treatments

by Peter S. Hussey, Emily Meredith Gillen, Elizabeth A. McGlynn

Abstract

In 2008, the Massachusetts state legislature mandated an examination of the feasibility of the state’s participation in establishing a comparative effectiveness center (CEC) and requested recommendations for the entity’s design. “Comparative effectiveness” research involves the direct comparative assessment of the efficacy and cost-effectiveness of health care interventions and strategies. The center’s findings would guide purchasing and payment decisions related to medical procedures, devices, drugs, and biologics by public- and private-sector organizations. The state has several options in terms of its approach to comparative effectiveness research. It could establish an interstate CEC that synthesizes existing findings for regional decisionmakers, it could establish an interstate CEC that supports new research, it could join an existing CEC, it could join the Drug Effectiveness Review Project and the Medicare Evidence-Based Decisions Project and also establish a regional center, or it could elect not to establish a CEC at all. An exploration of the options and the types of research that could be sponsored reveals that all of the options are potentially feasible, but the legislature’s decision with regard to design must consider the level of prioritization of comparative effectiveness research relative to other approaches to improving health care quality and reducing spending growth.
insurers to enable changes in reimbursement or benefit design. The changes could include tiered copayments, with higher copayments for less-effective treatments; reference pricing, under which the same price would be paid for equivalent treatments; and the provision of financial incentives to physicians for the use of effective treatments.

Another potential objective could be to provide information to physicians and patients to guide their medical decisions. This approach could potentially improve health care quality and reduce costs by improving medical decisionmaking, independent of insurers’ benefit and payment policies. The main limitation of dissemination activities is that they may not be sufficient to significantly change treatment decisions (and, in turn, health spending). There are many examples of new information on the effectiveness of treatments having little effect on practice patterns. New approaches to disseminating comparative effectiveness information may increase its impact on treatment decisions. One potential approach is “shared decision-making,” a process through which patients and their care providers are active participants in the process of communication and decisionmaking about their care.

Design Options for an Interstate Comparative Effectiveness Center

Given the extent of existing activities by federal and state governments and the private sector, a compelling question is, How much value would be gained from the establishment of a new CEC, and how would a new CEC’s role be coordinated with other comparative effectiveness activities? Here, we outline five options for the role of Massachusetts in an interstate CEC.

**Option 1:** An interstate CEC could be established to provide a framework for the use of existing comparative effectiveness reports by regional decisionmakers. Evidence reports are currently available from a number of organizations, including the federal government, states, and the private sector, but there is currently no framework to translate the evidence into actionable information for New England decisionmakers. Reports from various sources could be studied by an independent panel of local clinicians, who would make recommendations based on their public deliberations.

**Option 2:** An interstate CEC could be established to support new comparative effectiveness research. This option would create the framework for evidence translation as in option 1 and also commission new comparative effectiveness research. By funding new research, the regional center would ensure that comparative effectiveness information was available for priority topics. The required funding for Massachusetts would depend on how many other states participated and how funding responsibility was allocated among participating states.

**Option 3:** Massachusetts could join existing interstate CECs. The Drug Effectiveness Review Project (DERP) and the Medicaid Evidence-Based Decisions Project (MED) are existing collaborations between states across the country that produce comparative effectiveness evidence reviews. The cost of membership would be approximately $90,000 per year for DERP and $130,000 per year for MED. Participating states can provide input on priorities for evidence reviews and have access to reports, summaries, collaboration, and guidance.

**Option 4:** Massachusetts could join DERP and MED and also establish a regional CEC. Massachusetts could pursue both options 2 and 3 to produce a greater amount of new comparative effectiveness research. This option would take advantage of the existing infrastructure of DERP and MED while allocating additional resources to regional comparative effectiveness priorities through a new CEC.

**Option 5:** Status quo. Massachusetts could elect not to establish or join a CEC. Local stakeholders could continue to rely on existing decisionmaking processes and activities sponsored by other entities for comparative effectiveness information.
Other Design Considerations for a Comparative Effectiveness Center

How Will Comparative Effectiveness Information Be Produced?
There are several types of comparative effectiveness research that could be sponsored by a CEC, with very different cost implications. Systematic reviews provide a rigorous framework for evaluating evidence from existing studies. Systematic reviews are generally less expensive than options that produce new evidence. Most of the existing state and private programs undertake this approach. Clinical trials are the gold standard for producing rigorous evidence, but due to the level of funding required, sponsorship of new clinical trials is likely not a viable option for a regional CEC. New observational studies could be performed retrospectively using existing data sets, such as insurance claims. These studies can add to the evidence base at lower expense than prospective clinical trials but typically do not provide the same strength of evidence. A CEC could also facilitate the use of patient registries to produce new information on the comparative effectiveness of treatments. A policy of “coverage with evidence development” would require patients using approved treatments to participate in a registry to gather outcome information.

How Will Research Topics Be Selected?
If Massachusetts enters into an interstate compact to create a new regional CEC, a transparent process will be needed to prioritize treatments selected for review. A similar process would likely be used whether the CEC was providing a framework for translating existing reports (option 1) or commissioning new research (option 2 or 4). If Massachusetts joins DERP and/or MED (option 3), it would participate in existing prioritization activities. Commonly used prioritization criteria include cost, utilization, strength of existing evidence, decision complexity, and social/legal/ethical concerns.

Should the CEC Evaluate Clinical Effectiveness or Cost-Effectiveness?
Some existing activities compare clinical effectiveness only—not cost. This should decrease political opposition to a CEC. However, it is likely that decisionmakers, such as insurers using the clinical effectiveness reviews, would consider cost information separately. These comparisons, since they would not be conducted within the established CEC review process, would not necessarily be transparent to the public. However, others advocate that, given the growing inaffordability of health care, it is necessary to consider the cost implications of treatment alternatives. Consideration of cost-effectiveness increases the likelihood that comparative effectiveness research could lead to reduced health care spending (Congressional Budget Office, 2007).

Conclusion
This report outlines several design options that Massachusetts could follow in establishing an interstate CEC. The choice of design option will be determined by the specific objectives of the legislature and by the legislature’s prioritization of comparative effectiveness research over other options under consideration for improving quality and reducing spending growth in health care. With the political will, all of the options presented in this report should be technically feasible to implement. However, the implementation of a government-funded CEC would likely encounter significant political opposition.

Participants in a meeting of New England state representatives expressed strong interest in establishing a CEC. Among the design options presented in this report, meeting participants expressed the strongest interest in beginning with option 1, possibly as a first step. In this approach, Massachusetts would enter into an interstate compact with other New England states to create a framework for translating comparative effectiveness information into actionable recommendations for local decisionmakers. Meeting participants felt that recommendations coming from such an organized framework may be viewed as a “trusted source” by local physicians, patients, and other stakeholders. They also felt that collaboration among New England states made sense, given the region’s merged medical marketplaces. The centerpiece of the regional framework was envisioned by meeting participants as an independent
group of local clinicians. This panel would hold public meetings to review comparative effectiveness research reports produced by other organizations and make recommendations for purchasing or clinical decisionmaking.

The American Reinvestment and Recovery Act of 2009 (ARRA; Pub. L. 111-5) included funding for comparative effectiveness research that could potentially provide seed money for a regional effort. ARRA allocated $1.1 billion between the Agency for Healthcare Research and Quality (AHRQ), the National Institutes of Health, and the U.S. Department of Health and Human Services. In a notice of intent to publish grant and contract solicitations, released on August 7, 2009, AHRQ announced that it would provide $29.5 million to “support innovative translation and dissemination grants” for comparative effectiveness research, with solicitations published beginning in fall 2009 and funding commencing in spring 2010. A potential barrier is that the ARRA prohibits the Federal Coordinating Council on Comparative Effectiveness Research from taking action that could be construed “to mandate coverage, reimbursement, or other policies for any public or private payer.” At this time, it is unclear whether this stipulation will apply beyond the activities of the council itself and apply to all AHRQ grants and contracts for translation and dissemination activities.

In future steps, Massachusetts and other New England states could potentially build on such a framework by commissioning additional comparative effectiveness research to fill gaps in existing information. This could be accomplished by commissioning studies from established research centers (option 2) and/or joining existing state collaborations (DERP and MED) (option 3).

Massachusetts is at the forefront of the national health reform debate and is considering a variety of innovative approaches to improve the quality and affordability of care in the state. However, other state governments have been more active to date in sponsoring and using comparative effectiveness research. Massachusetts could potentially become a leader among states in this area. New England is world-renowned for its clinical research enterprise, and its academic medical centers could help in the establishment and operation of a CEC. In addition, New England states have a track record of collaboration on health policy issues that could be extended to comparative effectiveness research.

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For more information, see RAND TR-803-COMMASS, available at http://www.rand.org/pubs/technical_reports/TR803.html
Is Better Patient Safety Associated with Less Malpractice Activity?
Evidence from California

by Michael D. Greenberg, Amelia M. Haviland, J. Scott Ashwood, Regan Main

Abstract

In principle, efforts to improve patient safety, if they are successful, should lead to reductions in claims of medical malpractice. In practice, however, this has not yet been systematically demonstrated to be so. The authors examined the relationship between safety outcomes in hospitals and malpractice claiming against providers, using administrative data and measures for California from 2001 to 2005. They found that decreases in the county-level frequency of adverse safety outcomes were positively and significantly associated with decreases in the volume of malpractice claims, as captured by records from four of the largest malpractice insurers in the state. This result suggests that policy options that improve patient safety may offer a new avenue for reducing malpractice pressure on physicians, at the same time that they improve clinical outcomes.

Full Text

In principle, improvements in health care quality, and in safety outcomes and practices in U.S. facilities, ought to have a positive impact on the volume of malpractice claims against physicians and institutions. Malpractice claims are supposed to spin out of legitimate injuries to patients, so reducing the occurrence of those injuries ought to have a corresponding effect on the volume of litigation. In practice, however, this association has not previously been demonstrated.

Despite its putative status, the link between safety outcomes and malpractice claims in U.S. hospitals and facilities is nevertheless potentially very important to policy. Such a link suggests that providers could improve their own malpractice risk by making health care safer; that the interests of patients and providers are potentially well aligned when risk is addressed in this way; and that policymakers might enact a new set of tools for reducing malpractice risk, focused on facilitating new patient safety interventions, quality-improvement activities, root-cause analysis efforts, and the like.

The report endeavors to test the hypothesis that the occurrence of adverse safety events is predictive of subsequent malpractice activity, and, by extension, that improved safety performance is associated with reduced malpractice claiming. Focusing on California, we examine a combination of malpractice and safety outcomes data from 2001 through 2005. Our results show a strong correlation between safety outcomes and the volume of malpractice claiming within California’s counties.

