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Complex trauma research in the UK

A rapid review of the
funding landscape

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Prepared for the Department of Health (England)

The research described in this report was prepared for the Department of Health (England).

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Executive summary

RAND Europe was asked by the England Department of Health (DH) in December 2010 to provide a strategic, rapid review of the funding landscape for complex trauma research in the UK and, where possible, internationally. Part of the motivation behind the study was the perception that National Health Service (NHS) and Ministry of Defence (MoD) clinicians and researchers working in the area of complex trauma could do more to learn from each other. The findings of the review will be used to inform ongoing, strategic discussions between the DH and the MoD.

In reviewing complex trauma research, we were asked to focus on those areas of research which target the early phase of injury and can improve the effectiveness of therapies and interventions at the pre-hospital and early in-hospital phase. In addition, we were asked to review research which had a focus on the infective challenges faced by injured patients and to exclude basic research from the review, such as that looking at underlying cellular and biological mechanisms associated with major injury.

For the purposes of this review we adopted an understanding of complex trauma research as one akin to ‘major trauma’ and based on a description provided by the National Audit Office (NAO): “major trauma describes serious and often multiple injuries where there is a strong possibility of death or disability” (NAO, 2010a, p. 4). We found early on that there are different terms used in the area of ‘trauma’ research, and although terms sometimes are used interchangeably, they do not always mean the same thing. These definitional issues are not insignificant to analysis of the funding landscape and we comment on the implications of this throughout the report.

In this review we map the UK funding landscape for current research in the five priority areas of complex trauma at the pre-hospital and early in-hospital phase; assess the nature and quality of research being conducted; and identify gaps in the UK research landscape and make recommendations about priorities, opportunities and future directions. We took a multi-staged approach to the research, including a review of public and private sector research and development (R&D) statistics, a review of expenditure in UK public and private sector organisations, interviews with selected experts and a review of international in civilian and military trauma research in Israel and the USA.

Our findings indicate that within the UK, funding for complex trauma research is in the order of £15m across public and private funders. Approximately £10m of this is from public R&D funding, most of which is provided through the National Institute for Health Research (NIHR) or the MoD. A further £5m is provided by private charities and companies. Investment by pharmaceutical companies was difficult to estimate and remains unknown. Therefore, overall research expenditure on complex trauma is fewer than 1% of total UK public expenditure on health research, which has been previously estimated by RAND Europe to be in the order of £1.7 billion. Of the complex trauma research we identified as being funded within the UK, the majority is being done in the area of ‘acute injury’, although there is also significant activity in the area of regenerative medicine.

Due to the definitional issues around complex trauma research, we did not include research focused solely on ‘trauma’ or ‘injury’, as this is not the same as complex trauma research. The context of complex trauma in a clinical setting means that the application of techniques developed elsewhere, for example in orthopaedic research, may need to be adapted when applied to complex trauma patients. Thus, although research findings can be ‘exported’ or ‘imported’ across health research fields, this translational space needs to be strengthened and closely monitored if a long-term funding strategy is to be developed.

Our review suggests that there are fewer than five centres capable of handling large-scale complex trauma clinical research studies in the UK. This has knock-on effects for the translation of clinical research into the marketplace. Additional challenges in clinical translation include patient enrolment under critical care circumstances, difficulties in obtaining informed consent, the ‘24/7’ nature of patient arrival, and lack of researcher capacity and capability. Moreover, although pockets of good research do exist, strategic thinking is a problem and there is a research gap between military and civilian contexts. Our analysis of research in Israel and the USA suggests that internationally, complex trauma is also a niche area of research, but civilian and military sectors seem better integrated in Israel and the USA than in the UK.

Our findings have led us to draw the following conclusions and recommendations.

- Complex trauma is an ‘orphan’ and niche area of research that is disproportionately resourced in comparison to the burden of the disease.
- If a comprehensive research strategy or programme is established, ‘complex trauma’ needs to be clearly defined and protected against mission creep.
- Findings from other health and biomedical research fields are relevant to complex trauma, but this translational space needs to be strengthened and monitored.
- There is a lack of strategic coordination among researchers and funders, resulting in missed opportunities for joint learning and, ultimately, patient impact.
- There are barriers to clinical trials and translation of research findings, mainly due to institutional and infrastructure issues within the field.
- There is significant potential for integrating the civilian and military health research sectors, but relationships between them will take time to build.
- Identification of short, medium and long-term goals will aid integration between the military and civilian research sectors. In the short term there is a need to identify existing research gaps, maximise synergies and understand the state of each others’ (and joint) markets. In the medium to long term we recommend establishing mechanisms to translate research from the one context to the other, for example, joint research and training programmes at major trauma centres around the country.
- A research strategy for complex trauma will have to address two key issues: (1) capacity and capability building; and (2) incentivising collaboration across the military and civilian sectors so that joint working does actually occur.
- Future mapping research can inform the development of strategy in this area. More in-depth mapping should review the state of the field, and compare this

against clinical needs and strategic priorities. In particular, a detailed bibliometric analysis could help to characterise, define and evaluate performance of the field.