

Biography

Laura Cochrane is currently the Senior Director of Global Medical Affairs for Emergent BioSolutions based in the UK with a long history in CBRN research and development. Early in her career, following her studies at the Royal Military College of Canada in Chemical and Materials Engineering she was furthered her studies with the Department of National Defence in Aerospace engineering later moving across Canada in a CBRN research capacity.

She continued her working career in CBRN across industry and cross government collaborations in research roles across partnerships with various institutions including Department of Foreign Affairs Canada, Defence Research Canada, EU Commission and Global Defence programs across NATO partner member states.

She has an extensive career in research development, enhanced by post graduate education at St. Andrews University with recent certifications at Cambridge University and London School of Economics. She also continues to maintain OPCW training with the Asser Institute in Disarmament and Non-proliferation of WMDs.

She is currently supporting activities in Biological and Chemical Threat medical preparedness with Emergent BioSolutions, and continues to publish, lecture, including support to the NATO Biological Warfare Defence Awareness Course. and speak on medical countermeasures across high risk pathogen disease areas, including but not limited to Smallpox, Anthrax, Botulism and Chemical Warfare threats.

Corresponding Author: Laura Cochrane

Corresponding Author's email:

CochraneL@ebsi.com

The Utility of Health System Insights in the Australian Defence Force

Dr Jessica Marshall, Tomy Hwang, Emily Whitney, Poornima Senthuren, Clare Whittingham, Shufang Zheng, Michael Corlis, Jason Kerr, Paul Grant, Dr Shahd Al-Janabi, Alison Harriden, BRIG Isaac Seidl

1 Department Of Defence, Australia

Abstract

People are fundamental to Defence capability; poor health, illness or injury may pose a risk to a serving member's overall health readiness,

which consequently impacts upon the operational capability of the Australian Defence Force (ADF). Adoption and utilisation of data may be one way the ADF can reduce the likelihood of these risks. Data in the ADF healthcare context refers to volumes of medical administrative data (i.e., data routinely collected as part of care delivery) created by the adoption of electronic health systems. Collection of such large volumes of data - for conversion into relevant critical insights - has until recently been too costly and time consuming, thus preventing its use for predicting and solving health-related problems. Data - when used accurately and proactively - has the potential to improve access to and quality of care for ADF members by allowing for: (a) identification of health risk areas; (b) monitoring and evaluation of health initiatives; and (c) assessments of force health readiness. In short, the introduction of the Defence e-Health System in 2014 may be instrumental not only for assisting the ADF in maintaining medical records and delivering integrated health care, but also in provision of timely, reliable, and evidence-based information for decision-making. The purpose of this presentation is to outline one process by which Defence has begun to incorporate data into its health system in order to derive insights in line with its Digital Health Strategy.

Acknowledging the different health data and analytic needs across Defence, the capabilities of data processing can be organised into four quadrants, ranging from reactive to proactive reporting (low to high reporting maturity) and health system data to health system insights (low to high analytics maturity). This organisational flow allows flexibility to move from raw data description to hypothesis testing - informing decision making proactively - on an as needs basis.

Actioning this flow, begins with the collection of raw, unprocessed health system data (e.g., a log of an ADF member presenting at a clinic because of an injury). This type of product has the lowest level of analytics maturity and - alone - is of little value because it requires contextual, background and technical knowledge to aggregate and manipulate into information. To derive value from this raw data, the consecutive step involves querying, mining and exporting of historical data to shape reactive reporting. This form of reporting primarily relies on descriptive analytics (e.g., how many ADF members presented with the same injury in 2021?). We posit that such reporting is useful in aiding strategic communications: characterising and surveying the health of the force - promoting population health statistics and identifying potential health priorities.

Diving deeper, utilising advanced (e.g., regression) and new (e.g., machine learning) analytical methods provides the capability to test hypotheses to derive insights. This proactive, higher level of analytics maturity works to support ongoing monitoring and surveillance efforts, diagnostics (e.g., identifying injury aetiology), preventative medicine (e.g., identifying risk factors for injury), and reduction of adverse events (e.g., flagging potential adverse reactions). Predictive reporting may prevent illness and injury through intervention with forward looking clinical and policy decision-making, therefore potentially reducing medical discharge and improving quality-adjusted life years for ex-serving members.

ADF member health and Defence health service delivery enables/supports overall Force readiness and capability. Combining data analytics with outcome driven insights further support the enabling of capability and in maintaining a ready, responsive and resilient Defence Force. With these insights, the ADF can continue to accurately report and predict the health status of its members on a whole-of-ADF level, while making data driven policy decisions focussed on statistically proven priority areas.

Biography

Dr Jessica Marshall is a recent graduate from Melbourne University, where she completed her Doctorate investigating the genetic and pharmacological targeting of Heat Shock Protein 72 on a novel mouse model of Alzheimer's disease. Her research was funded by the Australian Dementia Research Foundation, in affiliation with the Baker Heart and Diabetes Institute and the Florey Institute of Neuroscience and Mental Health. Since joining the Department of Defence, Jessica has worked in the National Security space as a Policy Officer, before moving into the Joint Health Command, as a Health Insights Officer.

Corresponding Author: Jessica Marshall

Corresponding Author's email:

jessica.marshall2@defence.gov.au

Thematic Analysis of Remote Programme Management and its Potential Application to Best Practice in Defence Global Healthcare Engagement

Dr Laura McCrae^{1,2}, Colonel Simon Horne^{1,3},
Dr Leo Wood⁴

1 Academic Centre of Defence Healthcare Engagement, UK

2 Royal Navy, UK

3 British Army, UK

4 NHS Lanarkshire, UK

Abstract

Purpose:

Defence Healthcare Engagement (DHE) requires significant collaboration between stakeholders to develop programmes and increase UK influence internationally. Remote Programme Management (RPM) is a civilian mitigation strategy used in the humanitarian sector. The COVID19 pandemic has caused unparalleled disruption to international travel and compelled DHE activity not in direct response to COVID to be mainly conducted remotely.

Method:

In 2020 the authors undertook a literature search of all open access relevant articles on the topic of RPM. The authors applied a qualitative thematic analysis to these articles, using codes to extract key themes.

Results:

Eighteen articles relating to RPM covering international organisations, governmental organisations non-governmental organisations were reviewed by the authors. The thematic analysis highlighted key themes running throughout the literature.

RPM was indicated predominantly for security concerns; however, access restriction, usually governmental, was also commonly cited.

Several different strategies were featured throughout the reviewed literature:

- Develop relationships at a strategic level
- Understand the local networks and their capacity
- Develop community acceptance of the programme
- Develop community partnership arrangements

It is important to anticipate a high likelihood of requiring RPM and accommodating it early within