Data and Approach

To assess the occurrence of clinical events with possible safety implications, we used the Healthcare Cost and Utilization Project (HCUP) state inpatient database for California, a comprehensive hospital encounter dataset, and we applied a version of the Patient Safety Indicators (PSIs) to that dataset. These indicators, which were developed by the Agency for Healthcare Research and Quality, capture 20 distinct classes of in-hospital events and complications with potential safety implications. These types of events range from obstetrical events to post-surgical events to nosocomial (in-hospital) infections. Statewide, we identified more than 365,000 PSI events during the study period, with a slight downward trend in frequency
for the entire state over the five years. When analyzed by county and from year to year, however, the results showed considerable county-level variation over time.

To assess malpractice claiming activity, we constructed a database of malpractice claims from four of the largest physician medical liability carriers in California (Norcal, The Doctors Company, SCPIE, and the Cooperative of American Physicians), which account for substantially more than 50 percent of the market of physicians who are not self-insured in the state. We collected approximately 27,000 claims based on alleged events that occurred from 2001 through 2005. As with our PSI measure, we found a modest, statewide decline in malpractice claiming over that time period, but with considerable year-to-year variation across counties within the general trend.

Our analysis involved building a series of regression models to examine the relationship between the annual frequency of adverse events and malpractice claims within California’s counties, while controlling for stable demographic differences across counties.

Findings

Our results showed a highly significant correlation between the frequency of adverse events and malpractice claims: On average, a county that shows a decrease of 10 adverse events in a given year would also see a decrease of 3.7 malpractice claims. Likewise, a county that shows an increase of 10 adverse events in a given year would also see, on average, an increase of 3.7 malpractice claims. According to the statistical analysis, nearly three-fourths of the within-county variation in annual malpractice claims could be accounted for by the changes in patient safety outcomes.

We also found that the correlation held true when we conducted similar analyses for medical specialties—specifically, surgeons, nonsurgical physicians, and obstetrician/gynecologists (OB-GYNs). Nearly two-thirds of the variation in malpractice claiming against surgeons and nonsurgeons can be explained by changes in safety. The association is weaker for OB-GYNs, but still significant.

Policy Implications

From a policy perspective, the idea of a direct link between safety outcomes and the malpractice claims that spin out of them has several major implications. First is the premise that new safety interventions potentially can reduce the volume of malpractice litigation—a desirable result to seek out, even beyond the immediate impact of medical injuries avoided. Stated another way, improvements in safety performance have the potential to benefit both patients and providers and to align their interests while reducing litigation. A second implication is that the relationship between safety and malpractice is complex and not fully described by the simple notion of deterring acts of negligence through civil liability. Third is the observation that malpractice laws that place providers at risk for engaging in peer review risk-management activities, root-cause analysis, and the like, could have the perverse effect of deterring from broader patient safety efforts. In turn, that could increase the frequency of adverse events and preventable injuries and, indirectly, increase the volume of malpractice litigation itself.

These kinds of relationships and concerns represent an entirely different set of levers for policymakers to consider in regard to malpractice, quite apart from more conventional statutory tort interventions, such as caps on damages in tort claims. The recently announced federal initiative for a new portfolio of Medical Liability Reform and Patient Safety Demonstration projects is aimed at investigating, and expanding on, exactly these sorts of policy levers (White House, 2009).
Reference


For more information, see RAND TR-824-ICJ, available at http://www.rand.org/pubs/technical_reports/TR824.html
Chronic Kidney Disease—A Quiet Revolution in Nephrology
Six Case Studies

by Richard Rettig, Roberto Vargas, Keith Norris, Allen R. Nissenson

Abstract

This article examines changes in nephrology as it evolves from a focus on end-stage renal disease (ESRD) to the treatment of earlier stages of chronic kidney disease (CKD). Once patients reach ESRD, treatments are limited to kidney transplantation and dialysis. However, the progression of earlier stages of CKD can be slowed, halted, or reversed when treated. Data from 15 clinics focusing on CKD are examined, with the focus on six case studies. Clinics are still establishing best-practice models, and reimbursement remains a challenge. Recommendations also include widespread education for primary care physicians on how to interpret levels of kidney function and on referral of patients with decreased kidney function to nephrologists before ESRD is reached.

Full Text

For nearly 40 years, public policy has defined kidney disease primarily by its terminus—end-stage renal disease (ESRD). Recently, however, the disease entity of concern has been redefined as chronic kidney disease (CKD), a progressive disease that culminates in ESRD and that in most instances can be effectively treated in its earlier stages. Prevention is thus a possibility: Clinical interventions at earlier stages of CKD can effectively slow, stop, or, in some cases, reverse the progress to ESRD.

The possibility of preventing early-stage CKD from developing into kidney failure represents a still-unfolding area of innovation in nephrology. For medicine, CKD represents a challenge in moving from a chronic disease treatment model to a model that balances the relationship between prevention and care. For policy, the key issues involve the reimbursement of care, i.e., who will pay for the range of care associated with the expanded understanding of CKD.

There is a need for both practitioners and decisionmakers to better understand the CKD clinical practices capable of managing CKD throughout the disease continuum and of improving patient outcomes for kidney disease in the United States. This study represents an initial step in developing that understanding. Our Comprehensive Center for Health Disparities—Chronic Kidney Disease (CCHD–CKD) team, composed of researchers at Charles Drew University, the David Geffen School of Medicine at UCLA, and the RAND Corporation, has been conducting health services research within the CCHD’s Health Policy and Outcomes Core, including this 2006–2007 study. The findings from this study offer descriptive examples of what leading nephrology practices around the United States are doing to address the challenges of CKD and provide the basis for a set of policy and clinical recommendations about how to advance the treatment of CKD.

A “Quiet Revolution” in Nephrology

In 1972, Congress extended Medicare entitlement to all individuals with a diagnosis of permanent kidney failure who needed dialysis or kidney transplantation to avoid death. This legislation led to a dramatic growth in the patient population, especially among the elderly, along with a corresponding rise in expenditures for treatment of the growing patient population. The increase in the patient population also revealed marked disparities in both the incidence and prevalence of ESRD among minority populations. The emergence of disparities did
not represent a sudden increase in the number of cases of CKD among minorities; instead, the Medicare benefit gave providers an incentive to find and treat all patients, bringing many previously undiagnosed cases out into the open. In addition, Medicare began to document the changing demographics of the ESRD patient population, thus providing data that had previously been lacking.

Today, a quiet revolution is occurring in nephrology. The nature of the revolution was crystallized by the 2002 publication of the Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines for the diagnosis and treatment of CKD, which described a progressive five-stage CKD model that incorporated ESRD as the final component of the overall model but provided direction for the early detection and treatment of CKD. Hence, the diagnosis of CKD has become relatively simple (for both nephrologists and non-nephrologists) through a process known as estimation of glomerular filtration rate (or eGFR), which, though not a direct measure of kidney function, estimates the ability of the kidneys to filter cellular toxins.

The framing of the disease as CKD shifts the focus from ESRD and represents a major change and innovation that is still unfolding. But this revolution has yet to receive adequate attention within nephrology and by policymakers, and some significant barriers remain to improved care for CKD patients.1 Key among these is the fact that treatment for ESRD is paid for through Medicare, but early treatment of CKD is not. Other barriers include a lack of coordination between primary care physicians (PCPs) and nephrologists, a lack of public awareness regarding CKD, a lack of consensus among health care providers concerning the importance of CKD, and the need for data concerning the effectiveness of different tests and therapies for CKD.

**Findings from Our Research**

In 2006, we undertook a series of 15 telephone interviews, which were followed in 2007 by site visits to six CKD clinics or practices, to obtain an in-depth understanding of how diverse groups of leading nephrology practices around the United States are confronting the challenges of CKD. These findings offer descriptive examples of CKD practices and specific policy recommendations intended to improve patient outcomes for kidney disease in the United States.

Our telephone interviews raised several key themes concerning CKD practices today, many of which were later echoed in the case studies. Most practices we interviewed favored early intervention, although several expressed ambivalence, and a few thought the payoff was greater when treatments were started in later stages of CKD. The practices identified a number of problems and challenges in treating CKD patients, including limited reimbursement, lack of patient awareness of CKD, and difficulty in identifying CKD patients and in creating patient histories from multiple sources. Relations between nephrologists and other medical specialists—PCPs (internists, family practitioners), cardiologists, and endocrinologists—elicited a good deal of comment. In general, nephrologists felt that patients were being referred for CKD care too late, although respondents also noted a recent trend toward earlier referrals. The practices we interviewed organized CKD care in a variety of ways: Some lacked any formal approach to CKD care, others emphasized CKD but lacked a clear organization, and others had established clinics specifically focused on CKD.

The case studies provide details about these findings and shed light in particular on several of the challenges faced by CKD clinics, as well as some of the ways in which clinics are addressing these challenges. Specifically, these findings include:

**Reimbursement.** The major barrier to clinic operations involved limitations on reimbursement of CKD. All six of the CKD clinics and practices in the case studies face financial chal-

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1 In February 2003, the Council of American Kidney Societies (CAKS) identified 19 barriers to improved patient outcomes in CKD, including specific aspects of both the delivery and financing of care for CKD.
lenges in providing CKD care, especially to support the multidisciplinary staff of nurses and other health professionals needed for a comprehensive practice.

**Patient Referral.** All CKD clinics and practices in the study have confronted the need to reach out to PCPs, cardiologists, and endocrinologists to ensure the predictable referral of patients for CKD care before patients need immediate dialysis. There was concern among nephrologists that PCPs were reluctant to refer for fear of losing patients, but this concern was tempered in academic and integrated CKD clinics by targeted efforts to comanage CKD with PCPs.

**Patient Screening.** The ability to screen potential CKD patients varied across clinics but was generally limited by weak referral patterns in nonintegrated health systems and limited public awareness of the need for early-stage care. The use of eGFR and community outreach programs was cited as a factor in increasing early-stage referrals.

**Patient and Provider Education.** The need to educate both patients and PCPs was seen as critical, both to increase patient awareness of CKD and to ensure that physicians know the early indications of CKD. All CKD clinics engaged in some educational efforts, including presentations, public service announcements, and provider education.

**Practice Organization.** Clinic organization remains quite varied and in flux. The structures of the clinics in our case studies varied greatly. Some nephrology divisions of large multispecialty group practices had carved out a CKD clinic within that context, while in others the CKD effort was an extension of a clinical base in ESRD.

**Use of Clinical Practice Guidelines.** Guidance is increasingly available through continuously updated clinical practice guidelines (CPGs). All CKD clinics in our study used CPGs as a first-order means to identify patients, organize practices, and build data systems. All of the clinics visited adapted the guidelines for local and patient-specific purposes.

