Exploring the Attitudes and Perceptions of Assistant and Registered Medical Officers Toward their Role in Health Care Delivery in Sri Lanka

By

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Thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in the Duke Global Health Institute in the Graduate School of Duke University

2012
ABSTRACT

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Abstract

The Assistant and Registered Medical Officers (AMO/RMOs) of Sri Lanka have held a major role in health care delivery, particularly in rural areas. The Sri Lankan government decided to discontinue their training program and phase out the profession completely, without conducting any research on what the impact of this policy decision may be.

Fifteen semi-structured interviews were conducted with a purposeful sample of practicing AMO/RMOs from May to July 2012 to gain qualitative preliminary data on how the AMO/RMO profession is viewed by those who work in it. Interviews were conducted primarily in English, with simultaneous translation into Sinhala by a research assistant where necessary. Interview transcripts were reviewed for repeated words and phrases, and overarching themes were drawn from these textual patterns.

Analysis of the transcribed interviews yielded themes regarding lack of educational and promotional opportunity, similarities and differences between RMOs and Medical Officers (MOs), barriers to quality of care, gaps in supervision, level of job satisfaction, the nature of working relationships with other health professions, and predictions about the future of the AMO/RMO profession.

This preliminary and exploratory data can be used to inform more comprehensive and objective research on the role and impact of AMO/RMOs. It can also inform policy decisions and recommendations regarding health workforce composition and shortage, task-shifting, and the use of mid-level providers.
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMO</td>
<td>Assistant Medical Officer</td>
</tr>
<tr>
<td>AMOIC</td>
<td>Assistant Medical Officer in Charge</td>
</tr>
<tr>
<td>DMO</td>
<td>District Medical Officer</td>
</tr>
<tr>
<td>MBBS</td>
<td>Bachelor of Medicine/Bachelor of Surgery; “MBBS doctor” used interchangeably with “physician”, “medical officer”, and “consultant” in this paper</td>
</tr>
<tr>
<td>MO</td>
<td>Medical Officer</td>
</tr>
<tr>
<td>MOIC</td>
<td>Medical Officer in Charge</td>
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<tr>
<td>OPD</td>
<td>Outpatient Department</td>
</tr>
<tr>
<td>PA</td>
<td>Physician Assistant</td>
</tr>
<tr>
<td>RDHS</td>
<td>Regional Director of Health Services</td>
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<tr>
<td>RMO</td>
<td>Registered Medical Officer</td>
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<tr>
<td>TC</td>
<td>Técnicos de Cirurgia; the Assistant Medical Officers of surgery in Mozambique</td>
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Acknowledgements

There are many people whom I owe my sincerest thanks, namely my committee members, Dr. Strand de Oliveira, Dr. Ostbye, and Dr. De Silva. Without their guidance and support, especially Dr. De Silva’s tireless efforts on the ground, this work would not have been possible. Thanks also to the DGHI faculty and staff and my MScGH cohort for their patience and encouragement. Thanks to my family for always loving and believing in me. Last, but certainly not least, thanks to my interview subjects for their willingness to share their stories with me.
1. Introduction

1.1 Background

Sri Lanka has excellent health indicators, relative to other middle-income countries. Estimates for life expectancy at birth, under 5 child mortality, and maternal mortality are significantly better than those of the region and the world.\(^1\) One potential explanation for the health status of the population may be the high level of government health expenditure per capita, particularly over the last two decades, which has on average been double that of the regional average.\(^1\) This level of expenditure has translated to a relatively extensive health workforce, including a great number of trained mid-level providers.

The Assistant and Registered Medical Officers (AMO/RMOs), one such type of mid-level provider, predate the Physician Assistants (PAs) of the US. They originated as early as the 1860s as a subsidiary of the British auxiliary medical service during colonial rule. Although its original designation was that of an apothecary, the profession later developed into more of a primary care provider intended to assist rural and underserved populations within the government dispensary system.\(^3\) During the more than 150 years that the profession has been in existence, AMOs and RMOs have held a number of essential roles though the breadth of their duties has purportedly decreased over time. In both past and present times, they have essentially run most of the nearly 500 government central dispensaries and maternity homes.\(^3\) Also, they have historically managed some rural hospitals and peripheral units though their role is now confined to running the
outpatient departments of those facilities as well as those of the district and base hospitals.

At first, only a one-year placement at an outstation was required to become an AMO. Since then, the AMO training program evolved into a fairly comprehensive medical education. The training period was two years, followed by a six-month internship. After working as an AMO for eight years, they were eligible to become RMOs and could then practice independently or in conjunction with physicians within a government health facility and could even set up their own private practices. The AMO curriculum was comprehensive and paralleled that of the MBBS curriculum, with a few exceptions. Among the required courses were: anatomy and physiology, nutrition, pharmacology and pharmacy, microbiology, parasitology, pathology, community medicine, medicine, surgery, pediatrics, gynecology and obstetrics.

The Sri Lankan government decided to discontinue the AMO/RMO training program in 1995. There are only 1,194 AMO/RMOs serving in both the public and private sector, as of 2007. Without modification to this policy, the number of practicing AMO/RMOs will continue to decline and the profession will eventually be phased out completely. Although the number of AMO/RMOs exceeded the number of physicians until the 1960s, increases in the number of medical schools and their respective enrollments has led to an increasing number of practicing physicians. The government has cited the number of trained physicians currently practicing as a justification for phasing out the AMO/RMO training program. Additionally, it is believed that the quality of care provided by AMO/RMOs is substandard to that of physicians. However there is
no evidence to substantiate either of these claims. Even more worrisome is the dearth of research on the impact of AMO/RMOs on the health care delivery system and the health status of the population in general. Thus it is unknown what the true effect of discontinuing the AMO/RMO training program will be on the health trajectory of the Sri Lankan people.

Although the total number of physicians graduating from medical schools has increased in Sri Lanka, access to health care in rural areas has not necessarily expanded proportionally. Upon examining the distribution in location of MOs one can see that there is a disproportionate number of physicians of all specialties in urban areas especially in Colombo, the capital city, compared with the distribution of AMO/RMOs. Some estimates state that the doctor-to-patient ratio in Sri Lanka ranges from 1:300 in Colombo to 1:15,000 in some rural provinces, the latter figure of which is more comparable with estimates in other developing nations. There are even districts, such as Kilinochchi, Mullativu and Mannar, which do not have a single specialist employed. Thus expanding the number of physician training programs available and thereby increasing the number of physicians will not ensure that all Sri Lankan citizens will maintain the same level of access to health care.

By eliminating AMO/RMOs, Sri Lanka is moving in the opposite direction of many other nations which have sought to create and expand physician extender training programs. However, it is difficult to assess the validity of the justifications given for this change in policy without first conducting research on the nature and impact of the AMO/RMO profession.
1.2 Global Trends

Health worker shortage is an issue of growing importance in the developing world. Better working conditions and quality of life in developed nations have enticed many health care professionals to emigrate, leaving already resource-poor settings even more understaffed. One proposed solution to this problem is implementing “task shifting”, in which some of the responsibilities designated to physicians are shifted to mid-level practitioners, such as PAs, nurse practitioners, and AMO/RMOs. This allows for greater access to health care by better utilizing the human resources already available and implementing more efficient training practices.

