

Exploring Physicians' Perceptions of Registered Medical Officers in Galle, 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

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ABSTRACT

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Abstract

The purpose of this qualitative research study aimed to explore physicians' perceptions of registered medical officers (RMO) in Galle, Sri Lanka. The RMO is a mid-level practitioner, analogous to physician assistants in the United States or mid-level health workers of several other countries. The position of the RMO was vital to the Sri Lankan healthcare system for decades, providing basic care within the country's universal healthcare program for lower costs and minimal training and filling in the gaps in delivery in smaller centers and remote areas. As similar countries move towards task-shifting strategies, Sri Lanka has eliminated the RMO program and has commenced the replacement of current RMOs with physicians in an effort to increase the quality of healthcare provided at even the basic level.

This study aimed to understand better the perceptions of physicians regarding RMOs and the RMO profession, the perceived value of the RMO position, the role RMOs have played within the system, and reasons surrounding the elimination of the RMO. Fifteen physicians were selected from the Galle District of Sri Lanka to participate in a semi-structured interview regarding the RMO profession. The resulting responses illustrated a fairly low perception of the RMO profession and its members, with repeated concerns shown for the lower quality of care provided and the lower level of education attained. Physician perceptions of RMOs suggest that the working relationship between the two professions is frequently strained, and it was clear that

most physicians were in support of the government's elimination of the RMO training program. Furthermore, the government initiative to replace RMOs was being met through the high numbers of medical graduates that were annually entering into the healthcare system. While the actual value and abilities of the RMO could not be accurately determined, it was apparent that poor perceptions of their value and abilities may have played a role in the termination of their training and the possible advantages to the position had not been fully considered. The involvement of politics in both professions further solidifies the understanding that other factors may have influenced the removal of RMOs. Moreover, given the current status of Sri Lankan healthcare, it must be questioned whether the already strained system will be able to carry the burden of the additional physicians' salaries, and additional resource improvements necessary in peripheral health centers, and still succeed in increasing and advancing the overall level of care and coverage currently available.

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1. Research Design and Literature Review

1.1 Research Design

As many countries have seen the benefits of employing mid-level medical practitioners for the provision of basic healthcare in low access locations, the Sri Lankan government is discontinuing the country's assistant medical officer/registered medical officer (AMO/RMO) program. The eventual phasing out of the assistant medical officer is to occur parallel with an increasing number of allopathically trained Sri Lankan physicians. These physicians are intended to eventually replace any AMO/RMO positions and fill vacancies that exist in the primary healthcare workforce. It is important to evaluate Sri Lanka's strategy to eventually eliminate assistant medical officers and focus on alternate possibilities, in order to uncover other methods for improving healthcare access in similar countries. The first stage towards understanding Sri Lankan strategy is to assess opinions of the assistant medical officer training program by those in the healthcare workforce, by conducting several structured interviews with both AMOs and physicians. This study specifically will seek to understand the physicians' perspective of assistant medical officers.

1.2 Literature Review

The importance of the role of healthcare providers may be underestimated when determining initiatives for the improvement of healthcare and health outcomes in low to middle-income nations. When documenting key health determinants for a developing

country, lack of access to healthcare is included among characteristics of a weak healthcare infrastructure; other characteristics often include undeveloped technology and low education and socio-economic levels in target populations. Common strategies in strengthening healthcare systems, however, often only include creating hospital centers in rural areas, providing for transportation of patients, and increasing awareness and prevention of disease. Internationally, there are relatively few studies regarding the status of current or future healthcare workers, the availability of workers, or the use of training new, permanent health workers as a resource for improving access to care.

Recently, the trend of a diminishing physician population has been identified as a great concern to healthcare systems across the globe. Both developing and developed nations are facing a shortage of physicians and nurses now or in the near future. While developing nations are experiencing a loss of investment in training doctors and nurses as they emigrate to practice in high-income countries, the immigrant physicians do not suffice for reversing the falling ratio of doctors to patients seen even in the developed world⁹. Provided with higher pay, better work conditions, and a lower number of patients in upper-income countries, physician retention has become a major concern in countries already experiencing low health expenditures and physician shortages. Developing nations such as Kenya, India, and Sri Lanka invest substantial government funds in training doctors, but these countries may have difficulty finding the necessary resources required to entice physicians to remain and practice in their home locales⁹.

As a low to middle-income country, Sri Lankan health expenditure relative to GDP is fairly high. Spending 4% of total GDP on healthcare, Sri Lankan per capita health spending is \$193 per year ¹³. In the past forty years, restructuring of their healthcare system has been one of the factors associated with dramatic improvements in Sri Lankan life expectancy, maternal and infant mortality rates, and prevalence of infectious diseases eradicated in the developed world. Relatively careful distribution allows Sri Lankan government to cover 50% of total health expenditure; past allocation measures have proven effective in lifting the country's healthcare status ¹². As with other low-middle income nations, the country has experienced ongoing challenges with physician retention. Changes in the healthcare system resulted in the addition of a new healthcare worker; the assistant medical officer (AMO) program began in the British colonial period and was further developed in the 1960s to help cope with the shortage of available practitioners in Sri Lanka ¹⁵. Originally developed to fill a role similar to apothecaries, or rural pharmacists, funds were allocated to strengthen the AMO program in order to enhance patient access to basic care. Furthermore, assistant medical officers began to address the 'brain drain' phenomenon in Sri Lanka, providing physician level care where necessary to support practicing physicians ⁸.