**Health Information Technology.** The use of health information technology (HIT) can facilitate CKD care. The six CKD clinics varied greatly in the stage of development of their HIT systems. Some have purchased off-the-shelf products, while others have developed their own. One site received financial assistance from a state and federal government effort to encourage the transition to electronic medical records.

**CKD Disparities.** Unfortunately, the racial and ethnic disparities prevalent in the ESRD population also in the CKD population, but, without reimbursement, referral patterns and levels of patient knowledge often go undetected. In our case studies, sites that served predominantly minority and underserved communities had patients presenting at much younger ages and with more advanced disease. In response, they employed targeted community outreach and educational programs.

The case studies also highlighted a number of benefits that flow from CKD clinics, including the advantages of early treatment, success in using the estimation of GFR for early referrals, and the increasing possibility of preemptive kidney transplantation.

**Policy Recommendations**

On the basis of the telephone interviews and the six case studies, we developed a set of policy and clinical recommendations about how to advance the treatment of chronic kidney disease. The following set of recommendations provides a blueprint for reengineering CKD in the United States:

- Appropriate reimbursement needs to be available to screen at-risk populations and to enable ongoing care by physicians as CKD is diagnosed and progresses.
• Patient referral, the other critical resource, requires negotiations between nephrologists and other providers and specialists at the local clinic or practice level, as well as at the level of the pertinent professional societies.
• Screening patients for CKD by eGFR should be made obligatory by Medicare and state Medicaid agencies, and private insurers should be strongly encouraged to pay for such screening.
• Education is critical. Both patients and providers need to be educated about the prevalence of CKD, who is at risk, who should be treated, and which treatments are effective in slowing the progression of the disease, as well as treating its complications and those associated with comorbid conditions that are present.
• CKD clinical practice needs to integrate the efforts of PCPs, cardiologists, endocrinologists, nephrologists, and nonphysician care providers to optimize clinical outcomes. Coordinated care management, relying on available best medical evidence, needs to drive clinical decisions and practice.
• Available clinical practice guidelines, such as the Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines published by the National Kidney Foundation (NKF) and the Renal Physicians Association (RPA) guidelines, need to be integrated into actual clinical practice.
• Consistent with current health reform efforts, robust HIT is essential to track and evaluate care across various delivery sites.
• Nephrologists and other providers need to be held accountable for the outcomes of their patients.
• Substantial investments in translational and health services research are needed to better understand how to prevent CKD, treat it when it occurs, and carry out these activities efficiently and effectively.

The crisis of nephrology lies in an unresolved tension between the specialty’s increasing ability to do the right thing clinically (by providing effective preventive care) and the persistent realities of major barriers to doing so, including inadequate reimbursement, weak working relations between nephrology and other specialties, organizational impediments, ineffective clinical procedures, and a lack of HIT systems. To the extent that our observations identify models of improved access to CKD care for all individuals as well as efforts targeted at minority populations, this work may help eliminate disparities in kidney disease outcomes. Action on CKD policy will equip clinicians with the basic tools to respond to such factors.

For more information, see RAND TR-826-DREW, available at http://www.rand.org/pubs/technical_reports/TR826.html
International Variation in the Usage of Medicines
A Review of the Literature

by Ellen Nolte, Jennifer Newbould, Annalijn Conklin

Abstract

This article reviews the published and grey literature on international variation in the use of medicines in six areas (osteoporosis, atypical anti-psychotics, dementia, rheumatoid arthritis, cardiovascular disease/lipid-regulating drugs (statins), and hepatitis C). We identify three broad groups of determinants of international variation in medicines use: (1) Macro- or system level factors: Differences in reimbursement policies, and the role of health technology assessment, were highlighted as a likely driving force of international variation in almost all areas of medicines use reviewed. A related aspect is patient co-payment, which is likely to play an important role in the United States in particular. The extent to which cost-sharing policies impact on overall use of medicines in international comparison remains unclear. (2) Service organisation and delivery: Differences in access to specialists are a likely driver of international variation in areas such as atypical anti-psychotics, dementia, and rheumatic arthritis, with for example access to and availability of relevant specialists identified as acting as a crucial bottleneck for accessing treatment for dementia and rheumatoid arthritis. (3) Clinical practice: Studies highlighted the role of variation in the use and ascertainment methods for mental disorders; differences in the use of clinical or practice guidelines; differences in prescribing patterns; and reluctance among clinicians in some countries to take up newer medicines. Each of these factors is likely to play a role in explaining international variation in medicines use, but their relative importance will vary depending on the disease area in question and the system context.

Full Text

In July 2009 the Department of Health established a steering group, “Extent and Causes of International Variation in Drug Usage,” to guide analytical work to better understand the extent and causes of international variation in drug usage. This report aims to contribute to this process by reviewing the published and grey literature on international variation in the use of medicines in six areas (osteoporosis, atypical anti-psychotics, dementia, rheumatoid arthritis, cardiovascular disease/lipid-regulating drugs (statins), and hepatitis C).

The systematic search found surprisingly few international comparative studies that examined medicines use and these varied widely in terms of quality and focus, populations and time periods studied, and outcomes measured. However, despite this variation several common issues emerged from the evidence reviewed here. We identify three broad groups of determinants of international variation in medicines use:

- **Macro- or system level factors.** Differences in reimbursement policies, and the role of health technology assessment, were highlighted as a likely driving force of international variation in almost all areas of medicines use reviewed here, including dementia, rheumatoid arthritis, hepatitis C, and, for some countries in central and eastern Europe, statins. A related but rarely studied aspect is patient co-payment, potentially explaining some of the international variation in medicines use, which is likely to play an important role in the United States in particular, compared with European countries; but the extent to which cost-sharing policies impact on overall use of medicines in international comparison remains unclear.

- **Service organisation and delivery.** Most studies reviewed here pointed to differences in access to specialists as a likely driver of international variation in areas such as atypical antipsychotics, dementia, and rheumatic arthritis, with for example access to and
availability of relevant specialists identified as acting as a crucial bottleneck for accessing treatment for dementia and rheumatoid arthritis.

- **Clinical practice.** Several studies highlighted the role of variation in the use and ascertaining methods for mental disorders, and differences in the use of clinical or practice guidelines. Many studies further pointed to differences in prescribing patterns as an important factor, along with a potential reluctance among clinicians in some countries to take up newer medicines, but none of the studies presented here provided empirical evidence to support this notion.

Each of these factors is likely to play a role in explaining international variation in medicines use, but their relative importance will vary depending on the disease area in question and the system context. It is likely that any given level of use of a given medicine in one country is determined by a set of factors the combination and the relative weight of which will be different in another country.

For more information, see RAND TR-830-DH, available at [http://www.rand.org/pubs/technical_reports/TR830.html](http://www.rand.org/pubs/technical_reports/TR830.html)
The Role of Faith-Based Organizations in HIV Prevention and Care in Central America

by Kathryn Pitkin Derose, David E. Kanouse, David P. Kennedy, Kavita Patel, Alice Taylor, Kristen J. Leuschner, Homero Martinez

Abstract

Faith-based organizations (FBOs) have historically played an important role in delivering health and social services in developing countries; however, little research has been done on their role in HIV prevention and care, particularly in Latin America. This study describes FBO involvement in HIV/AIDS in three Central American countries hard hit by this epidemic: Belize, Guatemala, and Honduras. Summarizing the results of key informant and stakeholder interviews with health and FBO leaders and site visits to FBO-sponsored HIV/AIDS clinics, hospices, programs, and other activities, the authors describe the range of FBO activities and assess the advantages of FBO involvement in addressing HIV/AIDS, such as churches’ diverse presence and extensive reach, and the challenges to such involvement, such as the unwillingness of some FBOs to discuss condom use and their lack of experience in evaluating the impact of programs. The authors conclude with a discussion of possible ways that FBOs can address the HIV epidemic, both independently and in collaboration with other organizations, such as government ministries of health.

Full Text

HIV/AIDS in Latin America has been called “the overlooked epidemic,” because it has been overshadowed by epidemics of larger scale and severity in sub-Saharan Africa and Asia. Addressing HIV in Latin America has been described as an opportunity to prevent epidemics as devastating as those of sub-Saharan Africa, and to apply lessons learned from Africa and Asia, but government efforts to address the epidemic in Latin America have fallen short. Churches and other FBOs have long been known to have an extensive reach and diverse presence in Latin America, so it is natural to ask what kind of role FBOs might play in addressing HIV/AIDS. At the same time, there are potential barriers to FBO involvement, including FBO “moralizing” about HIV/AIDS and FBOs’ lack of experience in being held accountable for spending and documenting the impact of programs.

This study attempts to shed light on these issues by focusing on the current and potential future role of FBOs in HIV prevention and care in the three Central American countries: Belize, Honduras, and Guatemala. At the time we initiated our study (2007), these countries had among the highest reported prevalence of HIV in Latin America: Belize with 2.5 percent prevalence, Honduras 1.5 percent, and Guatemala 0.9 percent. We performed a literature review and conducted key informant and stakeholder interviews with health and FBO leaders in the three countries along with site visits to FBO-sponsored HIV/AIDS clinics, hospices, programs, and other activities.

The Scope of HIV and AIDS in Belize, Guatemala, and Honduras

Across the three countries, HIV affects mostly young adults, men who have sex with men (MSM), and sex workers. In Honduras and Belize, the Garifuna peoples, descendants of African slaves, are also highly affected. Women in general represent a growing portion of the HIV-positive population, although this trend may simply reflect the natural spread of the epidemic over time. In all three countries, but especially Guatemala, HIV/AIDS care is not widely available in the health system, and hospitals and health care personnel with experience in HIV are centralized mainly in capital and major cities. In general, there is greater emphasis by government on treatment over prevention, although the need to sustain antiretroviral
(ARV) coverage over the long term has not been addressed. Discrimination and stigma also pose considerable problems.

**Current FBO Activities in HIV Prevention and Care**

Our study found that many FBOs are already engaging in some activities related to HIV prevention and testing, care and support services, and stigma reduction and advocacy.

**Prevention and testing.** To date, FBOs have had relatively limited involvement in HIV prevention. Most FBO prevention activities focus on education for children and youth, and very few are directed toward high-risk, highly stigmatized populations, such as MSM or commercial sex workers. FBO leaders have widely varying attitudes on condom use, though the majority of FBO leaders were either anti-condom or willing to mention condoms only under limited circumstances and for limited purposes (e.g., for sero-discordant couples). A few FBOs, e.g., in Honduras, have started to offer rapid HIV testing (saliva and blood), both to the general population and to high-risk groups.