With the advent and successful implementation and integration of PAs in the US health system, many countries have sought to employ similar recruitment and training programs. Because they require fewer years of training and lower salaries, and typically have lower consultation fees and better geographical distribution, mid-level providers have been deemed a more cost-effective option than physicians for both the health system and those who utilize it. In Mozambique, it is estimated that mid-level professionals can provide similar levels of service to patients as physicians for one tenth of the cost. The mid-level providers who specialize in surgery, known as técnicos de cirurgia (TCs), can be trained and deployed for approximately one fourth of the cost required to train and deploy a physician.

1.3 Global Role of Mid-level Providers

The role of mid-level providers varies considerably across countries and health systems. However, there are several characteristics, which appear to be common across
professions, namely length and level of training and education and ability to deliver primary care autonomously. In many locations, mid-level providers are primarily responsible for health care delivery in rural areas, which can extend coverage and improve access to care. Dovlo categorizes the role of mid-level providers based on the type of task-shifting that is occurring. The AMO/RMO profession could be placed in the “direct substitution” category, as it was newly created to substitute for, and assume the duties of, MOs. There has been little systematic assessment of the quality of health care provided by mid-level providers, including AMO/RMOs. However, there is documentation of the integral role that mid-level providers have filled in improving indicators for some key global health concerns, such as maternal and child health in Bangladesh. They have also proven to be essential in combating HIV/AIDS through the scaling up of ARVs in Malawi and Zambia. When trained for a specific area, they appear to be met with particular success. For example, mid-level providers in Malawi have been performing surgeries for over twenty years, primarily in rural areas, and técnicos de cirurgia (TCs) have produced emergency obstetric surgery postoperative outcomes comparable to those of MOs.

Mid-level providers and task-shifting have been widely utilized and their efficacy has been well-documented in many African nations, but it is difficult to generalize these effects to other nations or regions of the world. Therefore, there is no substitute for conducting further research on the impact of mid-level providers and the complex interplay of factors surrounding their role in health care delivery in nations such as Sri Lanka.
1.4 Assessing their Impact

While mid-level providers do have many shared characteristics across nations and regions, there are naturally situation-specific factors which will shape their impact on the health problems of their countries. Worker performance and quality of care can be complex issues to study so, in situations where it is not feasible or practical to objectively measure quality of care, proxies can be used. Job satisfaction has the potential to be highly impactful on a provider’s performance and the quality of care they give, and thus cannot be ignored when investigating the role and effects of mid-level providers.

The relationship of satisfaction and performance among mid-level providers, and contributing factors, has been examined in various locations. McAuliffe et al. found that job satisfaction and sense of personal accomplishment in Malawian mid-level providers were strongly correlated with adequate facility resources and management support, good working relationships with co-workers, and degree of autonomy.\(^{17}\) In contrast, Vietnamese health workers cited appreciation and support from superiors, co-workers, and patients as the major contributor to job satisfaction and motivation in a study by Dieleman et al.\(^ {18}\) Opportunity for additional training was also among the top motivating factors participants listed in this study.\(^ {18}\) Similar to Dieleman et al., Bradley and McAuliffe found that limited opportunities for education and professional development contributed to poor work performance and even poor retention of workers.\(^ {19}\) Krogstad et al. also found that positive working relationships, sufficient support from superiors, and professional development opportunities were the greatest predictors of job satisfaction.
among Norwegian health workers, although this study included doctors along with nurses and nurse auxiliaries.20

The findings of these studies, combined with the current state of health policy in Sri Lanka, indicate the need for a broad, exploratory approach to examining the role of the AMO/RMO profession on the Sri Lankan health care system and its potential impact on health outcomes of the people.

1.5 Objectives

The purpose of the present study is to explore the role and potential impact of AMOs and RMOs in Sri Lanka’s health care system. This objective will be achieved through a series of semi-structured interviews with RMOs, which will provide insight into how the profession is viewed by those who work in it. A number of thematic areas related to the experience of working as an AMO or RMO will be explored, including: job satisfaction, adequacy of training, perceived opinions of other health professionals and about AMO/RMOs, views of the boundaries between health professions, the quality of care of AMO/RMOs, reasons given for the discontinuation of the profession, and opinions on the future of the profession.
2. Design and Methods

2.1 Setting

Participating RMOs were recruited from the Galle district, which is located along the southwestern coast in the Southern Province of Sri Lanka. The population of the Galle district, which exceeds one million, is served by 31 health facilities including 2 teaching hospitals, 1 base hospital, 8 district hospitals, 8 peripheral units, and 25 central dispensaries and central dispensary/maternity homes. Due in part to the presence of two teaching hospitals, outnumbered only by the Colombo district, there is an average of 3.2 beds per 1000 population in the district which is only slightly under the national average. As of 2007, there were 77 AMOs and RMOs employed in the district, compared with 595 total MOs.

2.2 Study Sample

Subjects were practicing RMOs from a variety of health care settings. One RMO was retired from government service and working exclusively in private practice, while all others were employed in government health facilities in the Galle district. A small, purposeful sample with maximum variation was utilized in this study as it allows for simultaneous in-depth examination of cases and the emergence of shared patterns across cases. Heterogeneity of sample was intended through the inclusion of RMOs from both rural and urban settings and from a variety of government health care facilities, including peripheral units, dispensaries, district hospitals, psychiatric hospitals, occupational health centers, and maternity homes. As the training program for AMOs was discontinued in 1995, all participants recruited had at least fifteen years of experience in the profession.
and had been promoted to RMOs. They were not asked to give their age but, based on observations and reported number of years of experience, the age range among the RMOs interviewed appeared to be early 40s to late 50s or early 60s. There was a two to one ratio of female to male participants. Participants were not excluded based on ability to speak English.

2.3 Subject Identification & Recruitment

Before beginning recruitment, permission was requested from the Regional Director of Health Services (RDHS). The respective District Medical Officer (DMO), Medical-Officer-in-Charge (MOIC) or Assistant-Medical-Officer-in-Charge (AMOIC) of each treatment facility was contacted and asked for permission. If permission was granted, he or she was then asked for the contact information of the RMOs employed at their facilities. The RMOs were then individually contacted to participate in the study. The contact information for the retired RMO was obtained through professional networks. In most cases, permission was sought and recruitment conducted over the phone. However, in some select cases where face-to-face meeting was advised by the in-country contact, recruitment was done in person. If the RMO agreed to participate, an appointment was made for the interview at a later date and at a location of his or her choice. A total of fifteen RMOs were recruited for in-person interviews. As focus groups were also part of the originally proposed methodology for this research, I had intended to recruit eight to fifteen additional RMOs. However, due to extenuating circumstances which will be discussed later, the focus groups were not able to take place. No RMO who was contacted declined to participate or later withdrew from the study.
2.4 Compensation

Participants were not directly compensated for participating in the study. However, at the conclusion of each interview the subjects were given a small gift, a Duke Global Health Institute pedometer, as a token of our appreciation.

2.5 Interview Process

This research employed qualitative methodology to address the aforementioned research questions. As little research has previously been conducted in this area, interviews allowed for a more exploratory approach to the collection of themes and concepts and provided the opportunity for an in-depth examination of the interrelationship of various factors within the AMO/RMO profession and between AMO/RMOs and other health professions.

Semi-structured interviews were conducted primarily in English. However, if the subject required clarification of a question or needed to give part of his or her response in Sinhala the research assistant, a native speaker of Sinhala, was able to translate the question or simultaneously translate the response into English. The research assistant was instructed to give a literal translation, without analyzing or explaining the subject’s words and summarizing their response as little as possible, though it was often necessary if the response was particularly long. A set of open-ended questions with built in follow-up questions and probes was developed and utilized for each interview. The interview guide (Appendix B) was designed for a thirty-minute interview, which is the estimated time commitment conveyed during recruitment. However, some subjects
wanted to continue the conversation beyond the allotted thirty minutes and were allowed to do so.

