

EDITORIAL

PERCEPTIONS OF EMERGENCY MEDICINE AND ACUTE CARE IN A COHORT OF NON-EMERGENCY MEDICINE HEALTH PROVIDERS IN MYANMAR

AUTHORS: Corey B. Bills¹; Peter Acker²; Tina McGovern³; Rebecca Walker⁴; Htoo Ohn⁵

¹ University of California San Francisco ORCID 0000-0002-3456-6008

² Stanford University; Swaminatha V Mahadevan⁶

³ Kaiser Permanente San Diego Medical Center

⁴ Stanford University

⁵ Golden Zaneke

⁶ Stanford University

Corresponding Author: cbills@gmail.com

<https://doi.org/10.55634/1.2.5>

SUMMARY

Currently, Myanmar does not have a nationalized emergency care or emergency medical services (EMS) system. The provision of emergency medicine (EM) education to physicians without such training is essential to address this unmet need for high quality emergency care.

We queried a group of healthcare providers in Myanmar about their experience, understanding and perceptions regarding the current and future needs for EM training in their country.

Methods A 34-question survey was administered to a convenience sample of healthcare workers from two primary metropolitan areas in Myanmar to assess exposure to and understanding of emergency and pre-hospital care in the country.

Results 236 of 290 (81% response rate) individuals attending one of two full-day symposia on emergency medicine completed the survey.

The majority of respondents were female (n=138, 59%), physicians (n=171, 74%), and working in private practice (n=148, 64%).

A majority of respondents (n=133, 57%) spent some to all of their clinical time providing acute and emergency care however 83.5% (n=192) of all surveyed reported little or no past training in emergency care; and those who have received prior emergency medicine training were more likely to care for emergencies (>2 weeks training; p=.052). 81% (n=184) thought the development of emergency and acute care services should be a public health priority.

Although this subset of surveyed health practitioners commonly provides acute care, providers in Myanmar may not have adequate training in emergency medicine.

Continued efforts to train Myanmar's existing healthcare workforce in emergency and acute care should be emphasized.

KEY WORDS: Emergency medicine, Acute care, Myanmar.

BACKGROUND

Myanmar (Burma) has struggled through 60 years of military rule and prolonged ethnic conflict. The country's Human Development Index was 0.556 in 2016, ranking 145 of 187 countries globally.¹

Myanmar's medical system suffers from a lack of health infrastructure and human resources, with a mere 0.9 hospital beds and 0.5 physicians per 1000 citizens.²

The country also has one of the world's lowest health expenditures per capita.

In 2000, the World Health Organization ranked Myanmar's health system 190th out of 191 countries.³

These challenges, amongst others, have led to poor performance in a number of health indicator categories.^{4,5}

Though many aspects of Myanmar's healthcare system require attention, enhancing emergency care is a focus of future development, and will play a key role in achieving the Sustainable Development Goals (SDGs).⁶

The 72nd World Health Assembly has similarly made emergency systems a focus of development.⁷ The overall burden of acute medical emergencies is particularly notable in Myanmar.

Injuries from road traffic accidents (RTAs) are the leading cause of morbidity and second highest cause of mortality.⁸

While emergency medical systems have been developed in several Southeast Asian countries, emergency care is still in its infancy in Myanmar.⁹

Myanmar has not developed a coordinated pre-hospital service, and opportunities for providers to gain emergency care training and skills are very limited.¹⁰

After Cyclone Nargis in 2008, the independent Myanmar Medical Association (MMA) recognized the need for increased medical training in acute care.¹¹

The 2013 ASEAN games, hosted in the country's capital Naypyidaw, highlighted further gaps in pre-hospital and emergency care in the country.¹²

Recent efforts have galvanized around the development of the first postgraduate emergency medicine training programs in the country, of which there are currently two.¹³

Although the recent establishment of these postgraduate emergency medicine training programs holds promise for the future, a significant unmet need for trained emergency care providers currently exists.

To help target further emergency care systems development efforts in Myanmar, we sought to better understand the current frequency with which Myanmar's providers are administering emergency care

relative to their exposure to emergency medicine training.

We also sought to gain their perceptions of the current state of emergency care and future emergency medical system development priorities in the country.

METHODS

A 34-question survey of a convenience sample of health workers from two primary metropolitan areas in Myanmar was used to assess demographic information, provider exposure to and understanding of emergency and pre-hospital care in the country.

This study was approved by the hospital institutional review board and deemed to be exempt from formal informed consent.

In January 2015, two one-day symposia on emergency medicine were held in two separate cities in Myanmar: Mandalay and Yangon (Rangoon).