**Care and support services.** FBOs were not often involved in providing medical or mental health care. A few FBOs (typically faith-based nongovernmental organizations [NGOs]) provide such services as clinical care management, administration of ARVs, and treatment of opportunistic infections. In contrast, a relatively large number of FBOs, especially in Guatemala and Honduras, have been involved in providing hospice or shelter for people living with HIV (PLWH), though these facilities range considerably in size and quality. FBOs in all three countries are also involved in counseling, prayer, care for the dying, support groups, and other forms of pastoral care. Very few FBOs focus specifically on improving the social and economic well-being of PLWH (e.g., through formal assistance with food and nutrition or income generation).

**Stigma reduction and advocacy.** Some FBOs are involved in stigma reduction activities, including solidarity marches, sermons, workshops, and interactions with family members. Some also engage in advocacy, such as promoting human rights of PLWH, educating PLWH about their workplace rights, advocating for treatment access, and preparing religious leaders to train others in their congregations to carry out HIV prevention and care activities.

**Facilitators of and Barriers to FBO Involvement in HIV/AIDS**

Our interviews with health and FBO leaders provided insights into ways in which FBO involvement might be facilitated, as well as barriers that can hinder involvement.

**Facilitators**

**Broad reach and influence.** There was an overall sense that FBOs in the three countries could leverage their broad reach and influence to raise awareness and decrease stigma toward PLWH and to provide support and care to PLWH, particularly where gaps exist, such as in nutrition and income-generating activities. Some health and most FBO leaders noted that FBOs’ influence among youth and in remote areas could help them raise awareness and diffuse prevention messages.

**Barriers**

**FBO attitudes and beliefs.** Judgmental attitudes on the part of FBOs toward gays, MSM, and commercial sex workers and their limited reach into these groups were seen by health leaders as significant challenges to FBO involvement in supporting PLWH. Health leaders were also concerned about FBO leaders’ tendency to interpret HIV in religious terms. HIV prevention efforts are further impeded by FBO leaders’ difficulty in discussing sex as well as FBO prohibitions against condom use and/or reluctance to promote condoms.

**Organizational barriers.** A number of health leaders noted that there is no one structure that brings together all faith groups, and this makes it hard to coordinate more broadly
with this sector. This challenge can be further compounded by the multiculturalism of the population.

**Resource barriers.** FBO leaders emphasized that many churches do not have resources for HIV/AIDS activities. They also noted that although churches exist in nearly all geographic areas and communities, health care resources do not, making coordination with health care providers in rural areas difficult.

**Disagreements and tensions between FBOs and secular health organizations.** The interviews revealed fundamental differences in values between religious and health leaders that led them in different directions on HIV prevention and also served as barriers to trust, thus limiting their ability to work collaboratively in relationships. Most importantly, many religious leaders favor some prevention methods (such as abstinence or “being faithful”) and oppose others (such as condoms) based mostly on religious beliefs, with less emphasis on evidence of effectiveness. In contrast, health leaders favor prevention methods that have been proven effective in preventing HIV transmission.

**Conclusions and Future Directions**

Based on the findings from our interviews, we identified several potential roles for FBOs in addressing HIV/AIDS in the three countries.

**FBOs might take a larger role in prevention and testing, in partnership with public health providers.** It is unrealistic to expect many FBOs to shift their focus toward high-risk populations and promotion of condom use. It is more constructive to accept that different organizations, whether FBO or non-FBO, have entirely different comfort levels with regard to specific approaches to behavioral risk reduction, and to find ways for organizations to work together while respecting those differences. Nonetheless, there is still a lot that FBOs could do in the fight against AIDS—e.g., by encouraging people to get tested and get information about HIV—particularly because churches exist in all communities. FBOs that provide testing in partnership with public health providers can send a constructive message that HIV is a disease for which treatment is available and that people should know their status.

**FBOs might become more involved in providing care and support services (especially some services that are rarely addressed).** FBOs already provide many services of this sort. These activities might be expanded to include other needed services, such as transportation, food, housing, and income-generating activities.

**One important role that certain FBOs seem uniquely qualified to undertake is that of reducing the stigma associated with HIV in the faith community and the broader population.** In view of FBOs’ moral authority, broad reach, and ability to influence attitudes, stigma reduction is an area in which FBOs could have an especially strong impact. Indeed, stigma reduction seems critical to realize the full capacity of congregations to address the needs of PLWH.

**Advocacy is another area in which the role of FBOs might be expanded.** Some FBOs have assumed an advocacy role for PLWH, advocating for greater access to health care, ARV, or workplace rights. These advocacy efforts can be quite important in countering the effects of discrimination or simple lack of attention.

**Collaboration with other organizations is needed.** If FBOs are to play a constructive role in addressing HIV in collaboration with the health care system, they must also recognize the unique and complementary strengths that each sector can bring to addressing it. There are also a series of activities that they can assume in collaboration with the health care system:

- Complement the activities of others by addressing gaps outside the scope of others’ missions or that others are unable to complete, e.g., by establishing housing projects for
PLWH and hospices and facilitating income-generating activities in which PLWH could engage once their health has been stabilized by ARV.

- **Reinforce** the activities undertaken by others, e.g., by reinforcing prevention messages, counseling congregations on safe sex practices, and encouraging people to get tested.
- **Facilitate** the activities of other organizations, e.g., by offering opportunities for health leaders to promote the use of condoms in conjunction with other activities that FBOs are directly responsible for organizing.
- **Support** the activities undertaken by others, e.g., by recognizing the efforts of others and encouraging people to support other organizations’ programs.

FBOs can also allow others, such as the Ministry of Health or similar agency, to observe, monitor, and evaluate FBO programs using objective criteria and rigorous analysis. There is also need to build FBO capacity to evaluate their own programs.

The findings of this study suggest that leaders in the public health sector might find it worthwhile to think creatively about ways to make effective use of the strengths and capabilities of FBOs in addressing some of the critical needs posed by the HIV epidemic. Donor organizations can also play a critical role in fostering collaboration between FBOs and public agencies by providing the funds to evaluate and sustain such partnerships.

For more information, see RAND MG-891-RC, available at [http://www.rand.org/pubs/monographs/MG891.html](http://www.rand.org/pubs/monographs/MG891.html)
Building Bridges: Lessons from a Pittsburgh Partnership to Strengthen Systems of Care for Maternal Depression

by Donna J. Keyser, Ellen Burke Beckjord, Ray Firth, Sarah Frith, Susan L. Lovejoy, Dana J. Schultz, Harold Alan Pincus

Abstract

Between January 2007 and June 2010, members of the Allegheny County Maternal and Child Health Care Collaborative designed, implemented, and evaluated the Allegheny County Maternal Depression Initiative, a local system-change effort focused on increasing identification, referrals, and engagement in treatment as needed and appropriate for women at high risk for maternal depression. The collaborative was successful in improving key organizational and clinical processes related to the achievement of its aims. This article describes how and why the initiative was created, the processes through which it was implemented and evaluated, and the results and lessons learned. It concludes with recommendations in four areas for practice and policy change designed to expand and sustain the initiative’s achievements: improve identification of maternal depression, enhance access to available resources and services, increase engagement in behavioral health treatment, and improve overall system performance.

Full Text

Maternal depression is a widespread public health issue that takes a toll on the well-being and livelihood of mothers and their families. It demands a strong community response involving people who share a common vision to strengthen the health and resilience of all mothers and their families in need of help and support.

—Mental Health America and National Center for Children in Poverty (2008)

Between January 2007 and June 2010, members of the Allegheny County Maternal and Child Health Care Collaborative—a broad-based community coalition that has been operating in Allegheny County, Pennsylvania, since 2002—designed, implemented, and evaluated the Allegheny County Maternal Depression Initiative. The initiative is a local systems-change effort focused on increasing identification, referrals, and engagement in treatment as needed and appropriate for women at high risk for maternal depression. This article describes how and why the initiative was created, the processes through which it was implemented and evaluated, and the results and lessons learned. It concludes with recommendations for practice and policy change designed to expand and sustain the initiative’s achievements.

The Problem

Documented high rates of prevalence, especially among low-income populations, combined with significant adverse consequences for both mother and child, make maternal depression the number one complication of childbirth in the United States. Empirical research has demonstrated that interventions for depression are effective for both the general population and ethnically diverse and impoverished groups (Miranda et al., 2003). Nevertheless, for many reasons, women with maternal depression are not identified, and, even when they are identified, they are not effectively engaged in treatment (Swartz et al., 2005).

Barriers to identifying and treating women with maternal depression exist in numerous forms and on many different levels, as documented in the literature and through the collaborative’s work, including the following:
Many physicians do not routinely screen for maternal depression using a validated instrument.

Capacity for appropriately triaging, referring, and treating women at high risk for maternal depression is limited in many physical health care settings.

Existing gaps between the physical and behavioral health care systems make care coordination difficult.

Consumer access is impeded by cultural, perceptual, and real-life issues and stressors that are not easily resolved.

Available treatment protocols might not meet the needs and preferences of pregnant or postpartum women.

Aims and Focus of the Initiative

Since low-income women are at higher risk for maternal depression than other women (Lanzi et al., 1999; Miranda and Green, 1999; Onunaku, 2005; Siefert et al., 2000) and less likely to receive adequate care (Agency for Healthcare Research and Quality, 2004; Skaer et al., 2000; Wang, Berglund, and Kessler, 2000; Young et al., 2001; Vesga-López et al., 2008), the collaborative chose to focus its systems-change efforts on improving service delivery for maternal depression within the local Medicaid system. The initiative had three aims:

- to improve the identification of maternal depression among Medicaid-eligible pregnant and postpartum women in Allegheny County
- to enhance access to available resources and services for women who screen positive for maternal depression
- to increase engagement in behavioral health treatment as needed and appropriate.

To this end, three components of service delivery were targeted for improvement at the systems level: screening, referral, and engagement in treatment.

The Conceptual Model of Systems Change

Figure S.1 presents the initiative’s conceptual model of systems change (adapted from Pincus, Pechura, Elinson, et al., 2001; Pincus, 2003; Pincus, Hough, et al., 2003; Pincus, Houtsinger, et al., 2005; Pincus, Pechura, Keyser, et al., 2006). This model recognizes that consumers and families are at the center of the process, signifying the intent of the local Medicaid managed care system to create a “safety net” around women at high risk for maternal depression. It further acknowledges the roles of key stakeholder groups in driving and sustaining practice and policy improvements. Strengthening linkages between these groups is essential for achieving the initiative’s aims and, in so doing, ensuring that the system better meets the needs and preferences of women at high risk for maternal depression.