From the 1940s to the late 1990s, Sri Lankan health outcomes have shown marked improvement. Average life expectancy increased by 30 years between 1946 and 1996, while the introduction of healthcare to rural populations and an outreach of

antenatal care to mothers has contributed to a decrease in both infant and maternal mortality to 16.3/1000 live births and 2.3/10000 live births, respectively ⁵ (rates in 2000). Though the assistant medical officer program cannot be directly credited with the improvements Sri Lanka has made, with the number of assistant medical officers outnumbering physicians well into the 1960s, and the program continuing for decades afterwards, it may in part be due to the contribution of AMOs. Sri Lanka continued to implement policy changes, however, to improve physician retention; an employment guarantee in government hospitals to Sri Lankan medical school graduates seemed to slowly increase physician numbers in urban centers. Sri Lanka discontinued funding to the AMO program in 1995, reverting back to funding healthcare infrastructure and physician training (interestingly mid-level healthcare provider programs in the arena of maternal health continue to be funded).

The Sri Lankan approach to health system restructuring differs from international trends toward task shifting and mid-level health workers, prompting the formation of a preliminary study looking at the perceptions of assistant medical officers and physicians regarding the role of assistant medical officers in the Sri Lankan healthcare workforce. This portion of the structured qualitative study aimed to gather information regarding the opinion of current practicing physicians in Sri Lanka and their perception of the AMO program and practice. Perceptions of adequacy of the health care workforce and access to care in Sri Lanka were also important to explore.

This initial study was designed to explore physician opinions regarding AMOs, seeking commonalities and divergent views among physicians and between physicians and AMOs through two parallel research projects. Insight into the perceptions of both physicians and assistant medical officers regarding the phasing out of AMOs may inform future quantitative projects and data analysis of the impact of the AMO program on both the community and the other healthcare workers in Sri Lanka.

2. Methodology

This research project was designed as a qualitative study addressing the question of Sri Lankan physicians' opinions of the changing healthcare workforce, specifically of the role of the assistant medical officers/registered medical officers. Without much prior research in this area, a qualitative study pursued a deeper understanding of AMOs/RMOs, as seen through the eyes of Sri Lankan physicians.

Fifteen physician interviews and two physician focus groups, of 6-8 physicians each, (for a total of up to 30 physicians) were to be conducted using a semi-structured interview approach (see Appendix A). During interviews, the investigator used structured questions, following up as appropriate for further insight and clarification based on responses. Individual interviews with physicians were conducted in a private and neutral place of the physician's choosing, such as an office. Focus groups were to have five to eight members. Basic occupational data was to be collected from all focus group participants and the same questions were to be used. For reasons that will be discussed in further sections, focus groups could not be conducted and data collection was terminated after fifteen interviews. Interviews were kept to sixty minutes and were administered primarily in English. A Sri Lankan research assistant fluent in the local language of Sinhala was present in order to assist the primary investigator when needed for clarification of language and meaning.

The following topics were included in the structured interviews administered to the physicians: the general opinion about assistant medical officers, the role of AMOs in healthcare, physicians' opinion of the necessity of AMOs, and their outlook of the future of the Sri Lankan healthcare workforce. Interviews were audio recorded and recordings were transcribed at a later date. All interviews were conducted between May 23rd and July 1, 2012 by the principal investigator, in the presence of the Sri Lankan research assistant. Transcription was aided by the research assistant to ensure data was accurately transcribed. Data was then coded for themes for further analysis.

2.1 Subject Selection

A sample of fifteen physicians was selected from government Sri Lankan healthcare centers. Chosen from the government registry of current practicing physicians, the participants were mostly members of the government hospitals in the Galle District in the Southern Province of Sri Lanka. The sample was restricted to those who are currently practicing physicians in Sri Lanka, finished with their education and training. Furthermore, subjects were also restricted to those who had worked with AMO/RMOs for over one year. Subject selection was aided by the on-ground faculty advisor, and most selections and interview appointments were made by the advisor. In order to increase the probability of ensuring subjects had worked with RMOs, the search for participants was focused on peripheral units and clinics. outside of the urban center where RMOs were more likely to have practiced or be practicing. The fifteen subjects

had to be willing to participate in the study and they were required to identify themselves as fluent in English. Though not a concern given the characteristics of this population, any physician incapable of providing consent was not considered for the study.

2.1.1 Theoretical Saturation

The number of interviews for this study was set at 15 individual subjects and 15 subjects within the focus groups based on the idea of theoretical saturation. Theoretical saturation is recognized as achieved when similar responses are heard from most subjects. As with most studies, a sample size is set prior to the study based on several determinants. Qualitative studies depend heavily on the point of theoretical saturation in determining this sample size. Theoretical saturation here was considered the point of natural culmination to the data collection, when new themes or ideas no longer emerged from the interview responses. It was determined that, given similar qualitative research and the subject matter, the study would reach saturation within the fifteen individual interviews and two focus groups. As discussed later, it was unclear whether this study reached saturation, as plans for focus groups had to be abandoned, and conversations among subjects prior to interviews may have created contamination.

2.2 Political and Cultural Considerations

Due to differing procedural regulations in Galle, Sri Lanka, further unanticipated approvals were necessary before and during data collection. Prior to subject selection,

approval for the research study from the Regional Director of Health Services for the Galle District was required, and acquired. Furthermore, before every interview it was necessary for the on-site faculty advisor to set the appointment, introduce himself, and introduce the investigator and study. These considerations were all met prior to each respective stage of data collection in order to stay in accordance with Galle District conventions.

2.3 Risks and Benefits

There was minimal risk associated with this interview for the physicians. The physicians of the study were at no risk during their participation in this study; however, minimal risk was present when accounting for any accidental breach in confidentiality. In particular, participants in focus groups would have been notified of the risk of breach in confidentiality that could have occurred on the part of other participants. There were also no benefits for participation in the interviews.

