THE EMERGENCY FIRST AID RESPONDER (EFAR) SYSTEM

2014 RESEARCH AND PROJECT AGENDA

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Model Development

- Sun JH, Wallis LA. The emergency first aid responder system model: using community members to assist life-threatening emergencies in violent, developing areas of need. Emergency Medicine Journal, 2012;29:673-678 doi:10.1136/emermed-2011-200271.

- Sun JH, Shing R, Twomey M, Wallis LA. A strategy to implement and support pre-hospital emergency medical systems in developing, resource-constrained areas of South Africa. Injury, 2012, doi:10.1016/j.injury.2012.08.015.

Training and Education

- Sun JH, Wallis LA. Learning and retention of emergency first aid skills in a violent, developing South African township. Emergency Medicine Journal, 2012; doi:10.1136/emermed-2011-200619.

Effect and Outcome Assessment

- Sun JH, Wallis LA. The psychological effects of widespread emergencies and a first responder training course on a violent, developing community. African Journal of Emergency Medicine, 2011;1(4):166-173.

- Sun JH, Twomey M, Tran J, Wallis LA. The need for a usable assessment tool to analyse the efficacy of emergency care systems in developing countries: proposal to use the TEWS methodology. Emergency Medicine Journal, 2011; doi:10.1136/emermed-2011-200429.

EFAR System Expansion

- Best strategies and health policies for expansion of the EFAR system on a provincial and national level. LEAD: Edwin Beausoleil. STATUS: Project design by January 2014. Edwin to begin PhD in Emergency Medicine at UCT in January 2014.

- Integration of EFAR with MOD (Mass Opportunity and Development) curriculums to teach primary and secondary school learners. LEAD: Michele Twomey and Marcus Slingers. STATUS: Currently training MOD coaches, have trained ~45 out of goal of 200. Train the Trainer needs to be done.

- Integration of EFAR with ECD (Early Child Development) to train crèche/nursery workers to handle paediatric emergencies. LEAD: Derrick Evans. STATUS: Paediatric needs assessment completed, curriculum design and training of Northlink trainers needs to be done.

- Incremental expansion of the EFAR System across the Western Cape province. LEAD: Marcus Slingers and Michele Twomey. STATUS: New sites routinely added.

- Introduction of EFAR to Zambia. LEAD: Michele Twomey. STATUS: Training begun.

Model Development

- Using mobile phone technology and CAD software to coordinate and dispatch EFAR response. LEAD: David Crockett, David Suwondo, and Julian Fleming. STATUS: Pilot completed. CAD software being developed until June 2014, with

official study to take place from June to August 2014, and launch thereafter.

- Practices and methods of community based organisations in managing the EFAR system at the community level. LEAD: Matthew Carter. STATUS: Project design by January 2014. Matt still to confirm if he will pursue the MSc in Emergency Medicine at UCT in January 2014.

EFAR Support and Services

- Using EFARs to promote health literacy in the community. LEAD: Jenny Bress. STATUS: Data collection underway. Expected completion of data collection by June 2014.

- Career development for EFARs: providing additional training as a pathway for selected EFARs to become professionals in the EMS or to make themselves more employable in other fields. LEAD: Marcus Slingers. Status: Level 1 & 3 First Aid and Basic Life Support courses offered to EFARs nominated by their CBO. ECT training scholarships available. Need to strengthen this program.

- EFAR "Khan Academy" instructional training videos to supplement on-site clinical skill training. LEAD: Marcus Slingers. STATUS: Agreement made with Stellenbosch University Visual Lab, need to write script and prepare materials, to begin filming next year using EFARs as actors.

- Using social media (ie: Facebook, Twitter, EFAR webpage, blogging) to promote EFAR. LEAD: Simonay de Vos. STATUS: Need to begin setting up the various sites.

Observational and Outcome Research

- "Understanding motivation in professional and lay emergency medical care providers: a case study of Manenberg, South Africa." LEAD: Talia Mahoney. STATUS: Analysis and write-up underway. Expected done by June 2014.

- Community member and healthcare provider perceptions of healthcare access and the EFAR system. LEAD: Sabrina Layne. STATUS: Analysis and write-up underway. Expected completion by June 2014.

