Retaining doctors in rural Timor-Leste: a critical appraisal of the opportunities and challenges

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Abstract Timor-Leste is in the process of addressing a key issue for the country's health sector: a medical workforce that is too small to provide adequate care. In theory, a bilateral programme of medical cooperation with Cuba created in 2003 could solve this problem. By the end of 2013, nearly 700 new doctors trained in Cuba had been added to Timor-Leste's medical workforce and by 2017 a further 328 doctors should have been trained in the country by Cuban and local health professionals. A few more doctors who have been trained in Indonesia and elsewhere will also soon enter the workforce. It is expected that the number of physicians in Timor-Leste in 2017 will be more than three times the number present in the country in 2003. Most of the new physicians are expected to work in rural communities and support the national government's goal of improving health outcomes for the rural majority. Although the massive growth in the medical workforce could change the way health care is delivered and substantially improve health outcomes throughout the country, there are challenges that must be overcome if Timor-Leste is to derive the maximum benefit from such growth. It appears crucial that most of the new doctors be deployed in rural communities and managed carefully to optimize their rural retention.

Abstracts in عربي, 中文, Français, Русский and Español at the end of each article.

Introduction

The retention of health workers in rural areas has been the focus of increasing attention in recent years, particularly since the World Health Organization (WHO) launched its programme for "increasing access to health workers in remote and rural areas through improved retention".[1] Possible interventions for recruiting and retaining health workers in rural areas include financial incentives, compulsory service in rural communities, professional support schemes and priority access to postgraduate training.[2] Thailand insists that all physicians work for three years in rural areas, while both Australia and South Africa provide financial incentives specifically to attract physicians to rural areas and retain them there.[3]

Timor-Leste is a lower-middle-income country. In 2010 it had a gross national income of 2220 United States dollars (US$) per capita and a population of 1.1 million.[4] In the same year, about 41% of the population earned less than US$ 0.55 per day and therefore fell below the national "poverty line".[4] Per capita expenditure on health care has been steadily increasing over recent years: from US$ 18 in 2006 to US$ 31 in 2010.[5]

In 2010, Timor-Leste had 557 maternal deaths per 100 000 live births, only 22% of births occurred in health facilities.[6] The insufficient number of skilled health workers is a major contributor to the country's generally poor health conditions. Only 1407 doctors, nurses and midwives were employed in the public sector in 2010.[5] The corresponding density of health workers – 1.3 per 1000 population – fell well below WHO's recommended lower threshold of 2.3 per 1000 population.[5,7] The shortage of health workers, although a national problem, leaves the largest gaps in health care in rural and remote areas. About two thirds of the country's doctors are Cuban and members of the "Cuban Medical Brigade". Several other expatriate doctors provide clinical services, mentoring and clinical staff supervision.[8]

In this article we aim to contribute to the current health policy debate on the retention of health professionals in rural areas. We analyse the opportunities for – and challenges to – the rural retention of doctors in Timor-Leste, particularly of the many new doctors who have either been trained within Cuba or by members of the Cuban Medical Brigade in Timor-Leste. While we argue that the deployment of new doctors to rural communities is crucial to adequate health-care provision throughout Timor-Leste, the long-term availability of doctors in rural areas will still depend on the taking of concrete steps to improve the retention of rural doctors.

Health policies and human resource development

The government of Timor-Leste recognizes the influence of various social determinants – e.g. education, housing, water and sanitation – on health and therefore seeks to integrate the health sector with several other sectors. *The national health sector strategic plan for 2011–2030* embodied the government's goal of providing comprehensive, free primary care and hospital services to all Timorese until 2030.[9] Investment in human capital is one of the four priority areas identified in the plan as critical for the efficient delivery of health services.[9]

Improvement of Timor-Leste's human resources for health has been high on the national government's policy agenda. Soon after the country achieved independence in 2002, the Ministry of Health prepared a *Human resources master plan for 2002–2011* to guide future development of the health workforce.[10] A year later, a major bilateral agreement between the governments of Timor-Leste and Cuba resulted in the Cuban government offering scholarships to study medicine in Cuba to nearly 700 Timorese students.[11] Simultaneously, the Cuban government sent around 230 doctors to work in Timor-Leste.