2.4 Confidentiality

Physicians were notified and assured of the confidential nature of their interviews and information, and the investigator clarified that the information given would not be connected to their name once the interview was complete. Any quotations used would be anonymous and would not contain any identifying information. After the interview, physicians are no longer connected to the interviews and the recordings were coded so as to assign unique IDs to each participant and remove any identifiers

from being associated with the recordings. Recorded interviews, consent forms, and any other data were securely stored in the University of Ruhuna during time in Sri Lanka and, throughout the entirety of the study, only investigators listed on the IRB protocol will have access to study files and data. Transcription followed the completion of the interviews, and the recordings will remain secured for up to one year for reference purposes, before being destroyed. All other files will remain secure for at least five years after the completion of the study analysis. Subjects were also informed of their ability to discontinue the interview at any time and/or withdraw from the study. Subjects who withdrew were thanked for their participation and any information related to the study that was provided was not used at any further point in data analysis, other than to be noted as a withdrawn participant.

2.5 Compensation

Physicians were selected based on their willingness to participate and eligibility. Participation in this program was completely voluntary, and interview time and location was dependent on participant's convenience. There was no compensation for this study, though physicians had available to them a reimbursement for up to 500 Rupees for any interview-related travel expenses they may have accrued. Travel to each interview site was always attempted, however, so travel reimbursement was not necessary. Additionally, due to cultural norms, reimbursement would have only been offered if explicitly asked. At the end of the interview, physicians were presented with a small

non-monetary token of appreciation for their participation in the study, provided by the Duke Global Health Institute.

2.6 Informed Consent

Fifteen physicians were selected based on their willingness to participate in all parts of the study and upon meeting all eligibility criteria. Prior to the interview, physicians provided both verbal consent and signed written consent document in order to continue and be included in the study. Study subjects were given consent forms and the forms were thoroughly explained by investigator before the continuation of the interview. This study does not work with any vulnerable populations and was only conducted in English. Due to the nature of the study and the respective questions, there were no anticipated cultural issues that could have been raised with participation. If any cultural issues were detected, they would not affect participants due to their choice to participate and the complete confidentiality of their information (see below). See Appendix B for Consent Form

2.7 Deception

There was no deception involved with this study and the interviews.

2.8 Debriefing

Debriefing was unnecessary for this study. There was no deception involved with the interviews; therefore, there was no need for debriefing.

2.9 Data Analysis

2.9.1 Analysis Process

Following culmination of data collection, interviews were transcribed and checked for accuracy. After coding to ensure confidentiality within transcripts, data analysis began with the identification of the thematic groups. Themes were drawn from the interview responses and divided into separate files. Findings were categorized into these separate documents, outlier responses and findings were highlighted, and findings were then summarized in detail.

2.9.2 Subject Representation

In order to protect the identity of subjects, subject identification after interviews were limited to their assigned identification number (discussed above). As most of the subjects were the sole physician, or one of the few physicians, at their healthcare location, it was apparent that background information could also contain personal material. Therefore, transcripts were coded to remove any directly identifiable details, and specific information regarding the subjects' healthcare centers, gender, and personal background (education, work experience, etc.) were not included in the analysis of this study. It is important, however, to create a generalized identity for the participants, in order to better understand the source of the study results.

The fifteen physicians selected for the study were all currently practicing medical officers located within the Galle District of Sri Lanka. All were part of the main

government healthcare network of Sri Lanka, and it was not inquired whether they maintained a private practice on the side. Of the subjects, four were female and the rest were male, illustrative of a standard gender distribution of physicians outside of urban centers (the gender ratio of physicians in all of Sri Lanka is close to 1:1, but most female physicians remain within urban areas). A rough average of the years of medical experience of the subjects, from the 13 subjects who shared that information, was about 16 years, though experience of the subjects ranged from as low as 4 to more than 30 years. Lastly, all subjects were selected from locations with RMOs and, as such, were currently practicing in district hospitals, peripheral units, and clinics outside of the urban city center of Galle.

3. Themes and Qualitative Results

To begin the process of interviewing, several basic questions were asked in order to ease participants into the interview. They were asked to share details about their background, education, any further training, etc. Many chose to additionally discuss their time abroad working in international medical centers and/or their postgraduate studies that they completed after the one-year post-medical internship process. These questions were purposely focused on participants themselves in order to build a trust and comfort level for further inquiries, as well as give participants a chance to introduce and speak about themselves for a few minutes before proceeding to the depth of the interview.

3.1 Definition of a Registered Medical Officer

Following the basic introductory segment, participants were asked to illustrate their knowledge about the RMO training process. (From here, the assistant medical officer position will be noted as registered medical officers, or RMOs. The RMO position is a graduated position acquired after eight years of AMO service. As the RMOs have been practicing for at least fifteen years, given end of the training program in the mid-1990s, all have graduated from AMO to RMO.) Posed as a mere inquiry aimed at understanding the RMO training process better, the questions were molded to demonstrate the understanding participants have about the process, and highlight any misconceptions they may have regarding RMO education. Participants were asked to

describe their training process and their position in the healthcare system. An overwhelming number of physicians were unclear as to the exact educational background required for RMO qualification or were not overly accurate in their explanations, with a few physicians completely uncertain as to the RMO training process. Most participants were not aware of the curriculum, subjects, or qualifying process required.

Here, it must be accounted that the RMOs training process ended in the mid-1990s. Inaccuracies in the details of RMO education could very likely be exacerbated by the length of time that has passed since the last RMO batch was graduated. Given the lengths of time participants have been practicing and the interaction with RMOs, it was striking, however, that many were greatly unaware of any qualification details. Accounts of curriculum, in particular, widely varied and frequently led to implications about RMO capabilities. For example, an understanding that RMOs did not receive in-depth pharmacological training led, in several interviews, to the belief that their knowledge of drugs is not thorough enough for patient diagnosis and treatment. While assessment of RMO drug knowledge cannot be assumed and could not be measured, many of the participants did suggest that RMOs were well trained to work in pharmacies and/or drug stores. These varied accounts of RMO medical education made it difficult to form an accurate opinion of RMO educational background or their capabilities.