The symposia were open to all participants—regardless of prior training or current place of employment; however, the educational content of the symposia was primarily intended for currently practicing physicians, with little to no prior formal training emergency medicine.

The purpose of the symposia, held in collaboration with the University of Medicine (Mandalay) and University of Medicine 1 (Yangon), were to introduce core topics in emergency and acute care medicine to existing practitioners in Myanmar.

Content delivery occurred through both didactic and video-based learning modalities.

Survey participants were identified in the following fashion.

Upon arrival to the symposia, all attendees over the age of 18, regardless of employment, age or ethnicity were asked to fill out a short survey.

Participation in the survey was entirely voluntary and had no bearing on participation in the course.

Furthermore, no incentives, financial or otherwise, were offered to attendees in exchange for participation.

All information was presented in English.

No identifying data regarding the respondent's name, program, geographic location (aside from city of employment), or patient names were gathered. Participants were asked demographic information, including age, gender and type of practice.

Additional question topics were driven by consensus-based guidelines for research and development of global acute and emergency care services.¹⁴

Questions included self-reported exposure to emergency medicine; the current state of acute care provision in Myanmar, including availability of pre-hospital services; and, the expected role of emergency and acute care services in the future.

Where appropriate, we included free-text response boxes to capture any additional comments respondents wished to make.

Data were compiled electronically, extracted, and analyzed via Stata (Version 13, College Station, TX). We used one-way analyses to compare reported levels of exposure of emergency medicine to other variables.

Comparisons at the univariate level stratified on prior emergency training were completed with chi squared and t-tests where appropriate. We considered statistically significant results with p-values of 0.05 or less.

RESULTS

In total, 236 of 290 (81% response rate) individuals attending one of two full-day symposia on emergency medicine filled out the survey.

The majority of respondents were female (n=138, 59%) and physicians (n=171, 74%).

Most attendees reported prior training as general practitioners (n=117, 53%) and were currently employed in private practice (n=148, 64%) (Table 1).

Demographics of practitioners attending two symposia on emergency and acute care, Myanmar January 2015). Demographics of practitioners attending two symposia on emergency and acute care, Myanmar, January 2015). A majority (n=133, 56.5%) spent some to all of their clinical time each month providing care to patients identified as having emergency medical conditions (Table 2).

Table 1. DEMOGRAPHICS OF PRACTITIONERS ATTENDING TWO SYMPOSIA ON EMERGENCY AND ACUTE CARE, MYANMAR JANUARY 2015.

	N (Avg)	% (SD)
Age	28.0	6.0
Gender		
Female	138	58,5
Male	98	41,5
Occupation		
Physician	171	73,7
Medical Student	43	18,5
Other	18	7,8
Training		
General Practitioner	117	52,9
Internal Medicine	63	28,5
Other	41	18,6
City of practice		
Mandalay	112	47,5
Yangon	122	51,7
Other	2	0,8
Type of Health Facility		
Public	85	36,5
Private	148	63,5
Type of Health Facility		
Health Clinic	56	26,4
Health Center	50	23,6
District Hospital	15	7,1
Referral/Tertiary Hospital	62	29,2
Other	29	13,7

Table 2. SELF-REPORTED EXPOSURE TO EMERGENCY MEDICINE, ACUTE CARE AND PREHOSPITAL SYSTEMS AMONGST PRACTITIONERS ATTENDING TWO SYMPOSIA ON EMERGENCY AND ACUTE CARE, MYANMAR JANUARY 2015.

	N (Avg)	% (SD)
Acute and emergency care		
Provides emergency care often		
None	15	6.4
Rarely (1-3 cases/month)	87	37.0
Sometimes (3-10 cases/month)	92	39.1
Frequently (10-20 cases/month)	25	10.6
All of the time (>20 cases/month)	16	6.8
Have you ever received EM training		
No training	81	35.2
Minimal (1d-2wk course)	98	42.6
Moderate (2 weeks-1 month)	13	5.7
Extensive (>1 month)	38	16.5
Overall quality of acute care in Myanmar		
Poor	56	23.9
Fair	88	37.6
Average	79	33.8
Good	10	4.3
Excellent	1	0.4
Should physicians be incentivized to be trained in emergency medicine		
Yes	214	94.3
No	13	5.7
Barriers preventing providers from obtaining emergency care training (does not =100%)		
Lack of training or teaching programs	117	50.6
Lack of revenue generating opportunities	37	16.0
Lack of employment opportunities in emergency medicine/acute care	77	33.3
Lack of provider interest	17	7.4
Current job requirements and hours limits time for training	103	44.6
Should emergency care services be a priority in Myanmar		
Strongly Disagree	14	6.2
Disagree	4	1.8
Neutral	25	11.0
Agree	119	52.4
Strongly agree	65	28.6