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Table 1. **Cuban training of Timorese medical students, by year of enrolment, Cuba and Timor-Leste, 2004–2011**

Enrolment year[a]	No. of students enrolled		Expected graduation year[b]
	Cuba	Timor-Leste	
2004	18	0	2010
2005	8	55	2011
2006	453	47	2012
2007	198	46	2013
2008	0	19	2014
2009	0	60	2015
2010	0	41	2016
2011	0	60	2017

[a] In six-year Bachelor of Medicine course.
[b] Students who fail their final examinations are permitted to retake them the following year. In 2010, 2011 and 2012, 18, 62 and 406 of the students graduated, respectively.

Table 2. **Deployment of 406 new Cuban-trained Timorese doctors, by sex and area of deployment, Timor-Leste, 2010–2013**

Deployment	No. of doctors		
	Female	Male	Total
District			
Aileu	12	11	23
Ainaro	11	11	22
Baucau	19	26	45
Bobonaro	14	21	35
Cova	16	13	29
Dili	26	9	35
Ermera	22	12	34
Lautem	13	20	33
Oecusse	11	13	24
Liquica	14	11	25
Manatuto	19	12	31
Manufahi	8	18	26
Viqueque	14	21	35
Other			
Police	ND	ND	2
Military	ND	ND	7

ND, no data.

At the time of writing, more than 270 Timorese students are being trained as doctors in Timor-Leste, in a medical education programme being run jointly by Timor-Leste's National University and the Cuban Medical Brigade (Table 1).[9]

If all of the Timorese currently being trained as doctors are employed by Timor-Leste's health system, the number of medical doctors will be more than three times as high as in 2003.[11] Several hundred Timorese students are also being trained as nurses and midwives at Timor-Leste's National University or Institute of Health Science. Other Timorese students are being trained as public health officers, either in Timor-Leste – at the Universidade da Paz or the Universidade Dili – or in overseas institutions.

Although Timor-Leste's Ministry of Health does not currently have a comprehensive development plan for the country's human resources for health, the *National health sector strategic plan for 2011–2030* contains a "road map" for the development of health professionals at each level of the health system.[9] Accreditation and registration of medical doctors are the responsibility of the Ministry of Health and are governed by a decree issued in 2004.[5]

The new Cuban-trained doctors are deployed mostly in rural areas – in line with the ethos of the Cuban training programme – although there is no specific legislation that commits such doctors to rural practice. Each such doctor does sign a contract with the government and agrees to work in Timor-Leste's public health sector for at least six years.[12] Between 2010 and 2013 nearly 500 graduates from the Cuban programme – including 406 who graduated in November 2012 – were deployed across the various districts of Timor-Leste (Table 2).

There is no firm timetable for the withdrawal of the Cuban Medical Brigade from Timor-Leste. At the moment, the memorandum of understanding covering the medical cooperation between Cuba and Timor-Leste is renewed each year by the two governments. Some members of the Brigade are expected to remain in Timor-Leste – perhaps to assist in specialist training – after all of the new Cuban-trained doctors have been deployed.

Opportunities for deployment and rural retention

The Timor-Leste Ministry of Health has estimated the number of health workers that would be required to roll out the *Basic services package for primary health care and hospitals*, adopted in 2007, in an effective manner.[13] The current goal of the government is to employ one generalist doctor, two nurses, two midwives and a laboratory technician in each of the 442 villages in the country, as well as to staff community health centres and referral hospitals "adequately".[9] Several opportunities exist for the Ministry of Health to achieve this goal.