At the time of the interview, the research assistant and I arrived at the agreed upon location, which was in most cases the subject’s office or the office of the MOIC, and introduced ourselves. We also presented a copy of the permission letter given to us by the University of Ruhuna Ethics Review Committee. We were advised to do this to reassure the subject of the legitimacy of the study. I went over the consent form (Appendix A) with each subject and explained that the interview would be conducted in English but that he or she could feel free to ask for clarification or to give some responses in Sinhala. I answered any questions they had and then asked for their signature.

Once consent was secured, I reiterated that the interview was to be recorded but that their identity would not be associated with the audio recording and asked for a verbal confirmation that I could begin recording. During the interview, the research assistant made note of any verbal and nonverbal cues that might add meaning to the subjects’ responses, such as vocal tone and volume, facial expressions, and hand gestures, particularly any cues that were specific to Sinhalese language and culture. The interviews were recorded using the interview setting on a Sony IC, hand-held, digital recorder.

While I adhered to the questions of the interview schedule, I adapted the follow-up questions based on the subjects’ responses in order to probe for additional information. I also adjusted the order of the questions to accommodate the subject’s train of thought and omitted questions to which the subject had already given a related answer.
This practice served to limit the length of the interview and to prevent participant fatigue or frustration.

Although debriefing subjects was not built into the protocol, it did take place informally after many of the interviews. A number of subjects offered us refreshments at the conclusion of the interviews and wanted to learn more about our motivations for doing the research, intentions for the results, and even general information about my and the research assistant’s backgrounds. Some also wanted to discuss similarities and differences between the medical education and health systems of the US and Sri Lanka. We certainly did not want to seem rude and thus happily obliged them, and I found this experience to be informative as well as enjoyable.

2.6 Ethical Concerns

This study was approved by the Duke University Institutional Review Board and by the University of Ruhuna Faculty of Medicine Ethics Review Committee.

2.7 Transcription

The digitally recorded interviews were uploaded and saved as MP3 files to an external hard drive, which was stored in a locked cabinet. The audio recordings were transcribed using Quicktime and MS Word. Total recorded time exceeded 6 hours. I transcribed all interview components in English, and incorporated any notes made by the research assistant on verbal and nonverbal cues. If there were parts of the interviews I was not able to transcribe, I inserted a timestamp to mark their place and so that I could revisit those sections of the recording later on. Also, if I was uncertain about the accuracy of any part of my transcription I highlighted the text in red.
2.7.1 Transcription Validation

After transcription of the interviews was completed, the research assistant and I together revisited segments of the interview I had difficulty transcribing due to background noise, sound quality, or the subject’s accented speech. He assisted me with completing the transcription and translating any Sinhala segments to English. Any translated words and phrases were italicized to differentiate them from what was simultaneously translated in the interview. The transcripts were reviewed a third and final time by the research assistant alone, who compared them with the audio recordings and proofread for errors in the Sinhala translation or English transcription.

2.8 Data Analysis

The interview questions were developed based on several major topics of interest, including job satisfaction, adequacy of training, level and adequacy of supervision, perceived opinions of other health professionals and administrators about AMO/RMOs, views of the boundaries between health professions, the contribution of AMO/RMOs to access to care, reasons given for the discontinuation of the profession, and opinions on the future of the profession. While the goal of the research was, in part, to learn about these topical areas, I did not want them to distract from any overarching themes or conclusions that could be drawn from a deeper exploration of the text. I engaged in a three-step process to reduce the data to themes. I began the process of searching for themes by developing a color-coding scheme associated with these major topics. I then read through each transcript, highlighting based on the color-coding scheme and assigning quotes from the interviews to the appropriate category. During this stage, I also
reviewed the research assistant’s corresponding notes on verbal and nonverbal cues to ensure that I was extracting the full and correct meaning of the participants’ responses. There were some instances where a response appeared to fall into more than one category, but I attempted to make the defining characteristics of each category as concrete and specific as possible so that each quote could only be assigned to one category. I created a new document for each category and copied the relevant quotes to each document. I reviewed each categorical document multiple times, looking for repeated keywords and phrases. From this analysis, it was readily apparent that the data had reached the point of saturation, and I was able to develop a list of themes with relative ease.

2.8.1 Credibility

Objectivity is neither the goal nor the result of a qualitative study, as “the researcher is the instrument of both data collection and data interpretation and because a qualitative strategy includes having personal contact with and getting close to the people and situation under study,”22 so other approaches must be utilized to ensure the credibility of the study’s findings. Triangulation is one such method which can assist with limiting a researcher’s bias through the use of a variety of data sources or data collection methods. In the proposed study, triangulation was sought through the combination of two different data collection methods, individual interviews and focus groups, with observations and assessment of situational factors in the field. As the focus groups could not be conducted, which is discussed further in section 4.4, triangulation was not fully achieved in this study. However, the level of rigor in the methods, which included a broad sample,
standardized interview questions, and validated transcripts, as well as my own personal attempt at remaining impartial throughout data collection and analysis, hopefully sufficiently limited bias in the study.
3. Findings

The following major themes were investigated through the 15 semi-structured interviews:

- Job satisfaction:
- Adequacy of training
- Level and adequacy of supervision
- Perceived opinions of other health professionals and administrators about AMO/RMOs
- Views of the boundaries between health professions
- Reasons given for the discontinuation of the profession
- Opinions on the future of the profession

From the subjects’ responses to these question areas, I was able to derive the following overarching themes:

- Education and training
- Division of labor
- Gaps in supervision
- Opinions, perceptions, and working relationship
- Future of the profession
- Barriers to care

Many of these parallel the topical areas around which the questions were framed. While this was not intentional, it is where the data landed. Each theme is discussed below, with quotes from the transcripts to support the theme. The participant codes were
not included in the results to prevent loss of confidentiality. Italicized quotes were initially spoken in Sinhala and were simultaneously translated by the research assistant.

### 3.1 Overarching Themes

The table below summarizes the key findings for each of the overarching themes.

**Table 1: Summary of findings, organized by theme**

<table>
<thead>
<tr>
<th>Overarching Theme</th>
<th>Key Findings</th>
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| **Education and Training**                 | • Positive opinion about training  
• Adequate for current role, but not sufficient overall  
• Lack of opportunity for further training or continuing education |
| **Division of Labor**                      | • Same general role as physicians  
• Similar duties  
• Some variation in duties based on type of facility  
• RMOs are closer with their patients  
• RMOs have had a greater role in rural areas |
| **Gaps in Supervision**                    | • Most want more supervision from superiors  
• Want to consult physicians, but they’re not always available |
| **Job Satisfaction, Perceptions, Working Relationships** | • Satisfied with job  
• Not happy with work environment and relationship with physicians  
• Well respected by patients, but not respected by physicians (with a few exceptions) |
| **Quality of Care**                        | • High quality of care within their limited role  
• Barriers include: limited facility resources, education/training, SES of the population, availability of physicians for consulting/referral |
| **Future of the AMO/RMO Profession**       | • AMO/RMO profession should and will end  
• Enough MBBS doctors are being trained to fill the roles  
• Quality of care might be diminished at first, especially in rural areas, but will eventually get better |
3.1.1 Education and training: goals versus limitations

From the discussions about education and training, a paradox emerged. Many of the subjects had positive opinions about their training, insisting that they study nearly all the subjects that MBBS doctors study in school, their instructors were very good, they went to the best training program, or were the top of their batch. However, most did not believe that their training was sufficient, though some stated that they believed their training was sufficient for their current role, that of an outpatient primary care provider. Nearly all claimed that they truly wanted more education and training. Some took it even further and said that one of the major challenges they experience in their profession is the lack of educational opportunities. The reasons cited for this were two-fold: that lack of continuing education opportunities prevented them from delivering quality care to patients because they do not have access to new medical knowledge which could be applied in their treatment, and that having education of such a limited scope and with no opportunity for further study inhibits their ability to be promoted. The lack of education and promotion opportunities appeared to be a very personal issue to some of the subjects:

“If this service to be there…should be good recognition there should be opportunities to higher studies…if I want to complete a degree there should be opportunity…if there’s no opportunity what is the point of having this job?”