- The need and effect of trauma counsellors for EFARs and witnesses/victims of violent emergencies. LEAD: Damian Apollo and Amani Green. STATUS: Project design underway. Study to be done between June and August 2014.

- Location, times, details, and outcomes of burns in the Cape Flats. LEAD: Mackenzie Wilson. STATUS: Analysis and write-up underway. Expected completion June 2014.

- Recording, mapping, and database-ing of emergency incidents that EFARs respond to. LEAD: Gerry Gordon (at community level in Lavender Hill) and Davey Crockett/Julian Fleming/Mark Muwanguzi (preparing tech for automated/editable Google mapping). STATUS: Lavender Hill already collecting data via incident report forms, Davey and Mark to discuss automated data collection from SMS dispatch to populate data on www.efardispatch.com that will be editable by authorized users.

- Development of a standardized prehospital needs assessment for developing conditions. LEAD: Morgan Broccoli. STATUS: Potential tools being researched, to be piloted in Zambia in January 2014.

2014 RESEARCH AND PROJECT NEEDS

The EFAR System is constantly evolving and still in development. Overall, the general structure and model has been laid out, but work is needed to flesh out and analyse its different parts in more detail. For example, in the general model "Communications" to communicate with and dispatch EFARs is included, but David Crockett's work with developing the SMS software helped to

flesh out what the communications component actually was. At a future date, the communications that Crockett developed can be observed and analysed to see how it is working and what the outcomes were.

In the two figures in the appendix, every component can be a focus for research and development, including the arrows of management and delivery of care, and any suggested research or projects are welcome. In particular though, the following components are a high priority for research and development for 2014:

- Development of Communications to dispatch and coordinate EFAR response. Integration with the CAD software.
- Best practices for the Governing Body to manage the EFAR System, including how to best expand it over a large region and implement into novel communities (ex: more expertise in expanding to rural and foreign areas is needed).
- Best practices for the Community Based Organisation to manage the EFAR System at the community level, including fostering EFAR motivation, community buy-in, and ways to finance the system at the community level.
- Sustainability and ways to finance the EFAR system, what should be financed, and a cost-benefit analysis.
- Strengthening integration of the EFAR system with the greater EMS, including in management, response, and training.
- Search for methods to assess effectiveness of prehospital emergency care in developing conditions, ideally one that assesses morbidity and mortality, which to this day remains elusive. Possible leads include validating the TEWS Methodology, or developing a new method.

Other avenues for projects include the routine expansion of the EFAR system to new areas (or in new ways such as via the ECD program), development and analysis of new components of the EFAR system (ex: Trauma Counselors, Support Group sessions, Health Literacy), needs assessments, secondary outcomes (ex: psychological effects), and training/education development and practices. In addition, we fully welcome any other suggestions or ideas for research or projects (even if they are not listed here), and can help accommodate any person's particular interests or skills in designing their own new project.

Legend (top diagram):

- - - → Support/Management
→ Delivery of Care
■ Emergency Scene
Professional Level
Communications
Community Level

Top diagram labels:

Ambulance / Transporter

Governing Body (ex: EMS, Hospital, Health Dept., University)

Bystanders

Block EFARs

EMERGENCY SCENE

Bystanders

Communications (ex: CAD, SMS Smartphone App, Community Organizer)

Head EFAR / Station EFARs

Community Based Organization (ex: NGO, police, community centre, school)

Bottom diagram:

ONGOING

| Recruitment of Community Based Organisation | Needs and Infrastructure Assessment | Training design, Model adaptation (if necessary) | Train Instructors (if necessary) | Train Block EFARs | Specialize Station/Head EFARs |

Emergency need

Region develops

Formalize EFAR system

EXPAND TO A NEW SUB-REGION

Research and EFAR Support

Resources for communications?

Resources for Transporters or Ambulances?

NO

EFARs transport patient to the hospital on their own, using the quickest means available.

NO

EFARs transport patient to nearest Transporter/Ambulance, who will then transport the patient to the hospital. Can use public transportation if quicker.

YES

Organize agreement with public transportation for them to provide transportation when called or messaged.

NO

Resources for Transporters or Ambulances?

YES

Transporter/Ambulance transports patient to the hospital when called or messaged. Can use public transportation if quicker.

YES