Operational Framework of the Initiative

The collaborative developed a protocol for the initiative that delineated the roles and responsibilities of key stakeholder groups in accordance with best-practice standards, the capacities and stated preferences of individual participating practices, and network provider requirements as set forth in the state contract for Medicaid managed care services. Table S.1 provides a brief description of these roles and responsibilities for key partners in each stakeholder group.

The protocol was implemented in two phases:

- Phase 1 implementation (December 2007–December 2008) focused on implementing and tracking the screening and referral components of the initiative protocol.
- Phase 2 implementation (January 2009–February 2010) incorporated efforts to design and test various strategies for increasing referrals of women who screened positive for maternal depression to local physical health managed care organization (MCO) care man-
agents for needed supports and services and enhancing their engagement in behavioral health treatment as needed and appropriate.

Over the course of the initiative, the collaborative also designed and carried out a range of strategies to support the implementation of the protocol and to ensure the overall success of the systems-change process. These strategies, which involved all stakeholder groups, are summarized in Table S.2 by phase of implementation. Based on the results of the phase 1 implementation, the collaborative modified and added components during phase 2.

**Initiative Evaluation Plan**

The collaborative designed a mixed-methods approach, using both qualitative and quantitative data, to evaluate the initiative. The evaluation indicators and data-collection instruments and data sources can be organized into two broad categories: organizational indicators and data-collection instruments and clinical indicators and data sources. The organizational indicators captured key features of systems change related to consumer and provider attitudes and behaviors; the clinical indicators captured key features of systems change related to care processes aligned with the initiative’s three aims. Figure S.2 illustrates how the data-collection tools and data sources align with the progression of a pregnant or postpartum woman through the processes of screening, referral, and engagement in treatment.

**Results of the Initiative**

Although it is not possible to disentangle specific cause-effect relationships among the strategies that were implemented as part of the initiative and the outcomes that were achieved, the results clearly show that, taken as a whole, the collaborative was successful in improving key organizational and clinical processes related to the achievement of its three aims, particularly as compared to reference points cited in the literature related to maternal depression screening, referral, and engagement in treatment for pregnant and postpartum women (Figure S.3).
Aim 1: To improve the identification of maternal depression among Medicaid-eligible pregnant and postpartum women in Allegheny County. Between December 2007 and December 2009, physical health providers participating in the initiative completed more than 8,500 screens on pregnant and postpartum women. Although the overall screening rate declined somewhat from phase 1 to phase 2, the overall 54-percent screening rate across all practices represents a significant accomplishment. The vast majority (86 percent) of participating physical health providers reported that they often, almost always, or always screened for maternal depression at a woman’s first prenatal care or postpartum visit using a validated screening tool. Nonetheless, increasing the screening rate represents a clear target for continued quality improvement.

Aim 2: To enhance access to available resources and services for women who screen positive for maternal depression. Among the nearly 1,200 women identified as high risk by a positive
Table S.2
Summary of Strategies to Support Protocol Implementation During Phases 1 and 2

<table>
<thead>
<tr>
<th>Targeted Area of Focus</th>
<th>Phase 1 Strategy</th>
<th>Phase 2 Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and training of consumers and providers</td>
<td>Educational pamphlet about maternal depression and list of community resources Provider training programs on use of validated maternal depression screening tool, referral, and engagement Website</td>
<td>Additional consumer-supportive materials (e.g., “Prescription for Good Health”) Provider training sessions on mood disorders and motivational interviewing skillsa Policy forum on maternal depression practice and policy Educational and networking workshop on home-based service programs Public forum to disseminate initiative findings and recommendations</td>
</tr>
<tr>
<td>Listening and responding to consumers’ needs</td>
<td>Consumer focus groups Participation in prenatal support groups</td>
<td>Focus on home-based service options</td>
</tr>
<tr>
<td>Use of evidence-based tools and protocols for depression screening and triage</td>
<td>EPDS with varying high-risk thresholds across practices, PHQ-2, and psychiatric history Decision tool for triaging consumers who screened positive</td>
<td>Use of warm transfers Efforts to improve communication between physical health providers and MCO care managers and consumers</td>
</tr>
<tr>
<td>Pathways and related infrastructure to support integrated care</td>
<td>Common referral fax form Procedures for obtaining informed consent All-partners meetings</td>
<td>Stakeholder group discussions</td>
</tr>
<tr>
<td>Performance measurement and shared data collection to assess progress and inform ongoing improvement</td>
<td>Agreed-upon performance measures and data-collection procedures Ongoing analysis and information sharing Course corrections as needed</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: EPDS = Edinburgh Postnatal Depression Scale. PHQ-2 = Patient Health Questionnaire 2.
a Motivational interviewing is a brief, person-centered, goal-oriented counseling method for enhancing a person’s self-motivation for change by working with and resolving ambivalence.

screen, 57 percent were referred by the provider to their physical health MCO care managers. Overall, the referral rate improved from 47 percent in phase 1 to 65 percent in phase 2. Participating physical health providers also reported an increase in the frequency with which they referred women who screened positive to physical health MCO care managers. Overall, MCO care managers were able to reach just over half (53 percent) of their high-risk members. Improving this rate of contact and decreasing the average time between referral and first contact remain critical goals for the physical health MCO care managers.

**Aim 3: To increase engagement in behavioral health treatment as needed and appropriate.** Nearly one-half (46 percent) of the high-risk women referred had engaged in behavioral health treatment at some point. While some of these women engaged in behavioral health treatment prior to the referral, 35 percent of referred women engaged in behavioral health treatment after being identified as being at high risk for maternal depression, which is considerably higher than the 20-percent engagement rate recently published for a similar population (Miranda et al., 2003). However, more work should be done to increase initial and sustained engagement in behavioral health treatment.

In other areas, the collaborative confronted challenges. For example, over the course of the initiative, it was difficult to ensure consistent and timely communication among those with shared responsibility for high-risk women. While the initiative protocol sought to open com-
Lessons from a Pittsburgh Partnership to Strengthen Systems of Care for Maternal Depression

Communication channels, in practice, the information did not always reach the individuals who needed it. Further, there was a considerable lag between a woman’s identification and referral and her ultimate engagement in behavioral health treatment, representing a target for continued quality improvement over time.

**Top Ten Lessons Learned**

In order to identify and prioritize the most important lessons learned through this initiative, the RUPHI team compared the results of the stakeholder group discussions held at the end of the initiative with quantitative and qualitative results that were collected over the course of the initiative.

1. There is no such thing as too much education or training on issues related to maternal depression, but training is not enough.
2. Numerous factors influence the needs and preferences of women who are at high risk for maternal depression.
3. Families’ negative views of or disappointing previous experiences with mental health services or referrals are pervasive and strong.

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**Figure 5.2**
Alignment of Data-Collection Tools and Data Sources with the Progression of a Pregnant or Postpartum Woman Through the Screening, Referral, and Engagement Processes

<table>
<thead>
<tr>
<th>Initiative process</th>
<th>Associated implementation activities</th>
<th>Data tools and sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
<td>Woman screened for maternal depression at physical health provider’s office</td>
<td>Physical health provider screening data</td>
</tr>
<tr>
<td>Referral</td>
<td>Woman’s physical health MCO is notified of her high-risk status</td>
<td>Physical health provider fax form data</td>
</tr>
<tr>
<td></td>
<td>Woman referred to Community Care for help in obtaining a behavioral health appointment</td>
<td>Physical health provider fax form data and/or physical health MCO record data</td>
</tr>
<tr>
<td></td>
<td>Woman referred to behavioral health provider</td>
<td>Physical health provider fax form data and/or physical health MCO record data</td>
</tr>
<tr>
<td></td>
<td>Woman referred to other available resources and services</td>
<td>Not systematically captured in initiative evaluation data</td>
</tr>
<tr>
<td>Engagement</td>
<td>Woman engages in behavioral health treatment</td>
<td>Community Care claims data</td>
</tr>
<tr>
<td></td>
<td>Woman engages in other related services</td>
<td>Not systematically captured in initiative evaluation data</td>
</tr>
</tbody>
</table>
4. Physical health practices can integrate routine screening for maternal depression into the clinical care process.

5. Referrals within and across systems are difficult to execute.

6. The more links in the chain from screening to referral to engagement in treatment, the more likely the chain is to break, but shortening the chain is not a guaranteed solution.

7. Co-location can work if co-located providers are truly integrated into the care team.

8. Diffusion of responsibility in complex systems might not be completely avoidable, but it is remediabale.

9. Effective health care requires transparency and sharing of information among providers and patients.

10. Clear expectations, performance measurement, agreed-upon quality standards, and mechanisms for accountability are key drivers of systems improvement.

**Recommendations for Policy and Practice Change**

Given the long-term, significant impact that maternal depression can have on maternal, child, and family health, the priority the state has placed on bridging existing gaps between physical and behavioral health care in the Medicaid system, and the obvious need for continued improvement related to maternal depression screening, referral, and engagement in treatment, the RUPHl team offers four sets of practice and policy recommendations for key stakeholder groups. These recommendations are provided in detail in Tables S.3–S.6.
Next Steps for the Collaborative

The collaborative has recently embarked on an expansion of the Allegheny County Maternal Depression Initiative, which serves as one concrete next step toward systems integration and holistic interventions for parents and children. The collaborative’s new initiative—Helping Families Raise Healthy Children—advances the work of the collaborative in three ways. First, it builds important linkages with an additional sector that provides services to families with children ages 0 to 3 in Allegheny County—namely, the early-intervention system. Second, it expands maternal depression screening to all primary caregivers with young children who enter the early-intervention system because of developmental concerns related to medical or environmental risks (e.g., very low birth weight, elevated blood lead levels). Third, it seeks to address primary-caregiver depression and the related challenges of healthy early childhood development through home-based, family-centered interventions designed to strengthen parenting and the parent-child relationship.

The Allegheny County Maternal and Child Health Care Collaborative has made a long-term commitment to building a model system of care for parents and young children in the community. While we at the collaborative have made significant progress during the past eight years, there is still much work to be done. We hope that this report will inspire others to mobilize forces in their communities and beyond to strengthen the systems responsible for ensuring the health and well-being of all families across the commonwealth.

Depression is real after childbirth—for both mothers and fathers. It is the people who touch the lives of new parents that can make a difference in a family’s life. It is the people that we trust that can make us feel safe enough to talk about the unhappy feelings that sometimes occur after a new baby comes into our life. . . . This project can make a difference . . . for the health of our future—our families.