Should non-physician entities be utilized to provide/supplement acute/emergency care

Strongly Disagree	18	7.8
Disagree	6	2.6
Neutral	17	7.3
Agree	114	49.1
Strongly agree	77	33.2

Where should efforts be initially focused to improve the overall quality of emergency and acute care

Public education	49	21.4
Quality of pre-hospital care	62	27.1
Cost of care	5	2.2
Improved wait times	3	1.3
Access to emergency care equipment	20	8.7
Improved healthcare facilities	36	15.7
Access to medications	1	0,4
Physician training	9	3.9
More than one of the above	44	19.2

Pre-hospital and transfer processes**Are there protocols for the referral of patients**

Yes	160	71,4
No	64	28.6

Primary Mode of Transport

Ambulance	140	59,6
Taxi	64	27.2
Private car or motorcycle	30	12.8
Other	1	0,4

Are ambulances available at your health facility

Yes	179	76.2
No	56	23.8

Self-reported exposure to emergency medicine, acute care and pre-hospital systems amongst practitioners attending two symposia on emergency and acute care, Myanmar January 2015).

Self-reported exposure to emergency medicine, acute care and pre-hospital systems amongst practitioners attending two symposia on emergency and acute care, Myanmar, January 2015). However, a large majority of respondents (n=192, 84%) reported little or no formal training (<2 weeks of training) in emergency and acute care. Even though participants reported little formal exposure to preparation in this field, they perceived the development of emergency and acute care services to be a public health priority in the country (n= 184, 81%).

When asked to assess healthcare in Myanmar, respondents rated the overall quality of acute and emergency care in their country as fair (median 2 IQR+/-2-3 on a

5-point Likert-scale).

A large proportion (n=214, 94%) felt that existing physicians should be incentivized to undertake more training in emergency medicine. In open response, several remarked that taking time out from existing practice to engage in emergency medicine training would be a financial burden, unless financial incentives were provided for attending such trainings.

Additional factors noted by participants limiting access to emergency care training in Myanmar included:

1. lack of specialized training programs
2. current job requirements and hours would limit time available for emergency medicine training; and
3. lack of suitable employment opportunities in emergency medicine/acute care (listed by 51, 45, and 33% of respondents, respectively).

Given the limited physician workforce and time constr-

ints faced by current physician providers in the country, respondents were asked whether non-physician entities could be enlisted to provide emergency and acute care services: 82% (n=191) agreed that non-physicians should be utilized to provide direct patient care.

Respondents were also asked to self-report on the current status of prehospital and patient referral practices in the country. Systems for inter-facility referral were largely present at the majority of health facilities.

Seventy-one percent self-reported use of transfer protocols in their work environment and 60% reported ambulances as the primary mode of patient transport (with 76% noting ambulance availability at their home health facilities for inter-facility transports).

When asked where efforts should be initially focused to improve the overall quality of emergency and acute care, the most common answer was to improve the quality of pre-hospital care (n=62, 27%).

Health workers with training in emergency medicine > 2 weeks were more likely to care for emergencies on a regular basis and were also more likely to provide verbal sign-out on inter-hospital transfer (p=.05, p=.02, respectively). However, prior training had no bearing on the following items: opinions of overall emergency care, utilization of ambulance for transfer, the role of pre-hospital care in improving overall acute and emergency care, as well as whether the building of emergency services, systems and training should be a priority in Myanmar.

DISCUSSION

Myanmar, like other low and middle-income countries (LMICs), disproportionately suffers reduced life expectancy and quality of life secondary to emergency medical conditions.

These disparities may be related to general inadequacies in the country's emergency care system, a system which faces many challenges, but particularly a notable lack of providers trained to provide quality emergency care.¹⁵⁻¹⁷ Based on the results of this study, a significant proportion of respondents report that they regularly provide emergency care even though they lack formal training.

Study participants also noted several significant barriers to obtaining further emergency care skills and knowledge including a lack of educational opportunities for specialty training and limited time to pursue further training secondary to their current clinical commitments.

Respondents also perceived insufficient incentives for obtaining emergency care training and a scarcity of employment opportunities in the field.

Similar to providers of emergency care in other LMICs, most of the participants we surveyed lacked specific training in emergency care.¹⁸

This finding is not surprising given that LMICs suffer significant shortages in health workers.¹⁹ Myanmar specifically faces a large health workforce crisis as designated by WHO, with only 1.3 health workers per 1000 population.²

These shortages are also more pronounced in the field of emergency care, where education and incentives for providing care are lacking.