A select few subjects wanted to have a side discussion about how their education system compares to that of the US and even expressed envy that, from their perspective, anyone in the US can go to school to become a physician at any point in life. There was also some discussion about emigration opportunities, but mainly that RMOs do not have the financial means to emigrate to other countries for educational opportunities:
“You see there are so many foreigners here. Sri Lankans go there USA, England, India, or China. They offer them degrees, right? Only the rich people unlike us. The Assistant Medical Officers…very pathetic situation actually right they are they can get anything”

For the subjects from the later cohorts of AMO trainees, a change in policy allowed for them to earn a diploma, the equivalent of a university degree before completing their AMO training period. This too was a source of jealousy for those who received their training before the change and were thus ineligible to enter a diploma program. Among those who were eligible, opinions were mixed about whether this was a beneficial addition. One subject began a diploma program, but dropped out and immediately enrolled in the AMO training program, while another attempted to do further studies after becoming an RMO, but was not given leave or allowed to have a modified work schedule in order to attend class.

3.1.2 Division of labor

The questions related to how tasks are distributed between physicians and RMOs and similarities and differences in their roles brought about a wide variety of responses. Many of the responses can be summarized into the belief that RMOs essentially, aside from one or two tasks, have the same duties and serve in the same capacity as physicians:

“RMOs and AMOs are working as Sri Lanka’s medical practitioners. We work…we have to work…like other medical practitioners.”

“Other than judicial medical works, we are to do…all the things that are done by the medical officers.”

“There is no big difference between AMOs and RMOs duty-wise.”

“In my experience in this hospital…we have to work as a doctor…There is not much difference between RMO and MBBS doctor”
This was particularly true for those who were working in more autonomous roles, such as dispensaries in which no physicians were employed. Those subjects also claimed to have to fill the roles of many other types of health workers:

“it’s a problem we are covering nursing duties, pharmacist duties, as well as even medical duties”

The duties most frequently cited as belonging to both RMOs and physicians included conducting the outpatient department (OPD), admissions, providing primary care, on-call and night duty, ward rounds, and referring patients to a specialist or to a larger facility. Some subjects also included reporting statistics in the list of overlapping duties. Those designated as physician-only tasks were “legal duties”, a category which included both enforcing public health and sanitation codes and autopsies, surgery and some administrative tasks such as payroll. RMO-only responsibilities included general, drug, and surgical stores and also referring patients they believe to be beyond their ability to treat to physicians.

Other subjects believed that RMOs and physicians have some overlapping duties but very different roles. Certain subjects emphasized the hierarchical nature of the health professions when describing differences in their roles:

“To me it is inferior to doctor, no?

“Similar actually we can’t say similar. We think we are doing the same but in our ministry level we are just below them”

“Describe to AMO…partially qualified doctor”

However, others had a more positive perspective on the different role of RMOs and believed that they possessed certain qualities that made them superior care-providers:
“RMOs and AMOs are very close with the people but the other medical officers are not very close with the people...because usually they’re not going to the people. They don’t want to cross with the people.”

“I think they’re the people primary health worker.”

“Poorer people come and visit first the RMO.”

“Health education and...kindly treat to the patient um giving kind and responsible care to patients...preventive medicine.”

“Also we can help the poor patients who can’t afford medicine. We can counsel them and we can mentally stable them. We can ask their problems and then we can cure mentally those patients. We can help them with words more than treatments. My treatments most often depend on discussing with patients. Discuss with them and advise them and give some treatments.”

“We are doing big role big role in periphery areas most of the places uh we are doing big job...most of the time the uh MBBS doctors they don’t like to service in the periphery, no? so our people don’t mind they are earning also they are doing private practice and they earns lot and they are doing their job in fact in the peripheries.”

“RMOs have done a great job in grassroots level in remote areas earlier uh now it’s a global village”

This distinction was important to note, as the positive aspects of RMOs’ different role seemed to provide those subjects with a sense of purpose and pride in their profession.

As some of the subjects mentioned slight differences in the role of RMOs between types of health facilities, I further enquired about these differences in subsequent interviews. However, the responses to these questions were somewhat limited and I was not able to gain many additional details beyond the idea that most large hospitals, particularly teaching hospitals, employ few to no RMOs.

“difference means national (Colombo) hospital there is uh one person, in this hospital there is four, in central dispensary one or two, district hospital maximum of two”
In contrast, the interviews did produce rich data on how the role of RMOs has evolved over time:

“I joined the service in 1987…at that time we had to do all the jobs…all the duties in the hospital I mean doing OPD admissions first on-call uh prepare the diet order…drug stores surgical stores as well uh statistics then uh … clerks duties if he is not there we have to do that also uh … all the duties. now the ministry has prepared the duties and um according to that that some of the duties have uh we we not to do those things … preparing night order uh taking over the other I mean the other uniform clothes when they take to the hospital we have to take all that also in those days.”

“same I think and so from the beginning up to now we are doing the same thing”

“general hospital in [names location] uh [names hospital] because AMOs AMOs there uh there there then uh you work in wards uh admiss uh OPDS uh admission officers. Now RMOs and AMOs are not working as house officers in the wards”

“and uh so like that in most of bigger large hospitals we work at that time as admission officers … uh … now uh RMOs are replaced by medical officers in those hospitals”

“change means yes uh duties are reducing, no? unlike earlier. Earlier we have done everything handling uh … when when we are in the hospitals we have small hospitals we have do everything uh the drug stores, uh surgical stores and if there if there is a hospital works hospital everything was done by us. but now now uh … there are so many people, no? even our people also there are not one man stations…two man stations. Enough uh other things so many MBBS doctors…easy to manage unlike earlier”

3.1.3 Gaps in supervision

Questions regarding whether RMOs have supervisors yielded varied results. Some RMOs immediately listed every level of the government medical personnel hierarchy above their station, while others said that they did not have a supervisor and rather worked as a team with the other RMOs or physicians. In some cases, the subjects discussed times when they had been assigned to very rural facilities and were the sole
health workers in those areas. Most subjects said that they supervised lower-level health workers, such as laborers, midwives, and nurses.

Nearly every RMO interviewed cited times when he or she wanted more supervision than what was available. Despite claims that their education was adequate for the limited role in which they serve, the subjects sometimes still had to treat patients beyond the scope of their education and training. In some facilities, the subjects were regularly on-call during nights and weekends and had to manage patients beyond their capabilities alone:

“Sometimes we have to manage bad patients alone in the night … uh with very very low facilities with low facilities and uh low staff uh … at that time uh I thought that if someone was there it it was better”

If faced with a case that is beyond their ability to treat, the protocol is to transfer patients to another facility or refer them to a more senior consultant or physician. However, during nights and weekends those options may not be feasible due to lack of an available physician to consult or ambulance to transport the patient. This is a perpetual problem in certain dispensaries where the highest-ranking medical personnel are RMOs.