—mother, Allegheny County, Pennsylvania

References


For more information, see RAND MG-973-UPMCFY, available at http://www.rand.org/pubs/monographs/MG973.html
Table S.3
Recommendations to Improve Identification of Maternal Depression

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Recommendation</th>
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</thead>
</table>
| Pennsylvania General Assembly | Universal screening is the first step in a comprehensive state strategy designed to ensure that more women with maternal depression receive services as needed and appropriate. However, nothing more than additional screening will be accomplished without adequate capacity and explicit processes for referring women who screen positive for maternal depression to an array of accessible, effective, and culturally informed services that meet their needs and preferences. In this context, we recommend the following: 
A. Mandate universal screening for maternal depression irrespective of insurance coverage. 
B. Legislation mandating universal screening should also ensure that (1) the Department of Public Welfare and the Department of Insurance develop adequate capacity for timely referrals and treatment of publicly and privately insured pregnant and postpartum women who screen positive for maternal depression and (2) the Department of Public Welfare and the Department of Insurance, along with the Department of Health, are involved in adopting and promulgating rules and regulations necessary to carry out the purposes and provisions of this legislation. |
| HealthChoices physical health MCOs | A. Establish maternal depression screening requirements for network providers who serve pregnant and postpartum women. These requirements should be consistent with evidence-based screening practices and professional organization standards and specify (1) validated screening tools acceptable for use, (2) appropriate screening intervals, (3) a common threshold for identifying probable maternal depression. 
B. Revise existing perinatal depression measures or create new measures that align with evidence-based practices and standards for maternal depression screening. 
C. Set explicit targets for improving the rate of maternal depression screening across network providers who serve pregnant and postpartum women. 
D. Establish reporting, monitoring, and feedback systems to assess and improve the maternal depression screening performance of network providers. 
E. Develop, implement, and evaluate various strategies to support network providers in meeting and exceeding their performance goals. |
| Physical health practices and providers in the HealthChoices network | A. Accelerate efforts to screen all pregnant and postpartum women with an acceptable validated screening tool, at the appropriate intervals, and using a common threshold for identifying probable maternal depression. 
B. To the extent possible, incorporate an acceptable, validated maternal depression screening tool into the practice’s electronic medical record. |

\textsuperscript{a} The Pennsylvania Department of Insurance is responsible for administering the laws of the commonwealth as they pertain to the regulation of the insurance industry, in order to protect the insurance consumer.
Table S.4
Recommendations to Enhance Access to Available Resources and Services for Women Who Screen Positive for Maternal Depression

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania Department of Public Welfare, Office of Medical Assistance Programs and Office of Mental Health and Substance Abuse Services</td>
<td>The HealthChoices agreement has extensive requirements for written agreements and protocols related to access and coordination among physical and behavioral health MCOs and providers. These requirements are intended to maximize outreach efforts to members identified as needing services and to facilitate referrals and continuity of care as needed. The Department of Public Welfare regularly reviews these agreements and protocols. However, significant challenges remain with regard to ensuring successful outreach to members with maternal depression and their subsequent access to needed services. In this context, we recommend the following: A. Review and revise the current requirements in order to ensure their appropriateness for meeting the outreach and access needs of pregnant and postpartum members who screen positive for maternal depression. B. More explicitly delineate the roles and responsibilities of MCOs and network providers for implementing the revised requirements. C. Strengthen the current review process by establishing performance measures to properly assess the extent to which contractual requirements lead to (1) successful outreach to pregnant and postpartum members who screen positive for maternal depression and (2) improved service access as needed by these members. D. Develop, implement, and evaluate various strategies to support MCOs in meeting the contractual requirements.</td>
</tr>
<tr>
<td>HealthChoices physical and behavioral health MCOs</td>
<td>A. Establish explicit collaborative procedures involving MCO care management staff and network providers for making, receiving, and handling referrals of pregnant and postpartum members who screen positive for maternal depression. These procedures should include (1) an appropriately safeguarded electronic means for sharing necessary patient information among all relevant parties; (2) effective strategies for connecting with members, assessing their needs and health status, and responding appropriately; and (3) provision of timely feedback to referring providers on patient status and relevant outcomes. B. Revise existing perinatal depression measures or create new measures that align with the established referral procedures. C. Set explicit targets for increasing referrals of pregnant and postpartum members who screen positive for maternal depression to MCO care managers or behavioral health or other service providers as appropriate, and improving the process through which these referrals are handled. D. Establish reporting, monitoring, and feedback systems to assess and improve the referral performance of network providers and MCO care management staff. Incorporate measures of provider, MCO care management, and member satisfaction in the ongoing review process. E. Develop, implement, and evaluate various strategies to support network providers and MCO care management staff in meeting and exceeding their performance goals. F. Review member incentive and reward programs for opportunities to further encourage pregnant and postpartum women who screen positive for maternal depression to connect with their MCO care managers on a regular basis.</td>
</tr>
<tr>
<td>HealthChoices physical health MCOs</td>
<td>Revise the ONAF to include the EPDS or other acceptable depression screening score for all pregnant women.</td>
</tr>
<tr>
<td>HealthChoices behavioral health MCOs</td>
<td>Evaluate the benefits of placing a behavioral health care manager in large-volume physical health practices. Develop a detailed plan for (1) integrating the individual or function into the practice’s work flow and providing access to relevant information systems; (2) fully utilizing motivational interview techniques and patient-centered principles, with a strong focus on addressing the member’s tangible social support needs (e.g., transportation, childcare); (3) assessing patient and family outcomes for engagement in behavioral health services or appropriate alternatives. To enable physical health providers to become sufficiently familiar with the access requirements and range of services and providers available through the behavioral health network, allow the co-location strategy to achieve its maximum level of implementation (at least one year) before making a final assessment of its value and sustainability.</td>
</tr>
</tbody>
</table>
### Table S.4—Continued

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical health practices and providers in the HealthChoices network</td>
<td>Accelerate efforts to refer pregnant and postpartum women who screen positive for maternal depression to physical and behavioral health MCOs, behavioral health providers, or community resources and services (e.g., home-based service programs) as needed and appropriate.</td>
</tr>
</tbody>
</table>

NOTE: ONAF = obstetrical needs assessment form.

### Table S.5

Recommendations to Increase Engagement in Behavioral Health Treatment as Needed and Appropriate

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania Department of Public Welfare, Office of Medical Assistance Programs and Office of Mental Health and Substance Abuse Services</td>
<td>The HealthChoices Agreement has extensive requirements for written agreements and protocols related to access and coordination among physical and behavioral health MCOs and providers. These requirements are intended to facilitate members' access to diagnostic assessment and treatment, prescribing practices, and other treatment issues necessary for optimal health. The Department of Public Welfare regularly reviews these agreements and protocols. However, significant challenges remain with regard to engaging members with maternal depression in behavioral health treatment as needed and appropriate. In this context, we recommend the following: A. Review and revise the current requirements in order to ensure their appropriateness for meeting the treatment engagement needs of pregnant and postpartum women who screen positive for maternal depression. B. More explicitly delineate the roles and responsibilities of MCOs and network providers for implementing the revised requirements. C. Strengthen the current review process by establishing performance measures to properly assess the extent to which the contractual requirements lead to engagement of members with maternal depression in behavioral health treatment. D. Develop, implement, and evaluate various strategies to support MCOs in meeting the contractual requirements.</td>
</tr>
</tbody>
</table>

| HealthChoices physical and behavioral health MCOs | A. Establish explicit collaborative procedures involving MCO care management staff and network providers for facilitating engagement in behavioral health treatment among pregnant and postpartum members who screen positive for maternal depression. These procedures should include (1) an appropriately safeguarded electronic means for sharing necessary patient information among all relevant parties; (2) effective strategies for connecting with members, assessing their needs and health status, and responding appropriately; and (3) provision of timely feedback to referring providers on patient status and relevant outcomes. B. Revise existing perinatal depression measures or create new measures that align with the established engagement procedures. C. Set explicit targets for increasing engagement in behavioral health treatment for pregnant and postpartum members who screen positive for maternal depression. D. Establish reporting, monitoring, and feedback systems to assess and improve the performance of network providers and MCO care management staff specific to engaging members who screen positive for maternal depression in behavioral health care. Incorporate measures of provider, MCO care management, and member satisfaction in the ongoing review process. E. Develop, implement, and evaluate various strategies to support network providers and MCO care management staff in meeting and exceeding their performance goals. F. Review member incentive and reward programs for opportunities to further encourage pregnant and postpartum women who screen positive for maternal depression to engage in behavioral health treatment as needed and appropriate. G. In cases in which pregnant or postpartum women who screen positive for maternal depression will not accept a referral for outpatient mental health treatment, utilize and assess the cost-effectiveness of engaging them in home-based service programs or other nonmedical community programs. |
The combined negative impact of the attributions of illness, difficult life circumstances (e.g., poverty), demands of infant caretaking, and unfavorable perceptions or past experiences with the behavioral health system too often impedes access to treatment for women with maternal depression. Overcoming these barriers would lead to maternal recovery and healthy early child development. In this context, it is critical to ensure adequate, sufficiently skilled psychiatric capacity to meet HealthChoices’ access standards and the treatment needs of pregnant and postpartum members with depression.

Strategies to consider include the following:

A. As rates of maternal depression screening increase, retest the utility and cost-effectiveness of a statewide telephone consultation service operated by psychiatrists to support providers (e.g., family medicine and other primary care practitioners) on issues related to diagnoses, treatment options, medications, or alternative therapies for pregnant and postpartum members who screen positive for maternal depression.

B. Test the effectiveness and long-term viability of telephone or in-home mobile psychotherapy for pregnant and postpartum members who screen positive for maternal depression, as well as more innovative approaches, such as offering web-based cognitive behavioral therapy in multiple, family-friendly settings.

C. Evaluate the benefits of placing a behavioral health specialist in large-volume physical health practices. Develop a detailed plan for (1) integrating the individual or function into the practice’s clinical work flow and providing access to relevant information systems; (2) fully utilizing motivational interview techniques and patient-centered principles; and (3) assessing patient and family health outcomes and satisfaction. Allow the co-location strategy to achieve its maximum level of implementation (at least one year) before making a final assessment of its value and sustainability.

D. Develop mechanisms for obtaining input from pregnant and postpartum members who screen positive for maternal depression on alternative service options that meet their needs and preferences.

Explore opportunities to co-locate behavioral health specialists at nearby physical health practices that currently do not have in-house behavioral health capacity. Develop a detailed plan for (1) integrating the individual or function into the practice’s clinical work flow and providing access to relevant information systems; (2) fully utilizing motivational interview techniques and patient-centered principles; and (3) assessing patient and family health and satisfaction. Allow the co-location strategy to achieve its maximum level of implementation (at least one year) before making a final assessment of its value and sustainability.