In the past, educational opportunities and salaries for emergency care health workers have not been prioritized.

Moreover, most universities do not include emergency medicine in their medical school curricula nor in graduate medical training.

Although Myanmar's current emergency system faces many challenges, a unique period of change has opened. Though the development of emergency health systems in Myanmar remains in its infancy, many physicians recognize emergency medicine's importance as integral to the improvement of Myanmar's overall healthcare system.

The overwhelming majority (>80%) of polled providers felt that emergency medicine development should be made a public health priority.

Myanmar is similar to many other LMICs in that emergency medicine is not yet well incorporated into the healthcare and formal medical education systems; however, this survey identifies a number of viable routes forward. First, existing practitioner's emergency care skills and knowledge should be enhanced through well coordinated and incentivized training programs.

Given the large workforce shortages known in Myanmar, training should focus on both physician and non-physician providers (through so-called task-shifting).

Second, additional emergency medicine education and training opportunities should be developed through existing university systems, during both the medical student and postgraduate period. Recently, the Ministry of Health and the private health sector have both committed to the development of emergency medicine education at all levels.²⁰

Third, incentives for physician education and recruitment into emergency and acute care fields should be encouraged.

In the past, Myanmar has been hampered by a lack of investment in health services with the country spending no more than 2% of its GDP on healthcare during the period between 2000 and 2013,²¹ lagging behind their regional neighbors Lao and Cambodia, who spent 4.5% and 5.6% of their GDP on healthcare in 2013, respectively.²² Although Myanmar has begun investing more in health, the country's overall health expenditure per capita still falls well below the average for lower middle income

countries (59 versus 81 US dollars as of 2015).²³

Training and education opportunities for currently practicing health providers take them away from their primary duties and revenue generating activities.

Until Myanmar supports a defined career path and reliable employment for those who pursue emergency medicine training, the return on these individuals' investment is far from guaranteed. Respondents of this survey were acutely aware of this, as 95% felt providers should be incentivized to pursue training and employment in emergency medicine.

The system will likely struggle to attract and retain quality providers unless clear financing for these types of educational pursuit and career opportunities are institutionalized.

This study has several limitations.

Overall there is an inherent bias in the sampling process used in this survey.

We employed a convenience sample rather than a random sample and surveyed those who self-selected as likely interested in emergency medicine and acute care given their voluntary attendance at a symposium on the subject.

It's reasonable to assume that those that did not come to the symposia may have been less interested in emergency medicine and by-proxy see less value in making emergency care a priority for the healthcare in Myanmar.

At the same time, the large number of practitioners who registered for, showed up to and completed a voluntary survey on the subject represents a core collective to help build emergency medicine in the country in the future.

CONCLUSIONS

A majority of those surveyed provide care to patients identified as having emergency medical conditions.

Yet, most respondents reported little or no formal training in emergency and acute care.

LMIC countries, like Myanmar, shoulder a disproportionate burden of morbidity and mortality secondary to road traffic accidents and other acute illnesses amenable to emergency intervention, and will likely benefit from increased availability of practitioners with training in emergency care. Efforts to train existing workforce through targeted opportunities, improved financial incentives to retain providers, and increased access to acute care through enhanced pre-hospital care systems are necessary steps for improving outcomes of patients admitted by emergency conditions in Myanmar.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE:

All participants were approached and verbally consented to fill out the survey.

This study was reviewed by the Stanford University hospi-

tal institutional review board and deemed to be exempt.

Consent for publication

Not Applicable

Availability of data and material

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

CONFLICT OF INTEREST:

The authors declare that they have no competing interests

FUNDING

Funding was provided internally by Stanford University Department of Emergency Medicine Authors' contributions CB, PA, RW and SM conceived of the study design. CB, PA, TM and TO created the original survey design and implemented the survey.

CB and PA analyzed data and created an initial draft of the manuscript.

SM provided oversight and edits to the draft.

All authors read and approved the final manuscript.

ACKNOWLEDGEMENTS:

The authors would like to acknowledge Dr. Myat Noe for his assistance with data collection.