Following a description of RMO training, participants were asked to describe a registered medical officer. As a general description, participants described them as assistants, or lower-level workers. Several repeated that their tasks were minor and menial compared to that of M.B.B.S. degree physicians. RMOs' work was compared to that of nurses, and their ability and allowance to practice alone was frequently questioned. Though several participants later mentioned the use of the RMO position in rural locations, they maintained that RMOs should be confined to the out-patient department work, as they are presently. Seeing a need for assistant-nature help in peripheral units, however, did not prompt any physicians to voice a need for RMOs in the future as a physician's aides or hospital administrators.

3.2 Working with Registered Medical Officers

Asking about RMO training and for a description of RMOs prepared the interview for a more in-depth analysis of the participants' perspective of working alongside them. In order to gauge a clear understanding of this particular view, physicians were questioned directly regarding how they felt about working with them. While some chose to be vague with their responses, the direct nature of the question was designed to capture initial reactions to the question as well as allow for participants to answer in way they chose. For example, a participant might initially show hesitation in answering the question, and then choose to reiterate their description of an RMO instead of sharing the experiences of working with them.

This question did elicit some resistance during several interviews. While some participants were very clear regarding their experiences working with RMOs, others were hesitant to answer the question at all. This hesitation, while unclear as to the reason, could be indicative of issues with RMOs that subjects do not want to share. Several subjects were open to sharing their experiences with RMOs throughout their career, which did highlight some interesting qualities of the overall emotional tie physicians bear towards registered medical officers. When gauging initial reactions most, if not all, subjects were very careful in choosing the format in which they would answer their questions, filtering their words and thoughts before speaking. It was clear they understood the importance of the question, as opposed to the questions preceding it. As previously mentioned, several subjects chose not to answer the question directly, and some simply replied with quotes such as "fine" or "okay." A few subjects, however, were open to sharing their experiences, which allowed for the extraction of several key conclusions.

The RMO experience for many subjects was generalized. Any, even if just a few, experiences they had was applied to all RMOs. Very few subjects recognized that working with RMOs cannot be generalized into "easy or difficult" categories. Opinions regarding RMO relationships were not always attached to a specific person or incident, but rather morphed into an overall perception of a typical RMO working relationship. This lack of acknowledging individualism was applied frequently throughout

interviews and across interviews. RMOs were regarded as a class (as discussed later), and negative perceptions ran deep, while positive instances were considered almost as exceptions by many subjects. Poor experiences had clearly created some overarching generalizations about the RMOs and its members that, over time and through communication, had become rooted into the working relationship between the two occupational groups.

3.3 Quality of Registered Medical Officer Work

Subjects were asked to discuss the level of quality registered medical officers portray in their work. This proved to be a difficult question for many of the subjects to answer. Describing the quality of work RMOs provided in their day-to-day tasks seemed to provide a wide array of responses, ranging from descriptions of bed-side manner to knowledge of pharmacology. While some offered detailed examples of RMO work quality, others commented on the level of education and knowledge or the restriction to out-patient department (OPD) work. Though answers varied widely amongst the physicians, together the responses illustrated a basic compilation of a physician's perspective of RMO work quality.

The most common response to this area of inquiry was that the level of quality provided was "adequate." Regardless of examples to the contrary (exemplifying poor or exemplary care), subjects tended to suggest that they believed the level of quality was adequate for the work that RMOs perform, such as OPD, drug store management, etc.

For example, when asked about working with them, many stated that it is difficult to work with them because of a lower level of knowledge and how it interfered in their work. Several subjects suggested that RMOs could not always complete their tasks properly or that they did not know how to accurately diagnose patients. These same subjects would, when asked directly about quality, however, respond that RMOs performed adequately in the OPD area. Considering that RMOs have been restricted to mainly OPD work in most, if not all, health centers, it is difficult to determine whether subjects were referring to hypothetical situations of poor quality outside the outpatient department or specific instances of poor quality, or simply unwilling to directly state that the quality of RMO work was not acceptable or useful for their health center.

There were a few subjects who were open to admitting that the quality of work RMOs portrayed was, in their opinion, lacking, giving their own reasoning as to why or providing instances in which poor quality was apparent. As mentioned previously, there were several reasons given for the conclusion of lacking quality. The ability of RMOs to diagnose properly was questioned in several interviews; subjects stated that RMOs did not know how to properly identify illnesses, often prescribed antibiotics for inappropriate ailments, and had no knowledge of how to manage emergency, or even minor emergency, cases (an opinion voiced by some subjects; others did state that RMOs were capable of performing minor surgical tasks). No interviews showed that consideration was given to years of experience nor was it suggested that RMOs were

able to learn with time and improve their skills with work experience. The lack of a proper medical degree (for the purposes of this study, it is unclear still the level of difference between a medical degree and an RMO diploma) was credited on several occasions for the diminished quality presented. Though the understanding of the RMO training program differed across the interviews, it was clear that most subjects considered the lower level diploma received to be in direct correlation with the quality of care provided, for any task.

3.4 Level of Registered Medical Officer Tasks

Subjects were very open with sharing their thoughts on the appropriate roles and positions of RMOs in the workplace. As previously mentioned, the lack of a traditional medical degree possessed a more negative portrayal within the medical community. Physicians did not consider the training and diploma RMOs had to be sufficient for practicing medicine. As there are fewer RMOs, and all remaining are slowly retiring, RMOs have been restricted to the out-patient department in most healthcare units. More rural centers have expanded roles for RMOs out of necessity, but these responsibilities are not always met with approval by physicians. Additionally, as much of the general population is unaware of the difference between a medical officer and an RMO, as many RMOs still run private practices, like those of physicians.