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Recommendation</th>
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</table>
| HealthChoices behavioral health MCOs | The combined negative impact of the attributions of illness, difficult life circumstances (e.g., poverty), demands of infant caretaking, and unfavorable perceptions or past experiences with the behavioral health system too often impedes access to treatment for women with maternal depression. Overcoming these barriers would lead to maternal recovery and healthy early child development. In this context, it is critical to ensure adequate, sufficiently skilled psychiatric capacity to meet HealthChoices’ access standards and the treatment needs of pregnant and postpartum members with depression. Strategies to consider include the following:
A. As rates of maternal depression screening increase, retest the utility and cost-effectiveness of a statewide telephone consultation service operated by psychiatrists to support providers (e.g., family medicine and other primary care practitioners) on issues related to diagnoses, treatment options, medications, or alternative therapies for pregnant and postpartum members who screen positive for maternal depression.
B. Test the effectiveness and long-term viability of telephone or in-home mobile psychotherapy for pregnant and postpartum members who screen positive for maternal depression, as well as more innovative approaches, such as offering web-based cognitive behavioral therapy in multiple, family-friendly settings.
C. Evaluate the benefits of placing a behavioral health specialist in large-volume physical health practices. Develop a detailed plan for (1) integrating the individual or function into the practice’s clinical work flow and providing access to relevant information systems; (2) fully utilizing motivational interview techniques and patient-centered principles; and (3) assessing patient and family health outcomes and satisfaction. Allow the co-location strategy to achieve its maximum level of implementation (at least one year) before making a final assessment of its value and sustainability.
D. Develop mechanisms for obtaining input from pregnant and postpartum members who screen positive for maternal depression on alternative service options that meet their needs and preferences. |
| Behavioral health practices and providers in the HealthChoices network | Explore opportunities to co-locate behavioral health specialists at nearby physical health practices that currently do not have in-house behavioral health capacity. Develop a detailed plan for (1) integrating the individual or function into the practice’s clinical work flow and providing access to relevant information systems; (2) fully utilizing motivational interview techniques and patient-centered principles; and (3) assessing patient and family health and satisfaction. Allow the co-location strategy to achieve its maximum level of implementation (at least one year) before making a final assessment of its value and sustainability. |
### Table S.6

**Recommendations to Improve Overall Systems Performance in Relation to Maternal Depression Screening, Referral, and Engagement in Treatment**

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania Department of Public Welfare, Office of Mental Health and Substance Abuse Services</td>
<td>Effective screening, referral, and treatment engagement enhances the quality of life and functioning of women with maternal depression and reduces a risk factor that can negatively affect a young child’s development. These outcomes support the department’s goals of enhancing the development of young children and increasing opportunities for persons dependent on Medicaid to obtain employment. In this context, it is critical to establish maternal depression as a priority in the public mental health system.</td>
</tr>
</tbody>
</table>
| Pennsylvania Department of Public Welfare, Office of Medical Assistance Programs and Office of Mental Health and Substance Abuse Services | A. Accelerate collaborative interdepartmental efforts to encourage the development and proliferation of interoperable electronic health records for improving data sharing and integration and coordination of care throughout the commonwealth.  
B. Enlist MCOs in a coordinated effort to develop common standards, metrics, and incentives for enhancing network providers’ use of health information technology options that support integrated care.  
C. Charge the physical and behavioral health care coordination groups within each HealthChoices zone to develop collaborative strategies for (1) increasing rates of maternal depression screening and (2) improving referral and treatment engagement rates of pregnant and postpartum members who screen positive for maternal depression. |
| HealthChoices physical and behavioral health MCOs | A. Work together with providers, consumers, and families to develop information-sharing agreements as needed for ensuring full knowledge of issues that affect a woman’s physical and behavioral health or the health of the mother and the child. Specific efforts should be made to develop a standard release-of-information form for use by MCOs and network providers serving similar patient populations.  
B. Create regular opportunities (e.g., in-person workgroups, teleconferences, webinars) for care managers and physical and behavioral health providers to review shared cases of success and failure related to serving pregnant and postpartum women who screen positive for maternal depression. |
| Physical and behavioral health practices and providers in the HealthChoices network | A. Identify appropriate health information technology options that support integrated care and funding opportunities or reduced cost programs for developing them.  
B. Continue to track progress on screening, referral, and engagement in treatment for women at high risk for maternal depression and develop and implement internal quality-improvement programs as needed.  
C. Advance efforts to network with other area providers who are treating pregnant and postpartum women who screen positive for maternal depression to share resources, experiences, and learning. |
A Prototype Interactive Mapping Tool to Target Low Health Literacy in Missouri

by Laurie Martin, Allen Fremont, Alexandria Felton, Teague Ruder, Chloe Bird, Lisa Miyashiro, Mark Hanson, Nicole Lurie

Abstract

An estimated 36 percent of American adults have health literacy levels rated at "basic or below," indicating that they have difficulty obtaining, processing, and understanding basic health information and services. To help healthcare decisionmakers in Missouri identify neighborhood-level "hotspots" of suboptimal health or healthcare that may be due to low health literacy, RAND developed a prototype interactive web-based mapping tool. This builds on earlier RAND work to develop a predictive model of health literacy and estimate levels of health literacy in small geographic areas (e.g., census tracts). The interactive mapping tool allows stakeholders to select the level of geography (e.g., census tract, county), obtain information for and map specific regions of interest, select the characteristics to be mapped (i.e., estimates of community-level health literacy, health outcomes and care quality, neighborhood sociodemographic characteristics, and neighborhood health services data), and generate tables and reports on the regions and characteristics of interest. Housed on a dedicated RAND website (http://www.rand.org/health/projects/missouri-health-literacy.html), the mapping tool makes it possible for a range of stakeholders, from health plans to community organizations, to access and use the tool to help address healthcare disparities in their communities.

Full Text

Over the past decade, providers and policymakers alike have recognized the need to shift from documenting the existence of gaps in quality of care and health outcomes to doing something about them. Numerous efforts have identified characteristics of individuals who are deemed to be "at risk" for poor health outcomes and lower-quality care, such as belonging to certain minority groups or having low income or low education. In addition, health literacy has emerged as a potentially critical pathway through which education, income, and other fundamental determinants impact healthcare quality and disparities. Health literacy is "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Ratzan and Parker, 2000). Individuals with low health literacy (LHL) have difficulty with tasks ranging from understanding directions for taking medication to navigating the healthcare system.

Many stakeholders recognize that achieving equity in the U.S. healthcare system requires addressing challenges related to LHL. However, efforts to translate such evidence into cost-effective actions and interventions have been only marginally successful. Identifying geographic areas with large numbers of people with LHL can help stakeholders target interventions more efficiently and cost-effectively. Such a population-based approach is especially attractive in view of the recent acceleration of interest in public health literacy, defined as "the degree to which individuals and groups can obtain, process, understand, evaluate, and act on information needed to make public health decisions that benefit the community" (Freedman et al., 2009), and the concomitant need to develop more multifaceted and population-based approaches to improving health. The feasibility and success of a population-based approach to addressing LHL and resulting health disparities, however, relies in part on the ability to identify geographic areas where large numbers of at-risk people live in order to determine effective types of interventions and optimal locations for implementation.
A Prototype Interactive Web-Based Tool to Target LHL

Stakeholders are in need of a tool to help them maximize the impact of limited resources available to address LHL and to target those resources toward communities at greatest need. In response, RAND developed a prototype interactive web-based mapping tool to help healthcare decisionmakers in Missouri identify community-level “hot spots” of suboptimal health or healthcare that may be due to LHL. This work is part of a multiphase project, sponsored by the Missouri Foundation for Health, to develop a predictive model of health literacy and to estimate levels of health literacy in small geographic areas (e.g., census tracts). The resulting tool incorporates the following data:

- **Estimates of community-level health literacy.** In an earlier phase of this project, we developed predictive models of health literacy using data from the National Assessment of Adult Literacy (NAAL) (Lurie et al., 2010; Martin et al., 2009). These models, when applied to census-derived variables for small geographic areas, provide an estimate of the percentage of individuals within that region with “basic” or “below basic” health literacy skills, as well as their mean NAAL scores.
- **Health outcomes and care quality,** including breast and colon cancer screening and quality of diabetes care. These were obtained from Missouri’s County Level Study (CLS).
- **Neighborhood sociodemographic characteristics** were obtained from the 2000 U.S. Census and the 2007 American Community Survey (ACS).
- **Neighborhood health services data** including medically underserved areas (MUAs), health professional shortage areas (HPSAs), and the locations of hospitals and federally qualified health centers (FQHCs), obtained from the American Hospital Association (AHA) and the Health Resources and Services Administration (HRSA).

Using GIS technology, this prototype tool presents the above data in the form of color-coded maps that quickly show stakeholders where individuals with different characteristics reside and where health or healthcare is suboptimal. This GIS mapping tool is part of RAND’s Q-DART project, which applies emerging analytic and decision tools to better target gaps in the quality of care and health outcomes in diverse populations, helping decisionmakers more wisely allocate scarce resources.

By simultaneously mapping neighborhood levels of health literacy and low-quality care, stakeholders obtain a more empirically based understanding of the geographic distribution of these problems in and around their communities, helping to reverse the “inverse care law,” which states that the availability of quality medical care tends to vary inversely with the need among the population served (Schillinger, 2007; Tudor-Hart, 1971). As such, this tool may not only help stakeholders target population health interventions in communities of greatest need (Lalonde, 1974) but also support the development of tailored approaches to improving health among vulnerable populations (Frolich and Potvin, 2008).

The interactive mapping tool allows stakeholders to select the level of geography (e.g., census tract, county), obtain information for and map specific regions of interest, select the characteristics to be mapped, generate tables and reports on the regions and characteristics of interest, import their own data, export data from the tool, and save and print their projects.

The prototype tool is housed on a dedicated RAND website (http://www.rand.org/health/projects/missouri-health-literacy.html), making it possible for a range of stakeholders, from health plans to community organizations, to access and use the tool to help address healthcare disparities in their communities.
References


Missouri Department of Health and Senior Services, *Missouri County-Level Study (CLS)*, 2007.