### 3.1.4 Job satisfaction, perceptions, and working relationships

Similar to the education and training theme, some contradictory responses emerged from the questions on job satisfaction. All but two RMOs claimed to be satisfied with their jobs. However, when the question was framed slightly differently as “how do you feel about your job” in a follow-up, some of those who claimed to be satisfied said, with some hesitancy, that they didn’t know. When those who did not know were probed for things that they like or dislike about their job, they gave a wide range of
responses. This could indicate a problem with using the term “satisfaction” when asking the question or an increase in comfort level over the course of the interview. Also, many who claimed to be satisfied later said that they were not happy with their work environment, how they are treated by other health workers, and the level of respect they receive from physicians:

“I think we are doing a lot but no one recognize that. That is the thing. No one recognize that.”

“When somebody discriminate us I feel very bad because I know that girl…failed all four subjects at advanced level…now she’s serving as MOH”

A select few mentioned issues with professional jealousy between physicians and RMOs. In contrast, most claimed to be very happy with the respect they receive from their patients and the general public and several shared anecdotes about the praise they receive from patients:

“Treating the patients when they cure they are praising us they say ‘you have done a big for me now I am very well’ that that type of words we like”

“I had the job satisfaction because when the patients come and say ‘I got cured because madam treat me’ and like that”

Another interesting contrast to note is the perceived level of respect given to more senior RMOs by their physician colleagues and supervisors:

“I had very good relationship because uh mm I have worked with several MOs but all of them were very friendly with me. The person who works with me they don’t they don’t discriminate or they don’t insult they don’t hurt me because of who works with me but the people who uh don’t work with me the people who are out there outside they are passing out so many words and they are that is the thing but the people who work with me they are of course they know who am I and they are very friendly with me”
3.1.5 Quality of Care

A consensus was reached on the subject of quality of care. Each subject claimed that they provide good quality of care, even when faced with challenging patients:

“I have treated them well and transferred them to [names hospital] for the further management.”

“I transfer most of the patients early and I save their uh lives…yeah I’m satisfied with my uh … my area I can do what I can do I did”

“I think uh I did my best”

However, some gave the caveat that they deliver quality care only in the limited role in which they are allowed to practice:

“I am actually satisfied with what I can do and uh I mean uh up to my knowledge I treat them at my best.”

Others claimed that they give quality care, despite limitations of the health facility and resources:

“I am very happy because with the less facilities of this place I have given maximum care”

This issue of barriers to health care delivery was not specifically inquired about within the interviews. However, other subjects also cited specific barriers, beyond those discussed in the education and training segment of the interview, to their ability to provide high quality of care to their patients. These barriers included both characteristics of the population they are serving and limited resources, both human and otherwise, within their facilities:

“but most of people can’t follow our instructions because there are the main problem is there are poor living conditions”
“this is primary level ...so the poorer peoples come here...rich ones go to the major hospitals”

“I was in charge of maternity home at [names location] at that time uh we have to do deliveries because uh facilities were not much there so uh only thing we had was one sucker so when breach case we are not allowed to do there but accidentally I had the case because patient was in labor uh she was when she was brought to hospital so uh when I went there it was breached so somehow or another I was able to save baby as well as mother ... uh without having any tear”

“No our population is a very uneducated population ... majority of these people are Muslims...those are very uneducated...health education is very poor...education is also very minimal”

“lot of difficult cases ... uh maternity cases are there, no? lot of maternity cases are coming maternity cases we are handling when we cover and no other facilities it’s like it’s a very we have to take very brave decisions. No blood bank, no any other facilities, no theater facilities. Only we have to do all those things with our hands.”

“In that area were lot of lot of snake bites and poisoning. Mainly snakebites so actually we had there anti-venom also now in these hospitals we don’t have anti-venom.”

“That is the other main problem we don’t sometimes always we don’t have ambulance.”

“Some uh rural areas without uh minimal facilities no buses and no transport services sometimes very poor electricity like that so RMOs actually work in those areas for a long period even now.”

“sometimes we have to manage bad patients alone in the night ... uh with very very low facilities with low facilities and uh low staff”

“Another ectopic also came once there. At that thing I diagnosed that at the OPD. I diagnosed it and was admitted so I call the ambulance and there was no ambulance”

Furthermore, issues mentioned previously such as the need for RMOs, particularly in facilities with few or no MOs present, to handle such a wide variety of duties and to
cover so many roles, as well as the daily patient volume cited by some of the subjects, could also be considered significant factors in quality of care.

3.1.6 Future of the profession

With the exception of one, every person interviewed predicted that the RMO profession will end and believes that it should. One cited the discrimination and lack of opportunity they face as reason why the profession should end, while others asserted that it is better for them to be replaced by physicians because they have better education and training and are thus more qualified providers. A few claimed that recruitment was ended because the Medical Officer Union does not like RMOs.

Most believed that there would be a sufficient number of physicians trained to cover the duties of RMOs eventually. However, some recognize that there could be a distribution problem in the near future:

“In the training we train for the very very rural remote areas but uh the MBBS doctors are not for only for rural areas uh … uh … they they always they like to do their job in urban areas and because like they they want to do higher education and I think to uh get their children higher education I think so I think that will problem for I think their mind not suited for rural areas”

“There must be a big problems for rural areas without uh lack of human resources and only with uh MBBS doctors because we do all the things in rural areas that’s the thing in the health care system will be dropped uh and other thing is they they have higher education so uh most of MBBS doing higher educations in uh working in rural areas so their ambition to be specialist but also only we do our hundred percent our work to do the work”

Others believe that newly graduated doctors may not be able to provide the same quality of care as experienced RMOs:

“There are more doctors now, no? so they can take the role but uh…we have big experience, no? very long experience so newly passed out doctor can’t take that role, no? we are doing this with our experience”
“We also can diagnose every most of thing by our experience”

“quality will drop”

Despite such concerns, nearly all seemed confident that the government would do what needs to be done to ensure that there is sufficient number and appropriate distribution of physicians to accommodate patients and that other health workers such as nurses will be able to compensate for the new physicians’ lack of experience.

3.2 Observations

3.2.1 Tensions Surrounding Research

As mentioned in the methods, before beginning recruitment and data collection we obtained permission to conduct the study from the RDHS. Although the RDHS appeared to have no qualms about permitting the research, it was readily apparent that the issues we were investigating were of great personal significance for area health professionals and MOH officials alike. This factor, combined with the interconnectedness of health professionals in the district in which the study was being conducted, demonstrated the need for caution and sensitivity when proceeding with the study.

Even though the RMO training program was discontinued nearly two decades ago, there still appears to be a great deal of tension between the RMO and MBBS professions and their respective unions. These tensions translated to the research team being greeted with hesitancy and suspicion at first, which we were typically able to dissipate before or during the interviews. However, approximately midway through the data collection period a particular individual, who shall remain nameless, began to voice
his/her aversion to the research in the community. We were concerned that this would impact our ability to recruit participants and thus hastily completed the last few interviews. When it appeared that our permission to conduct the study could be jeopardized, which would affect our ability to use the data that had already been collected, we determined that it was in the best interest of the study to cancel the focus groups. Although the focus groups could have made a considerable contribution to the research, the tension we observed is in itself informative about both the significance of issues related to the RMO profession and training program and the sociopolitical climate of the area.