Throughout the interviews, subjects made clear the definitive roles within the healthcare locations. Even in the more peripheral units, it was preferred that RMOs

remain in OPD work. Their abilities were clearly outlined to include OPD work, clerical work, and the heading of pharmacies. Despite level of experience or competence, characteristics that may differ among RMOs, subjects did not see the need to increase their responsibilities or expand their tasks. The role of the RMO in most of these units was similar to that of a low-level assistant, and they were frequently equated to such. While it is not possible here to assess whether RMOs can perform beyond their current task level or not, subjects agreed that their skill set was not sufficient many times to complete properly the tasks they are given.

3.5 Providing Additional Training

It was important, throughout the interview, to monitor the subjects' understanding of RMO abilities, as it was very indicative and contextualized many of their succeeding statements. As described in several other sections of this discussion, the subjects' knowledge of the RMO training program was not clear, nor did it seem sufficient for fully understanding RMO capabilities in the work place. They were unsure as to the classes taken, the level of medical training offered, and number of years required to have acquired the diploma or RMO status. Therefore, their responses regarding further training for current RMOs were considered with this in mind.

Physicians were asked if more training was necessary of RMOs. Subjects were allowed to give their thoughts freely on the topic of training for RMOs, whether it was beneficial, and whether further training would bring about changes. Most participants

agreed that more training should be available, and even required, for RMOs. As will be discussed, several reasons were given for the importance of further training, but the consensus was that more education was crucial for the RMOs.

Most subjects who proposed more training did not, however, feel that this training would change current circumstances. With more training they did not feel that RMOs would be capable of taking on more tasks. Several subjects went so far as to suggest that further studies would mold RMOs to be more at the level of physicians and fill in the educational gaps; but direct questioning of task expansion was still met with resistance, as they still felt RMOs would not be equipped for a physician's work, or to even share some of the responsibilities. Further training was to improve to quality of RMO work, bed-side manner and clinical knowledge, and was considered necessary for RMOs to do the job properly. Though many of these same subjects had previously suggested they had experienced mostly adequate quality of work from their RMOs, they answered that training sessions were necessary so that they may learn to complete their tasks properly. Furthermore, a few subjects continued to add that RMO knowledge was out-of-date and that training sessions would provide up-to-date information on drugs, procedures, illnesses, etc. Most did not mention or acknowledge that physicians, working just as long, also do not receive these sessions and might also exhibit out-of-date knowledge for their level of study. Only a few subjects admitted that, in regards to

the up-dating of practices and drugs, both physicians and RMOs should be constantly trained, both equally at risk for falling behind.

Though there was general support for the provision of further studies, there were a few subjects who saw further training provided to RMOs as a waste of time and government funding. As there is no longer a recruitment process for RMOs, and the AMO training program was discontinued over a decade ago, they felt it best to phase out the current RMOs and replace them quickly with newly graduated physicians. While most others were considering the present situation of patient care and RMO abilities, these subjects were simply more concerned about the future of the healthcare system and patient care provision. Therefore, their outlook regarding the practicality of providing training to RMOs given the current status of healthcare funding in the area should not be overlooked or discounted.

3.6 Perception of Contentment

As this study looked at the physicians' perception of the RMO occupation, there is no way to gauge the perspective of the RMOs themselves. Some subjects did offer, however, their idea of the RMOs thoughts regarding their role. The assessment physicians provided suggested that RMOs were actually content in their current position. Physicians reason that, with their limited abilities, RMOs are more comfortable having little responsibility and reporting to a higher medical professional in order to ensure the best care. Many mentioned that RMOs are quick to refer patients to the

physicians of their peripheral unit or consultants and specialists at other locations.

Restricted by their capabilities, according to physicians, RMOs prefer to not be considered as the physician, but rather as the assistant running the OPD.

3.7 Hierarchy

It became apparent that there was an unspoken ranking of occupations. Just as in many countries, a medical degree commanded a certain level of respect. Physicians in Sri Lanka describe their occupation as one with tough decisions and demanding schedules; but with that came the perks of authority, respect, and satisfaction.

Physicians, it was evident, preferred to usually adhere to this occupational hierarchy, suggesting that it kept tasks running smoothly within their unit. The chain of command is understandably an important aspect of running a health center, and physicians stated that, in a properly followed chain, nurses and RMOs would answer to physicians, who would then consult specialists if deemed necessary.

Subjects had several complaints surrounding RMOs' deviations from this hierarchy. Most often, subjects suggested that RMOs would not notify them of more serious patients, but instead refer patients directly to consultants. While seemingly a simple break in the command chain, subjects felt disrespected and disregarded. Moreover, a few subjects implied that RMOs purposefully bypassed their authority continuously. This was further exemplified in the description of RMO relationships with more junior physicians. While some subjects already found it difficult to work alongside

RMOs, they suggested that junior physicians who might be assigned to a health center with an RMO would most likely not receive any respect from that RMO. Subjects stated that RMOs considered themselves more experienced than new medical graduates and refused to answer to physicians younger than them. Subjects were clear that, in a hierarchy system, new graduates are still physicians and should, therefore, be ranked higher than RMOs. The occasional RMO refusal to adhere to an occupational hierarchy, instead of age and, perhaps, experience, has resulted in furthering the poor perceptions physicians hold regarding their RMOs.

3.8 Future of Registered Medical Officer Profession, Physicians, and the Sri Lankan Healthcare System

Near the end of the interview, physicians were asked to describe their outlook regarding the future of the RMO profession, their own profession, and the healthcare system of Sri Lanka. The responses received were surprisingly similar across the interviews and highlighted some key aspects of the movement toward a new healthcare delivery framework in Sri Lanka. When addressed with challenges that might arise during this transition, however, most physicians did not seem to foresee any roadblocks.