REFERENCES:

1. United Nations Development Project: Human Development Report 2016. New York; 2016.
2. Physicians (per 1000 People) Myanmar. World Health Organization's Global Health Workforce Statistics. (2019). Accessed April 9, 2019. https://data.worldbank.org/indicator/SH.MED.BEDS.ZS?locations=MM&year_high_desc=false.
3. World Health Organization: The World Health Report 2000-Health Systems: Improving Performance. WHO, Geneva, Switzerland; 2000.
4. Islam M: Progress towards achieving Millennium Development Goal 5 in South-East Asia. *British Journal of Obstetrics and Gynaecology*. 2011, 118:6–11. <https://doi.org/10.1111/j.14710528.2011.03108.x>
5. Myanmar Ministry of Health. Health statistics. (2015). Accessed: November 20, 2015: <http://www.moh.gov.mm/le/HEALTH%20STATISTICS.pdf>. N. General Assembly: The 2030 Agenda for Sustainable Development, Resolution A/RES/70/1. (2015). Accessed: April 27, 2017. http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/70/303
7. Seventy-Second World Health Assembly Provisional Agenda. "Emergency and trauma care Emergency care systems for universal health coverage: ensuring timely care for the acutely ill and injured." Accessed April 23, 2019. http://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_31-en.pdf. Myanmar Ministry of Health. Health statistics. (2015). Accessed: November 20, 2015: <http://www.moh.gov.mm/le/HEALTH%20STATISTICS.pdf>.
9. International Federation of Emergency Medicine. Member Organisations. (2015). Accessed: November 25, 2015: http://www.ifem.cc/About_IFEM/Membership1/IFEM_Member_Organisations1.aspx.
10. WHO Violence and Injury Prevention Programme. Developing Pre-Hospital Trauma Care approach for South East Asia. Report of an Intercountry consultation 2003 (Myanmar representative Prof. Kyaw Myint Naing). Available at: http://whqlibdoc.who.int/searo/2003/SEA_Injuries_4.pdf?ua=1. Accessed November 25, 2015
11. Primary Trauma Care Foundation. Primary Trauma Care in Myanmar. Course Report 2009. (2009). Accessed: November 25, 2015: <http://www.primarytraumacare.org/wpcontent/uploads/2011/09/PTC-Course-Report-Myanmar-April-2009.pdf>.
12. Myanmar Ministry of Health. Health Service Delivery; Curative Services. (2012). Accessed: November 25, 2015. http://www.searo.who.int/myanmar/documents/HealthinMyanmar_2012_4_healthcaresystem.pdf.
13. Phillips GA, Soe ZW, Kong JHB, and Curry C: Capacity building for emergency care: Training the first emergency specialists in Myanmar. *Emergency Medicine Australasia* : EMA. 2014, 26(6):618– 626. 1111/1742-6723.12297
14. Reynolds TA, Bisanzo M, Dworkis D, Hansoti B, Obermeyer Z, Seidenberg P, Hauswald M, Mowa H: Research priorities for data collection and management within global acute and emergency care systems. *Academic Emergency Medicine*. 2013, 20(12):1246-50. 1111/acem.12261
15. Razzak JA and Kellermann AL: Emergency medical care in developing countries: is it worthwhile? *Bulletin of the World Health Organization*. 2002, 80(11):900–905.
16. Goosen J, Bowley DM, Degiannis E, and Planı F: Trauma care systems in South Africa. *Injury*. 2003, 34(9):704-708.
17. Joshipura MK, Shah HS, Patel PR, Divatia PA, and Desai PM: Trauma care systems in India. *Injury*. 2003, 34(9):686–692.
18. Obermeyer Z, Abujaber S, Makar M, Stoll S, Kayden SR, Wallis LA, Reynolds TA; Acute Care Development Consortium. Emergency care in 59 low- and middle-income countries: a systematic review. *Bull World Health Organ*. 2015 Aug 1;93 (8):577-586G. doi: 10.2471/BLT.14.148338.
19. Crisp N, Chen L. Global supply of health professionals. *N Engl J Med*. 2014 Mar 6;370(10):950–7.
20. Emergency Live. Drafting Myanmar's emergency medical system. (September 2018). Accessed December 7, 2018. <https://www.emergency-live.com/news/drafting-myanmars-emergency-medicalsystem/>
21. "Current Health Expenditure Per Capita (Current US\$) Myanmar." World Bank Country Data. Accessed April 11, 2019. <https://data.worldbank.org/indicator/SH.XPD.CHEX.PC.CD?locations=MM>.
22. "Current Health Expenditure (% GDP) Myanmar, Lao, Cambodia." World Bank Country Data. Accessed April 11, 2019. https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=MM-LAKH&year_high_desc=false.
23. "Current Health Expenditure Per Capita (Current US\$) Myanmar, Lower Middle Income Countries." World Bank Country Data. Accessed April 11, 2019. <https://data.worldbank.org/indicator/SH.XPD.CHEX.PC.CD>