3.3 Anecdotes

All subjects were asked to describe challenges and difficult cases they had faced in their many years of professional experience. While not all of these cases directly related to a particular theme within the context of this study, many are worth noting as they are indicative of the richness of experiences among RMOs. A selection of these personal anecdotes is included here:

“I work here during the tsunami so I did lot of um lot of service to the community actually during that period um we controlled uh all of these communicable diseases there were no single diarrheal cases here. Uh during the tsunami period the Galle municipal council area no single diarrheal case uh and that is um the best experience I had in my life, I think. So we had uh nearly forty camps here within Galle MOH and uh there were some camps more that thousand people. On the day tsunami I worked at [name of hospital] cause I was deciding uh [name of hospital] I went there and served with my husband. My husband is a medical officer so we both and then we served there and after the 25th or 26th I can’t remember the very next day we came here but we couldn’t come near here so … after the clearing we came and here we started uh we uh started our work uh upstairs cause we can’t come we couldn’t come here so that is uh and I uh I have saved a few pregnant mothers lives cause we identified bad cases and reported that uh on time”
“I was entered there in 1985 uh 1989 there were these ethnic problems so uh we could we couldn’t complete our course until 5 years. I sat for the final exam 5 times 5 times we are sitting we were sitting and they were stopping and like that it took nearly 6 years to complete…nearly 6 years to complete and uh after that uh 6 months of our internship uh it went about 1 and half years so that chance we got internship 1 and half years.”

“I can remember that and we were uh at [name of hospital] during that 89 I don’t know if you can’t remember this ethnic problem…not the ethnic problem…that is JVP political problems. So at that time bodies not the bodies injured people filled the tractor injured people they were brought here to Matara hospital…in tractors so we had to fix sutures and stop arrest bleeding and everything we did. I was managed to save their lives because I was arresting bleeding.”

“That day the ambulance also was not here. He was actually uh very uh there was a large amount of bleeding and about to collapse so actually we could manage him here by giving oral drugs and we don’t have blood uh put 2 canulas (IV) and giving enough of our I mean uh giving oral I mean IV fluids and preventing the bleeding we we could what we could just just dress the wound and uh even we couldn’t suture and close the skin the skin is separated from the thigh and then uh we have to stay for about 45 minutes we had to bring ambulance from Karapitiya on that day even in uh closer hospital we couldn’t get ambulance then uh we brought ambulance from Karapitiya then myself and one nurse went with the patient still I mean that was happen about 7 months ago still he is Karapitiya hospital. Recently his skin graft uh has been done. uh that is a very bad experience.”

“Jungle also belongs to terrorists those days so uh there when I worked in [names hospital] sometimes…that is the border of the Sinhala area or Mahaoya tiger area so there was a village called Tampitiya there that village there was a STF (special task force) camp and a simple dispensary actually dispensary uh was not function all week only once a week one doctor was there and treat the patient and come back right. So that is give by STF those days uh then uh they wanted a doctor. Actually the RMO before I went Mahaoya the uh … the transferred RMO had gone that dispensary that means that is there called distinct stations. Doctor sit there and bring drugs and other things with the ambulance or some vehicle then treat the other staff that means uh laborers and like 2, 3 laborers and there people know that on this day this time doctor come. Then they come to the hospital and treat and come back so uh sometimes there uh the deaths is increasing.

So…we had to travel through the jungle to that village that means that village was in the jungle so that road is uh controlled by terrorists. They know always they are not there but they can easily come sometimes attack and go. So
then there the Ampara RD he wanted a doctor there that dispensary was working and finally there were a lot of threat and they couldn’t have enough army person to protect them and then that was abandoned. The village was there the dispensary. Then they came to the hospital for their health uh I mean their health facilities so uh finally the they wanted that dispensary to function again then they wanted a doctor so then they ask from doctor MBBS doctors like that uh one day RD called me and “[names participant] if you can go there uh we can manage ambulance and can you go there?” They ask from me so all the other doctors uh refused to go. Then I told them I can go…then uh I agreed with them and he gave me letter also with copies to the DID and that uh army that commander of this area to I mean to provide uh security facilities then he give me the ambulance and I went for about until I transferred from here from there I worked in that dispensary. I go in the morning sometimes 30, 40 patients were there and I see them and come back.

Sometimes we go and there was a checkpoint. I ask from them how is the situation today? They give me the information: ‘Today you can go’. Sometimes ‘we have not cleared the road.’ Normally the in the morning they clear the road. Clear mean 5, 4 or 5 army soldiers or STF people they go with uh um they had some instrument to uh … identify bombs or like they use that and they go just on the road…After going that distance they think our road is okay. Then I go to the checkpoint and I ask how is the road today? They say “okay”. I go. Sometimes they say “you go a little later”. That means if they had any suspicion some villagers tell them. There were 2, 3 people who were in the jungle last night like that. Then sometimes actually if the condition is not good I return because uh I have a family and my life they don’t protect my life.”

“I had one day one MO, the DMO. He leave so I was also alone anyway then he was transferred. No doctor there. I had to run the hospital all alone. I worked for about 2 year during the 20 hours for close to 2 months. I am uh very tired now. Only doctor no the staff was not…the earlier the staff we had was. I have no rest too. I was fed up with the job so I report in sick and close the hospital and I was in the quarters I said I am sick now I can’t work {laughs} now the hospital was closed. So then they send uh relief doctors then they send uh then they send about 2 doctors from somewhere a MO and RMO.”
4. Discussion

Through interviewing subjects, transcribing the interviews, and parsing the transcripts for patterns and themes, I hoped to understand how the RMO profession is viewed by those who work within it, including their perceptions on the RMO’s role within the Sri Lankan health care system, opinions on RMOs’ preparation and quality of care, level of job satisfaction, and predictions about the future of the profession. These interviews yielded a rich and colorful dataset which I was able to contextualize with observations regarding the political climate in the country and district and knowledge acquired about the government health structure and policies, as well as cultural views and practices regarding medicine, made during my time in the field.

AMOs and RMOs are prime examples of mid-level providers as they meet many of the criteria, including an abbreviated education and training period, the ability to practice autonomously (for RMOs at least), and lower payscale. They can also be characterized as a form of direct substitution, as MO tasks are shifted to RMOs with a great deal of overlap between the two. This characterization was thoroughly supported by information gathered from the interviews, as most RMOs claimed that they have the same role as MOs and very similar duties. However, the RMOs asserted that they are different from MOs, closer with their patients than MOs are, and that they have had a larger role and greater impact in rural areas. While we anticipated that there would be a number of similarities between RMOs and PAs, this did not prove to be completely true. The two types of providers differed in a several key areas. While it is difficult to ascertain how comprehensive the RMO curriculum truly was, as the coursework was
discontinued so long ago, the impression was given that RMOs only receive basic, practical training as opposed to a formal diploma or degree (although a selection of them elected to earn a diploma before entering the training program). In contrast, it is common practice for PAs to receive a bachelor’s degree before entering the additional two-year degree program. While the RMOs seemed generally positive about their education and training experiences, and for the most part believed that the training was adequate for their limited role, they recognized their need for further education. RMOs do not receive any continuing education and do not have the opportunity for further studies or promotions. This is in stark contrast with PAs, who must maintain up-to-date medical knowledge in order to retain their certification, and who are eligible to enroll in additional degree programs.