Subjects gave many reasons that led directly or indirectly to the suggestion that they felt RMOs were unnecessary for the healthcare system, currently and in the future. Their understanding was that, within the current growing healthcare system, RMOs were widely over-utilized. It was repeated several times that the quality of care provided by the RMOs was not sufficient enough for even basic care (though earlier

many of the same subjects suggested quality of care was adequate), and that RMOs did not function well within the current healthcare structure. As the system slowly moved forward to offering what they described as higher quality care, physicians would be the only providers capable of such levels of care. Additionally, many of the subjects stated how difficult it was to work with RMOs and retiring the RMO profession would be in the best interest of both patients and physicians.

Most commonly, subjects suggested that the useful attributes RMOs provided for the healthcare system were simply no longer applicable. With the growing number of medical graduates, subjects believed there would soon be enough physicians to fill the gaps once held by the RMO profession. Offering better care and more advanced knowledge has been considered a priority for Sri Lankan health officials, and graduating larger classes of medical officers (physicians) would help to eliminate the prior need that existed for RMO participation. With each passing year, graduates would replace retiring RMOs until there were no longer non-physicians working in any of the healthcare units.

This led to further questions about the feasibility of the new structure. Discussed further later in this manuscript, it was important to understand whether the subjects saw any possible shortcomings, or problems, that might arise. For example, subjects were asked if physician retention would become a problem; with so many new physicians, and a revamped medical study program, would graduates choose to intern and practice elsewhere for higher pay? Would the growing number of medical officers and their

salary become a burden on the already somewhat strained universal healthcare system? These follow-up questions were included in the later interviews; the first few subjects were not able to share their thoughts on this and, of the later interviews, few choose to do so. Most brushed off the question, stating that there would be no shortcomings. Despite posing possible problems, subjects responded that there would be no problem, enough physicians, and there was no need for RMOs any longer. Only one subject chose to acknowledge the question directly, admitting that there would be problems that arise, and that the system would need a dramatic restructuring to accommodate the new graduates and still continue to offer quality care. As discussed in the next section, it is difficult to determine whether a lack of responses was due to simple misunderstanding or a deeper desire to not respond.

4. Discussion

4.1 Initial Challenges

The first challenge encountered when the research was proposed was the lack of information available on the profession of registered medical officers in Sri Lanka.

Though there were comparative studies written about similar positions introduced in other countries, and even basic descriptions of RMOs, it was difficult to find studies outlining the depth of the RMO introduction, any value of their profession, or the reason for ending their training program. Furthermore, the existing studies are difficult to find, as the profession goes by many titles, and mention little more than their role in expanding healthcare delivery to peripheral units. Therefore, literature review and initial study outline was constrained by the information available. Throughout data collection in Sri Lanka, follow-up interview questions were adapted from the semi-structured instrument to include new information learned.

The initial challenges met when beginning the on-site research and interviews were those dealing with the logistics of data collection, the adjustment for cultural differences, and the difficulties that arise before and during the start of data collection. It was crucial to enlist subjects who not only met the outlined criteria, but also felt comfortable enough to give an interview and felt knowledgeable enough about the RMO profession. Finding physicians proved more difficult than anticipated as many had not worked with RMOs, and those who did were out in peripheral units, requiring

longer travel times. Once subjects had consented and interviews started, it was apparent that language and terminology barriers would pose some minor complications. With the help of a research assistant, questions were adjusted to be more conversational to ensure better understanding, in order to create a smoother interview experience for subjects.

4.2 Limitations, Non-participation, and Further Challenges

There were several limitations to the conducted research. The most obvious is the difficulty in removing all personal bias. Though it was consciously monitored, it would be natural if some questions may have seemed leading. Though I held no strong preconceptions when entering the research, it is difficult to participate in such research and not formulate opinions. Throughout the interview process, however, neutral interviewing was attempted and subjects were given an impartial description of the research and purpose. I avoided, as much as possible, opinionated phrases, leading words, and non-neutral tones. Still, as with any qualitative research, it must be acknowledged that human interviewing has unavoidable imperfections.

Other limitations were more aligned with the research itself, specifically non-compliance to the research, saturation, and contamination. Saturation is considered a natural point of culmination and it was anticipated that this study would reach that point within the fifteen interviews or, had they been performed, the two focus groups. There should be some inclination, however, as point of saturation approaches and it is not likely to reach that point suddenly. It was about two-thirds of the way, and less than

one month, into the study that suddenly it seemed all answers given were similar to that of some previously distinct interviews, and that the level of care needed to answer some of the more difficult questions had been anticipated. Several answers seemed oddly rehearsed and, though they were even original, they were rather carefully constructed. The natural point of saturation for this study, therefore, could not be identified and, rather, the distinct possibility of contamination was recognized.

Recognizing contamination proved that there were to be further limitations to the research. One particular interview, however, finally indicated that this was not saturation necessarily but a contamination due to subjects' outside discussions of the research. This subject performed their interview almost instantly after sitting down, without any questions or even allowing time for the recording to begin. The level of detail they possessed regarding the topic and questions being asked were demonstrative of definite contamination, signaling that they had previously spoken with others who had participated in the study and knew how to respond. The subject was kind enough to re-start the interview once he had signed the consent form and recording device was started. The subject had been unaware as to the consent and recording process, as they had started the interview so abruptly. Further evidence of contamination was clear with the next interview. Having previously visited the subject to set-up an interview, they had been extremely excited to speak regarding the poor experiences the subject had with their RMO. It was difficult to restrain the subject then from giving the interview due to

their sheer excitement. Once returning for that interview, however, it was as if interviewing a different individual. The subject's responses were completely different from those previously given. It is unclear why their responses had changed, because it had been made clear that participation in the study allowed for use of all the comments, and was not restricted to those on tape. It was apparent, however, that contamination had played a definite role in preparing the subject for the interview for, after some time, it was apparent the subjects had been speaking to each other prior to the interviews.

