BACKGROUND

The wound care burden on low- and middle-income countries (LMICs) is steadily increasing due to motorisation of transport, cardiovascular disease, diabetes, violence, armed conflict, increasing cancer rates and disasters. Modern care of chronic and traumatic wounds relies heavily on the availability of antibiotics, sophisticated wound dressings and devices such as for hydrosurgical debridement or negative pressure therapy. However, resource poor health care providers in LMICs have limited access to medicine, modern dressings and medical devices.

MAGGOT DEBRIDEMENT THERAPY

For compromised health care environments, wound care options are required that are relatively cheap, easy to use and have multiple therapeutic benefits. One such option is Maggot Debridement Therapy (MDT) where living fly larvae are used to remove dead tissue, to control infection and to stimulate wound healing (Sherman, 2009).

KNOWLEDGE GAPS

Our review of the literature has revealed that there is a growing body of work demonstrating the efficacy of MDT for the treatment of chronic wounds in modern western wound care settings, and case reports on MDT for the treatment of acute, infected or fungating wounds. However, there is little literature discussing the use of MDT in resource-poor healthcare settings.

More concerning is the paucity of literature discussing the logistics and supply chain management issues pertinent to MDT. This is troubling because uptake of MDT in LMIC settings depends on reliable, efficient and affordable supply of medical maggots. Moreover, many healthcare professionals maintain a general dislike and distrust of MDT.

In summary, research is needed that:
- demonstrates MDT efficacy in the treatment of wounds other than ulcers;
- explores the supply chain opportunities in compromised healthcare settings; and
- explores the economic, social and psychological barriers to the uptake of MDT by healthcare professionals.

RESEARCH

Our research seeks to understand the supply chain management opportunities and challenges presented by MDT in humanitarian aid, and it includes:
- a systematic review of the literature relevant to the MDT supply chain;
- the development of an MDT supply chain model using Business Process Model Notation (BPMN);
- demonstration of the benefits of MDT in disaster medicine (Stadler et al., 2016);
- a multiple case study of four MDT supply chains in Kenya, Africa, involving semi-structured interviews with key supply chain stakeholders; and
- an MDT supply chain trial to test the four case study supply chains by performing production and shipment trials with live medical maggots.

ANALYSIS

Qualitative data will be analysed with the documentary method (Trautrims et al., 2012) and two additional data analysis steps will complement this approach, including modelling of supply chain information with BPMN and analysis of emerging supply chain characteristics through systems thinking. Quantitative data will be subject to statistical analysis and serves to triangulate the qualitative research findings.

References