Objectively measuring quality of care and assessing the impact of RMOs on the health of the population were beyond the scope of the present study, though the literature indicates that similar professions have been highly beneficial in other developing nations. However, RMOs were asked to informally evaluate their own quality of care, and the majority claimed they give good quality of care within their limited roles and despite a number of barriers which included limited facility resources, the socioeconomic status of the population they are serving, and availability of physicians for consulting. This last barrier was explored further in the questions regarding supervision, which yielded surprising results. While RMOs are given a reasonable level of autonomy, most could name several occasions where they wished they had had more supervision from superiors. This desire for greater supervision is not necessarily indicative of their
skills and abilities as RMOs. On the contrary, it is both a reminder that their training limits them to handling only a narrow array of conditions and an indication that there are gaps in the patient referral system. Insights gained from questions on job satisfaction and work relationships, were slightly less surprising. RMOs asserted that they were generally satisfied with their job, but were not happy with their work environment. Many described negative experiences with physicians, but nearly all claimed to be well respected by their patients. When considering these findings in the context of previous research, it is clear that job satisfaction is not a theme in isolation but is interconnected with the other themes, namely barriers to quality of care, gaps in supervision, and education and training opportunities, which McAuliffe and others have demonstrated as being integrally linked to job performance.\textsuperscript{17,18,19,20}

The AMO/RMO profession arose out of a severe health workforce shortage and dire need for physicians. It logically follows that, when a sufficient number of physicians have been trained, RMOs are no longer necessary. This idea was echoed by the RMOs, most of whom believed that the number of MBBS doctors will be sufficient to cover RMOs’ responsibilities in the near future as the number of medical colleges and of new MBBS graduates has increased significantly. However, some RMOs claimed that there will be a period of time where overall quality of care in Sri Lanka will diminish because new, inexperienced MBBS doctors will be replacing highly-experienced, albeit less educated, RMOs. The issue of distribution also arose, as RMOs have historically been assigned to facilities all over the country including those in very remote areas. The RMOs claim that, despite the mandate for new MBBS graduates to be assigned to rural
areas for two years after they complete their internship, physicians refuse to serve in remote areas and find ways to remain in the more urban centers of the country.

The social and political context in which this research was conducted indicated that, although this profession and issues surrounding it are coming to a close, there is still a great deal of tension between AMO/RMOs and Physicians. Whether this tension suggests that the conversation about AMO/RMOs role in Sri Lanka’s health care system is not yet over, or signifies that there will be no reversal of policy, remains to be seen.

4.1 Implications

As this study originated from a shift in government health policy, its findings have a number of policy implications. On the surface, eliminating AMO/RMOs seems to be a sound policy decision as there are a great many MBBS doctors being trained, ranging from 66 to 297 from each of the 5 medical colleges each year, and one cannot argue with the fact that the MBBS doctors receive better preparation and have more extensive medical knowledge. However, having a sufficient number of providers will have no impact if their distribution is not improved. More focus should be placed on ensuring that new MBBS graduates are assigned to rural areas. We were informed that the current requirement is for post-internship MBBS doctors to spend their first two years practicing in a rural location, but this policy will have no effect without proper enforcement and anecdotal evidence suggests that these efforts in better distributing physicians have been fruitless thus far. Although the AMO/RMOs have less education and training and potentially outdated medical knowledge, their extensive experience is undeniable and their skills and abilities could certainly rival those of new MBBS
providers. Therefore, it may be worth consideration to implement a sort of apprenticeship program in which new MBBS graduates are assigned to work with RMOs for a certain period of time, if only during their internship period. Through this program, both sets of professionals could learn from each other and the knowledge and memory of the RMO profession could be preserved for another generation.

Furthermore, the government should consider establishing a course of action for handling any future health workforce shortages, as there is always the potential for the conditions which brought about the creation of the AMO to arise again. Even though the AMO/RMO program appears to have been successful in fulfilling its particular purpose in the past, with some key modifications like the addition of opportunities for continuing education it could be significantly more beneficial in the future. An alternative to reinstating the AMO training program could be to apply task-shifting principles to a different segment of the health workforce such as nurses. With additional training, nurses could theoretically serve in the same capacity as AMOs, and nurse practitioners have demonstrated their ability to function in a role similar to that of physician assistants in the US. As there are so many nurses already employed in the health system, nearly three times the number of medical officers, and there are no known plans to modify or eliminate their training, utilizing them as mid-level providers may be a more feasible option than creating a new mid-level provider in the even of future workforce shortages.³ Consideration should also be given to the AMO/RMOs who are still practicing today. While many of them are nearing retirement age, some still have at least ten years of service left and their roles will continue to shrink over that period of time. As several of
the subjects noted in the interviews, something should be done for these people. They have worked hard to serve the people of their communities and should not be marginalized.

In mid-August 2012 it was announced that the Sri Lankan government intends to spend four billion LKR (approximately 31 million USD) to upgrade health facilities and improve health services in the Galle district.\textsuperscript{24,25} It is not yet clear for what these funds are specifically earmarked but, as we learned from the interviews, limited resources in the health facilities have been a large barrier to RMOs’ delivery of quality care. Thus making improvements to health facilities has the potential to significantly improve their capacity to treat patients.

\section*{4.2 Limitations of the study}

\subsection*{4.2.1 Limited scope}

As this was intended to be a pilot study and was thus purely exploratory in nature, it was very limited in scope. Participants were all employed in the same district and many of them were educated at the same institutions. Thus there is a possibility that characteristics of the area and similarities between the institutions in which they are practicing may have falsely contributed to saturation of the data. This limitation also hinders the information gathered from this research from being generalized to areas outside of the Galle district.

\subsection*{4.2.2 Loss of Confidentiality and Bias}

Furthermore, recruiting from within such a small geographical area has the potential of introducing loss of confidentiality and bias. While we tried to limit this to
the best of our ability, there was always the potential risk that subjects’ identities could be revealed through word of mouth. The subjects were made aware of this risk during the consent process (Appendix A), which may have caused them to slightly alter or completely change their responses to the interview questions. Some of the questions, particularly those delving into government policy and working relationships between health professions, may have been viewed as of a sensitive nature to RMOs. They might have been concerned that giving honest and detailed responses would jeopardize their jobs or relationship with their superiors or co-workers.

Both the researcher and the research assistant were also potential sources of bias. The research assistant was a recently graduated MBBS student, known as a pre-intern, and he always shared this information with the subjects when introducing himself. While no subject explicitly had a problem with the research assistant’s field and future profession, many were apologetic to him when they made negative comments about other physicians. It was implied that they saw him as having allegiance to physicians and did not want to upset him with their comments. The research assistant never made any negative comments about the RMO profession and appeared very neutral, maintaining a certain level of professionalism throughout the interviews. However, over the course of the data collection period it became evident during conversations outside of the interviews that the research assistant held very strong opinions of the role of RMOs and the care they provide and had the view that the profession should absolutely be eliminated. It is difficult to assess whether the research assistant’s opinions came across during the interviews and caused bias. Also, as the research assistant was new to
qualitative research, he made some minor errors during the interview process which were not evident until the transcription stage. When clarifying or restating a question in Sinhala for the subject he sometimes asked leading questions or slightly altered the meaning of the question, which on one or two occasions elicited an off-topic response from the subject.

As the researcher, I also likely introduced bias in this study. While I tried to establish a friendly yet professional relationship with the RMOs upfront, I was most certainly still viewed as an outsider based on my nationality, age, and perhaps even gender in some cases. If subjects were at all suspicious of me or my intentions, they may have altered or limited their responses to some of the interview questions. Also, even though I came to this research as a neutral party, I naturally began to form opinions about the RMO profession and related policy issues which I had to keep in check while conducting the interviews and transcribing and analyzing the data.