This contamination, among other reasons, led to the eventual decision to not conduct the focus groups. While it was a concern that subjects had begun to speak to each other regarding the interviews, the greater concern was in how they communicated to each other without knowing the others and how they learned of the study and others' involvement. A limitation to the study, the inability to continue with the focus groups, though limiting the research itself, did not limit the information collected regarding the implications of RMO research in the area.

Non-participation is usually expected and not normally indicative of any details important to the research. Many selected subjects do not want to be interviewed for personal reasons, do not wish to provide the time, or simply do not feel they know enough about the topics. Here, however, non-participants were nearly as important in their lack of interview as were the actual chosen subjects. The first physician to reject the offer to participate in the research met all requirements but, as the individual had been

only practicing for a little over a year, did not feel knowledgeable enough to answer questions regarding registered medical officers. This being a natural example of non-participation, it was assumed that several more cases such as this would arise. The remaining cases, however, were very different. One individual selected for the study lectured angrily at length for over thirty minutes regarding the RMO profession, but then did not consent to participation in the study. Though their comments could not, therefore, be included in the study itself, the reasons for which they rejected the invitation to participate can be examined. As discussed in the Political Implications Section, a suspicion of the research, and a greater suspicion of the investigators and their country of origin, seemed to lead them to not participate. There was some indication that suspicion of United States government involvement hindered the ability to recruit some individuals. This was the first of many indications that led to the understanding that there may be a more political angle to the RMO program that had not yet been uncovered, and that physicians were concerned that involvement from other countries would disrupt the current status of the healthcare system. It was not surprising, therefore, when the next subjects declined to participate.

4.3 Political Implications

Once interviews had started, further time spent in Galle revealed possible political implications surrounding the RMO profession that had not previously been recognized. First, it was apparent that there were strong unions working for the

preservation of both physicians' and registered medical officers' occupations. While the physicians' union was naturally involved with maintaining and advancing the current methods of healthcare delivery, the purposes and goals important to the RMO union were less clear. Based on conversations outside study interviews, the RMO union promoted, not the reinstating of the training program, but the maintenance of the currently practicing RMOs. During the data collection period, there was a rally in which several RMOs and minor staff participated. Though the nature of the rally was unclear due to language barriers and observational restrictions, the political overtone of the meeting was strong. Second, politics served an important role in the interview responses. As this study looked at the perceptions of physicians toward RMOs, political involvement of RMOs was important, as physicians perceived them as old political holdovers. Though not supported through literature, a few subjects suggested that the RMO profession had been created as a politically aligned profession, used to render electoral support during the height of the RMO training program. Whether there is truth in these suggestions, it may account to some degree for the disconnect between the RMOs and physicians.

The possibility of political connection seemed to ignite suspicion in several subjects and non-participant physicians. While politics associated with RMOs was mentioned a few times by subjects, physicians who turned down the invitation to participate expressed suspicion about the political associations of the investigators. As a

few of the investigators are citizens of the United States, whether the US government was involved in this study was a reoccurring question posed by many Sri Lankans encountered during data collection, including from other medical professionals and staff. Though only basic study introductory details could be shared (no personal or interview content was ever shared outside of investigators), a study regarding the RMO profession, one that was considered a "dying profession," incited immediate apprehension regarding the political arena of the study. Nearing the end of the first month of data collection, it was clear that these apprehensions had been voiced amongst subjects, other physicians, and perhaps taken to higher authorities. At this phase, under advisement of the on-site faculty advisor, interviews were promptly completed and focus groups were not undertaken, as the legitimacy and approval for the research seemed to be in question.

4.4 Overall Discussions

Prior to the interviews, there was not really a preconception regarding what the working relationship was between the RMOs and the physicians, the actual position and value of the RMO, or the need for the RMO in the future. As mentioned before, the point of this research was to gain an understanding of the true purpose of the RMO profession, to some extent evaluate their contribution, and consider the relationships with and perceptions of physicians have when working with RMOs. The results

acquired from the interviews were interesting, and many times, not at all what was anticipated (See Section 4.3 for political implications).

To initially address the value of the RMO, it is still rather segmented. While the interviews did not shed light on their actual capabilities, as there was no direct interaction with RMOs, it is clear that they are filling gaps that exist in the healthcare system currently. RMOs provide care in peripheral units, rural locations that do not have access to advanced medical facilities or even physicians. In extremely rural locations, RMOs can serve in the same capacity as a physician would and does, given the tools available and the lack of staff. For example, one unit had only two physicians and one RMO available to the entire clinic and wards. In these locations, RMOs seem to be crucial, given the demand for medical personnel. Though lacking the same level of initial knowledge, RMOs are equipping units with a doctor substitute where physicians are unavailable.

The working relationship between physicians and RMOs seems to be characterized by poor experiences and preconceptions. Several of the difficulties mentioned in the interviews were personality characteristics which, it could be assumed, cannot be applied to an entire occupational group. While the lack of knowledge may well be a valid concern about registered medical officers, it seems unlikely that RMOs as a whole only "care about money," refuse to work alongside physicians, or create a difficult working environment. The level of distaste some subjects harbored for RMOs

was disconcerting and suggests the challenges of the working relationships that may exist in some healthcare centers.

The decision to not respond to several questions within the interviews was also key in understanding both the discouragement of the RMO position and the self-preservation of the physicians themselves. It was clear that, during many questions subjects were careful to avoid answers they felt might jeopardize their image, or even their jobs. Those who had only poor experiences with RMOs were usually careful not to discuss in detail their antipathy, casting more attention on the inability of RMOs to do their job. Those who had no strong opinions were careful not to speak positively about the RMO profession or admit to any value that the profession may have, now or in the past. Though the RMO training program had been discontinued, it seemed there is still residual concern that the program might be reinstated or that RMOs pose challenges to physician careers.