For more information, see RAND TR-811-MFH, available at http://www.rand.org/pubs/technical_reports/TR811.html
Navigating the Road to Recovery
Assessment of the Coordination, Communication, and Financing of the Disaster Case Management Pilot in Louisiana

by Joie Acosta, Anita Chandra, Kevin Carter Feeney

Abstract

In 2009, individuals heavily affected by Hurricanes Katrina and Rita were still in need of social services. The Federal Emergency Management Agency (FEMA) provided funding to the Louisiana Recovery Authority to implement the Disaster Case Management Pilot (DCMP) in order to help people still living in FEMA temporary housing units in April 2009 move to permanent and secure housing and access services. Despite concerted effort by participating agencies, the implementation of the DCMP was fraught with challenges. As a result, the pilot could not be implemented as intended, leaving the needs of many clients not fully met. This article shares details of a report that documents some of the key challenges in coordination, communication, and financing of the program and offers recommendations for future state and FEMA implementation of disaster case management. In light of these challenges, the authors recommend that federal and state governments review the systems used to identify and locate residents in need of disaster case management; these systems performed poorly in the DCMP, making it difficult to appropriately plan services. The stop and start of recovery initiatives led to serious discontinuities in client recovery, so the authors also recommend that federal and state governments consider a single, longer-term recovery initiative that seamlessly acknowledges the stages of human recovery. Improvements in how federal and state governments identify and locate affected residents, consider needs and vulnerabilities in planning, and ensure continuity of services are critical to ensure high-quality disaster case management.

Full Text

The impacts of Hurricanes Katrina, Rita, Ike, and Gustav continue to affect the Gulf States region. Thousands remain displaced from their homes and continue to struggle to recover from the trauma and aftermath. Historically marginalized and vulnerable populations in particular—such as individuals with disabilities, the elderly, and those from low socioeconomic backgrounds—confront barriers to recovery that others with more resources are able to resolve without the assistance of social services.

Disaster case management services provide relief to people in both the short and long term after disaster by connecting them with services needed to facilitate recovery. The Disaster Case Management Pilot (DCMP) is the most recent model of disaster case management for Louisiana and other states along the Gulf of Mexico, which was implemented by federal and state authorities in the period following Hurricanes Katrina, Rita, Ike, and Gustav. The Louisiana Recovery Authority (LRA) received funding from the Federal Emergency Management Agency (FEMA) to implement the DCMP (fall 2009–spring 2010) in order to fill gaps in service provision that still remained after earlier case management programs. The DCMP was specifically designed for individuals who still resided in FEMA temporary housing units as of April 27, 2009.

The LRA asked RAND to assess the DCMP. This analysis began in late March 2010 and included documentation of how the DCMP was organized and financed; identification of the major challenges to communication, coordination, and financing of the pilot; and provision of recommendations to the LRA and FEMA about how to improve future implementation of disaster case management in Louisiana. A team of RAND researchers used several methods, including document reviews, individual and group interviews with staff from the federal and
state authorities responsible for implementing the pilot, focus groups with case managers and supervisors from the agencies contracted to provide case management, and analyses of case management data, to document DCMP activities and assess the pilot’s progress in helping residents of Louisiana obtain recovery services. The LRA and FEMA were interested in understanding optimal methods of disaster case management. Thus, the intent of this analysis is to identify implementation barriers and focus on areas for process improvement.

Implementation of the DCMP began in September 2009. During initial intake and triage of the 3,324 on the master list from FEMA, 722 clients were not able to be contacted due to out-of-date contact information, and 518 clients refused services. Between intake and clients being assessed by a permanently assigned case manager, DCMP case managers lost contact or were refused by another 280 clients. As of April 19, 2010—1—one month before the pilot ended—Louisiana had approved invoices for less than half (44 percent) of the $9.4 million budgeted for the pilot and opened approximately half (n = 1,804) of the cases FEMA initially estimated. Among cases opened during the pilot period, 45 percent (n = 818) remained open as of April 2010, suggesting that these clients were still in need of case management services. Only 10 percent of the cases opened during the pilot (n = 186) were closed with at least one of the client’s primary needs met. An analysis of client characteristics found that most of these clients had multiple vulnerabilities: They were older (median age of 53); 82 percent had no more than a high-school education; more than 50 percent had an annual income of less than $15,000; and more than 75 percent of clients resided in a mandatory evacuation zone and were displaced from their primary residence. Statistical differences between clients with open and closed cases suggest that clients who had a recorded health issue were 41 percent more likely to still have open cases and that those who fell below the poverty line, had no source of income, or were otherwise unable to support themselves were 32 percent more likely to still have open cases. Most clients with open cases needed housing (62 percent), case management (56 percent), or furniture assistance (40 percent). Predisaster, 28 percent (n = 505) of the DCMP participants resided in New Orleans; the remaining were in surrounding areas.

Despite concerted effort by participating agencies, the implementation of the DCMP was fraught with challenges—most notably, difficulties that emerged from the particular vulnerabilities (e.g., age, disability, isolation) of the target population. A major barrier for the pilot was the overall design: The pilot was designed for individuals who were still struggling to move from FEMA trailers nearly five years after Hurricane Katrina, but, due to delays in the application process, the pilot period was only seven months long (September 2009–March 2010). Without significant planning and preparation, this was not a feasible timeline in which to serve this vulnerable population. In addition to timeline challenges for this vulnerable population, the lists of clients provided to states were not complete. This missing contact information presented difficulties in reaching eligible clients. These design challenges and the additional challenges summarized in Table S.1 resulted in delays in services and financial reimbursement, tensions between the LRA and contractors regarding pilot implementation, and discrepancies between the number of cases initially estimated and the number of cases actually opened. As a result, the pilot could not be implemented as intended; now it has ended, leaving the needs of many clients not fully met.

In light of these challenges, we recommend that, before implementing another disaster case management program in Louisiana, the state authorities, in partnership with local case management agencies should do the following:

- Assess the needs of the population and available community resources to inform planning.
- Revise the request-for-proposals (RFP) process used for disaster case management. The RFP for the lead contractor and the third-party evaluator should be released in advance

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1 Final data from May 14, 2010, provide a more updated summary of the number of open and closed cases but were not available in time for use in this report.
of other RFPs so the contract can be awarded and materials can be prepared in advance of bringing case management agencies on board. The proposal should clearly state measurable goals and objectives and the roles and responsibilities of each agency. The RFP should also include start-up time to allow case management agencies to hire staff (including a qualified data-entry specialist), equip offices properly, and require ongoing training of case managers.

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<tr>
<th>Aspect of Implementation</th>
<th>Challenge</th>
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<td>Structure of the pilot</td>
<td>The list of eligible cases that went to case management organizations from FEMA was out of date, resulting in overestimates of staff needs and poor allocation of resources based on client location.</td>
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<td>The timeline for the pilot was not feasible in terms of start-up, planning, and transition, particularly given the vulnerabilities of the target population.</td>
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<td>Narrow eligibility criteria missed some individuals still in need.</td>
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<td>Lack of clarity on roles and responsibilities between the lead contractor and the LRA might have been exacerbated by the contracting structure and RFP process for the pilot.</td>
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<td>Case managers and case manager supervisors reported minimal training on data entry and management and on the overall operational processes of the DCMP.</td>
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<td>Case management organizations lacked operational capacity (e.g., management structure, phones, computers) to start immediately and lacked time and funds to build the organizational capacity needed.</td>
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<td>There was a lack of community resources for client referrals.</td>
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<td>Understaffing and inappropriate staffing at the LRA and lead contractor agency created challenges to implementing the pilot.</td>
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<td>Communication among agencies involved in the pilot</td>
<td>The DCMP objectives for expected benchmarks and progress toward goal and vision were not clearly communicated.</td>
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<td>Communication about the roles and responsibilities of each entity involved in the DCMP was inconsistent.</td>
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<td>There was limited documentation of decisions associated with DCMP processes, and many of these decisions were poorly communicated to local contractors.</td>
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<td>Communication problems resulted in delays in service decisions and financial reimbursement and changes in policies midstream.</td>
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<td>Pilot financing</td>
<td>State officials and local case management agencies reported that difficulties emerged due to limited guidance on how to complete financial forms required by FEMA.</td>
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<td>Clarity and timelines for reimbursement presented challenges, particularly for case management agencies. Reimbursement policies also did not align well with case management needs.</td>
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<td>Guidelines for what could be included for indirect costs were confusing and resulted in financial loss for contracting agencies.</td>
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<td>Given the short pilot duration and state regulations, there was no funding for pilot start-up.</td>
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<td>Data collection and evaluation of the pilot</td>
<td>The LRA received regular updates of individual level client data, which created duplication in data entry and inefficiencies in tracking.</td>
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<td>Data quality was questionable because case managers had difficulty entering data; quality assurance was also limited.</td>
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• Develop state guidance for how to implement these types of grants with attention to financial procedures. A more streamlined process for invoice review that does not require multiple levels of review is also needed.
• Create a common or centralized forum to share disaster case management templates (e.g., client forms, financial forms), guidance (e.g., directions for reimbursement), decisions related to design and implementation, and communication about resource availability (e.g., connecting case managers to identify available community services) for participating agencies to use throughout the program.

To improve development and implementation of a national disaster case management program, we recommend that FEMA take the following steps in designing a national disaster case management program:

• Consider how to best track client information for vulnerable populations affected by disaster, and use predisaster data to identify “vulnerability hot spots.”
• Develop a web-based knowledge center at program inception to provide centralized program information on an ongoing basis.
• Create financial templates for state use that accommodate state variation in reimbursement and other contract requirements, and review responsibilities around reimbursement timelines. Financial templates should be revised to ensure that line items account for the needs and requirements of best practices in case management.
• Consider how to best design a support system that can streamline intake and triage of cases and help determine client eligibility for services.
• Target investments to maintain an ongoing infrastructure to support disaster case management, which might improve response time and save start-up costs.
• Coordinate the transition points between individual assistance and disaster case management.

The DCMP also highlighted overarching questions about the processes and underlying principles of disaster case management. Research is needed to answer these questions. Addressing the following questions could help to improve how disaster case management is designed and implemented in the future:

• What is the best way to identify and track the location of clients and client needs?
• How can disaster case management programs be designed to best meet the needs of vulnerable populations in the immediate postdisaster period?
• How can case management services best develop financial literacy among clients to ensure appropriate and responsible use of federal dollars?
• How can state authorities identify, before a disaster, the local contractors and case management agencies that are best equipped to handle disaster case management?

Finally, this analysis highlights two themes critical for all recovery efforts. First, the system of identification and location of residents—particularly the populations most at risk due to pre-existing and disaster-related events—is limited at best. Without a concerted review of these systems, government and case management agencies are unable to appropriately strategize for adequate service provision, including staffing algorithms, resource allocation, and development of a robust resource network. Second, the “stop and start” of recovery initiatives at both the federal and state levels might lead to serious discontinuities in client recovery. A single, longer-term recovery initiative that seamlessly acknowledges the stages of human recovery is merited.

For more information, see RAND TR-849-LRA, available at http://www.rand.org/pubs/technical_reports/TR849.html
Additional Health Research from RAND

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