4.2.3 Incomplete Data Collection

The original aim of this study was to conduct both interviews and focus groups. However, due to tensions that arose as described in section 3.2, the focus groups were cancelled and data collection was limited to only interviews. While I fully believe that the interviews alone generated a rich dataset, the focus groups may have elicited some diverse responses as people often feel more comfortable sharing their true thoughts and opinions when surrounded by their colleagues who may share them. Also, utilizing two different data collection methods would have allowed for better triangulation during data analysis.
Even within the interviews, there were some minor limitations to data collection. For example, some participants declined to answer certain questions. While this was somewhat anticipated, as it was assumed that some participants would be concerned about loss of confidentiality and the potential for their responses to jeopardize their career or work relationships, it still represents a missed opportunity in learning about their experiences and opinions. In fact, those who were unwilling to answer all questions may have had particularly significant stories to share. Furthermore, the language barrier proved to be greater than was expected which was especially relevant for the first few interviews. It was initially thought that the RMOs’ command of English would be sufficient for the interviews to be conducted exclusively in English. In most cases this was true, but what was overlooked was their lack of familiarity with American accents. This made it particularly challenging for them to understand me when I asked the questions, and I often had difficulty understand their Sinhalese accent as well. When it became evident that this was going to be a pervasive problem, the IRB protocol was amended to allow for simultaneous translation by the research assistant. Nevertheless, some key information may have been lost in those first interviews due to communication problems. Lastly, the need for the research assistant to multi-task during the interviews may also have caused some information to be overlooked. As described in the methods, the research assistant was responsible for taking notes on body language during the interviews as well as clarifying or translating questions into Sinhala for the participants and then translating their responses back into English. Because the need for translation
sometimes outweighed that of note-taking, there are large portions of some of the interviews for which there are no notes on body language.

4.3 Strengths

Although there were a number of limitations to the study, there were also many strengths. Although only fifteen RMOs were recruited and interviewed, saturation was achieved well before all fifteen interviews were completed. While all RMOs were recruited from the Galle district, many had previously studied, lived, and worked in other parts of the country. A sufficient level of diversity in the sample was achieved as RMOs were recruited from a variety of different types of health facilities, from rural and urban areas, and from a range of ages; one was even retired. A major contributing factor to early saturation was the cooperation of the RMOs. With the exception of one or two individuals, they shared their thoughts, opinions, and experiences freely and willingly. In fact, most of the subjects were very enthusiastic about the research. They truly wanted me to walk away with a comprehensive understanding of what the experience of being an RMO is currently and what it was in the past. Furthermore, no subject refused to participate and there was no attrition.
5. Conclusion and Future Directions

The present study was intended as the first step towards understanding the role and impact of AMOs and RMOs in Sri Lanka’s health care system. Through in-depth interviews with practicing RMOs in the Galle district, a wide array of topics surrounding the experience of working as an RMO was discussed and explored. The themes drawn from these interviews provide insight into how the AMO/RMO profession is perceived by those who have worked within it and by the physicians who have worked with, and the patients who are treated by, RMOs. In addition, the personal anecdotes give evidence of the richly diverse professional experiences of RMOs. Information and insights gained from these interviews can be utilized for development of more objective and comprehensive research on their impact and clinical efficacy in the future. It can also inform future policy decisions and recommendations in Sri Lanka and even other nations regarding health workforce composition, task-shifting, and the use of mid-level providers.
Appendix A

Consent to Participant in an Interview

You are being asked to participate in a study intended to explore the role of Assistant and Registered Medical Officers within Sri Lanka’s health system. We represent a small group of researchers partnering with Duke University in the United States who hope to gain greater knowledge and understanding of how AMO/RMOs are perceived by those who work in the profession. You are invited to participate in an interview in which you can share your thoughts and opinions on this subject. Your participation would be entirely voluntary. This is expected to take thirty minutes of your time. We aim to have discussions on this topic with 30 AMO/RMOs total. Information gained from these discussions will be summarized in a report and research papers. The sessions will be audio recorded.

There are no physical risks associated with participating in this study. There is a possibility for loss of confidentiality, but we will make every effort to minimize this risk and to keep your information confidential. We will not identify you in any future presentations or writings resulting from this study. You will be assigned a code number, which we will use instead of any identifying information for you on audio files, transcripts, and other research materials. The code number information will be securely stored and only authorized personnel will have access to it.

You may refuse to answer any questions and may withdraw from the study at any time without any penalty or consequences. If you choose to withdraw, we will not collect any new information about you, except for data to keep track of your withdrawal.
There are no direct benefits for participating in this study. We hope that the information we gain from this study will contribute to a greater understanding of the role and impact of AMO/RMOs in Sri Lanka’s healthcare system. All participants will be given 500 rupees as a reimbursement for travel expenses and will be invited to a dinner as a token of appreciation.

For questions about the study, complaints, concerns or suggestions about the research, or questions about your rights as a research participant, please contact Dr. Vijitha De Silva at 077760970.

**STATEMENT OF CONSENT**

By signing the statement below you are agreeing to participate in this research study.

<table>
<thead>
<tr>
<th>Name of Subject (Print)</th>
<th>Signature of Subject</th>
<th>Date</th>
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The purpose of this study, procedures to be followed, risks and benefits have been explained to me and I agree to be in this study. I have been told that I am free to stop participation at any time if I so choose and that the investigator will gladly answer any questions that arise during the course of the research.
Appendix B

Interview Guide

First, I would like to learn about your current job.

1. Can you please describe your current position?
   a. How long have you been working in this position?
   b. How do you feel about your job? Are there things that you like about it? Are there things that you dislike?

2. How are your work responsibilities similar to those of other health workers (ie. nurses, physicians, laborers)?
   a. How are they different? Are there AMO tasks which physicians do not do? Are there physician tasks which AMOs do not do?

Now, I would like to talk about AMOs and RMOs in general.

3. How would you define or describe an Assistant Medical Officer? A Registered Medical Officer?
   a. What is the difference between the two, if any?

4. What do you think is the role of AMO/RMOs in Sri Lanka’s health care system?
   a. Has the role changed over time? If so, how?

I would now like to discuss some of your experiences.

5. Could you please describe your education and training.
   a. Do you feel that your training was good preparation for the work you do?
   b. In what ways did it help prepare you?

6. Can you describe a difficult case you have treated?
   a. What was your role? Were there others helping you treat this person or were you treating alone?
   b. How do you feel about the quality of care you provided in that case?
Now, I would like to talk about the relationship between AMOs/RMOs and other health professionals.

7. What level of interaction or collaboration do you have with other health workers?
   a. Clarification (if necessary): Approximately how many physicians have you worked with in your career? What is the longest period you have worked with any one physician?

8. At any point in your career, have you reported to someone or had a supervisor?
   a. Have you held a position where you supervise other health workers?
   b. Was there ever a point in your career where you wish you had had more or less supervision? Why did you feel you needed more/less supervision?

9. What do you think other health professionals think about AMO/RMOs?

I have heard that the training program for AMOs and RMOs has been discontinued.

10. Why do you think the training to become an AMO/RMO is no longer available?

11. What do you think the future of the AMO/RMO profession will be?
    a. Should the training program be reinstated? Why or why not?
    b. Do you predict that it will be reinstated? Why or why not?

12. How will no more AMOs being trained affect Sri Lanka’s health system?
    a. Will there be a sufficient number of health workers to care for patients?
    b. Will it affect quality of care delivered?
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