The conversations regarding the future of the RMO profession, in fact, raised several inquiries that were either not addressed by the physicians, or perhaps the questions were not always understood. The current role of the RMO---filling in the gaps in healthcare delivery---was such for several reasons. First, of course, is the necessity to provide medical professionals where staff is in short supply and the demand for basic care needs to be met. While it is true that, ideally, more graduating physicians would fix the issue of a short-staffed peripheral unit, observation and interviews suggested they

might not. RMO positioning also allowed for physicians to choose not to practice in rural clinics. Subjects discussed the desire of many to stay within the confinement of urban postings and, though postings lasted for four years and transfer was "random," many admitted to requesting to stay in an urban position longer or refusing to go to a rural unit. Rural physicians shared that small staff numbers were due to physicians not coming out to their units. If accurate, the large number of graduating physicians, many of whom would also likely prefer urban postings, may not improve delivery in rural areas without enforcement and restructuring (addressed by only one interviewee).

Last, the physicians interviewed did not identify issues that may arise in the future healthcare system. Given the constraints of a universal healthcare system, there is some question as to how the system would be able to accommodate new physician graduates. Registered medical officers provide a less expensive alternative to offering basic care in the rural clinics where that is as much as can be offered without more equipment or resources. More physicians, while perhaps improving the likelihood of patient care, will likely command higher salaries, and possibly incentivized rural postings. These potential problems were only directly tackled by one subject.

Conclusion

In the search to uncover the perceptions of Sri Lankan physicians towards the registered medical officers, the study perhaps revealed much more than just the working relationships between two occupations. The purpose of uncovering the relationships was to understand better the position of the RMO and, in a world increasingly utilizing mid-level practitioners such as U.S. physician assistants, the reasons behind their elimination. It seems that the RMO position, once important to healthcare delivery in Sri Lanka, is now deemed unnecessary and characterized by low quality care by many physicians. With a growing number of medical graduates, physicians no longer see a value in the RMO service. It should be explored, however, if the healthcare system can accommodate the growing initiatives, such as the provision of more physicians' salaries, incentivized rural appointments, and outfitting rural locations with better resources, and if the RMO service is truly no longer useful. Additionally, it would be important to consider if, without RMO care, there would be a noticeable difference in the level of basic available care. Further studies should explore the economic impacts of both professions, and the growth in number of physicians, and consider whether the change in the level of care quality for the current RMO responsibilities merit the attached pay differential. With RMO salaries only at about two-thirds of that of starting physicians in Sri Lanka, and given their ability to provide basic care, it should be considered whether

the system would always necessitate a physician and the accompanying costs for such roles.

Through this study to investigate physicians' perspectives regarding RMOs, the perceptions revealed suggested that the low regard paid to RMOs was indicative of the much larger proposal to slowly attempt to replace the RMOs with an overall higher level profession. Many physicians considered RMOs to be of lower quality and difficult to work with, posing no value to future healthcare delivery. In a setting where the perception of RMOs is relatively poor, it raises the question of whether the healthcare system would, if it were ever necessary, revisit the RMO program and service as a viable option for maintaining access to care, especially for vulnerable rural populations.

Appendix A: Interview/Focus Group Structure

1. Describe your current position/discipline.
 - a. How long have you been working in this position?
2. Describe your education and/or training.
3. How would you define or describe an assistant medical officer? Registered medical officer?
4. Tell me the first words that come to your mind when you hear the term “assistant medical officer”.
5. What do you think is the role of physicians in Sri Lanka’s health care system?
6. What do you think is the current role of AMO/RMOs in Sri Lanka’s health care system?
 - a. What role could assistant medical officers play in Sri Lanka?
7. What is your opinion of the quality of care provided by AMOs?
8. What kinds of tasks might be appropriate for AMOs?
 - a. What about prescribing?
9. What is your assessment of health care in Sri Lanka?
10. Are there enough physicians in Sri Lanka?

Appendix B: Consent Forms

B.1 Consent to Participate in Interview

You are being asked to participate in a research 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 healthcare 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. The interview is expected to take up to sixty minutes of your time. We aim to have discussions on this topic with 30 physicians 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. We will make every effort 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 separate from the data and only study personnel will have access to it.

You may refuse to answer any questions and may withdraw from the study at any time. 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 to you 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.

Ask any questions you may have about this research at any time during the interview. For future questions about the study, complaints, concerns or suggestions about the research, please contact Dr. Vijitha De Silva at 077760970 or Dr. Justine Strand de Oliveira at Justine.strand@duke.edu. If you have questions about your rights as a research participant, you may contact the Chair of the Human Subjects Committee at Duke University at ORS-Info@duke.edu.

STATEMENT OF CONSENT

"The purpose of this study, procedures to be followed, risks and benefits have been explained to me. I have been allowed to ask questions, and my questions have been answered to my satisfaction. I have been told whom to contact if I have any other questions or concerns. I know that I can stop participation and withdraw from the study at any time."

Signature of Participant _____ Date _____

Signature of Investigator _____ Date _____

B.2 Consent to Participate in Focus Group

You are being asked to participate in a research 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 healthcare profession. You are invited to participate in a focus group discussion with other physicians, in which you can share your thoughts and opinions on this subject. Your participation would be entirely voluntary. The focus group is expected to take up to sixty minutes of your time. We aim to have discussions on this topic with 30 physicians total. Information gained from these discussions will be summarized in a report and research papers. The focus group will be audio recorded.

There are no physical risks associated with participating in this study. We will make every effort 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 separate from the data and only study personnel will have access to it.

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Ask any questions you may have about this research at any time during the focus group. For future questions about the study, complaints, concerns or suggestions about the research, please contact Dr. Vijitha De Silva at 077760970 or Dr. Justine Strand de Oliveira at Justine.strand@duke.edu. If you have questions about your rights as a research participant, you may contact the Chair of the Human Subjects Committee at Duke University at ORS-Info@duke.edu.

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Signature of Participant _____ Date _____

Signature of Investigator _____ Date _____

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