Sufficient number of medical graduates

The large number of new medical graduates joining the workforce offers a great opportunity for the government to deploy doctors to rural areas. With nearly 1000 new graduates coming from the Cuban medical programme – and a few more from training overseas in countries other than Cuba – the Ministry of Health already has a sufficient pool of doctors to meet its immediate human resource targets. The numbers

of advertised vacancies for generalist medical officers in urban areas will drop considerably once all the new doctors have been deployed – making it difficult for doctors serving in rural areas to find public sector positions in urban centres. Some opportunities for urban employment will arise as expatriate medical staff exit Timor-Leste's health system, but the Ministry of Health expects the withdrawal of such staff to be slow and methodical.

Although the Ministry of Health has predicted that 20% of the newly trained doctors will be lost to emigration, the actual level of attrition might be much lower for several reasons. First, there is strong political will to employ the new doctors. A guarantee of employment in the public service could reduce the risk of emigration substantially, especially if coupled with deployment close to the doctors' families and home towns. Second, the Ministry of Health offers an incentive package for remote area service that is likely to benefit the new doctors and may motivate them to remain in rural practice. Finally, the general ethos of the Cuban training programme – which appeals to the students' community spirit and emphasizes service to the public[14] – may counter any aspirations to emigrate.

Suitability of medical training for rural settings

The Cuban model of medical education integrates the concepts of prevention, social determinants of health and active community partnering into curriculum design. It trains doctors in primary health care and uses a comprehensive clinical, epidemiological and social approach that involves health promotion, disease prevention, diagnosis, treatment and rehabilitation, with much community-based "service learning".[15–17]

Students training in Cuba undertake a year-long pre-medicine course that includes lessons in Spanish and basic sciences and is followed by a 5-year integrated medicine course.[18] The students from Timor-Leste spend their final two years of training back home, under the supervision of the Cuban Medical Brigade. Some Timorese students are trained as new doctors by Cubans without leaving Timor-Leste.

The overall quality of the Cuban training programme has not been independently assessed, but policy-makers in Timor-Leste believe that it is at least adequate for the needs of the local health system.[12]

Absence of a medical council

Medical councils ensure that the statutory requirements for the registration and re-registration of doctors are met.[19] Although the lack of a medical council in Timor-Leste may be seen as a barrier to the country's attempts to improve the quality of health care, for the new graduates and the Ministry of Health it may be an advantage, at least in the short-term. The Cuban-trained doctors could easily face opposition from a medical council regarding their competence, as observed in several other countries.[20]

In the absence of an operational medical council, Timor-Leste has not encountered any public opposition to the Cuban-trained doctors – although there was, initially, some passive opposition to the Cuban Medical Brigade.[21] A medical council for Timor-Leste is in the pipeline. However, given the high-level political support for the Cuban training programme, it is unlikely that such a council will pose any serious threat to the government's plans to improve the rural retention of doctors.[14]

High-level altruism

In recent video documentaries on the Cuban medical cooperation with Timor-Leste, the new Cuban-trained doctors spoke about their wish to serve their communities, help improve health and work for the "public good".[22] Most of the Timorese entrants into the Cuban training programme were selected from underprivileged backgrounds. The medical cooperation with Cuba has therefore provided the new doctors with the chance to make major achievements in their lives, for which the only cost is a moral commitment to work in underserved communities.[23] Many of the graduates who featured in the recent documentaries perceived working in underserved communities as a worthy moral commitment. Such altruism is, however, likely to wane over time. An appropriate mix of incentives – such as deployment close to family, remote area subsidies, effective payroll management and opportunities for postgraduate training – may help to sustain or, at least, prolong a doctor's service in rural areas.

Challenges for deployment and rural retention

Finance

Finances pose perhaps the largest single challenge to the retention of doctors and other health workers in rural areas. The Ministry of Health is already experiencing sharp increases in personnel costs. For example, the Ministry's spending on salary and wages at the district level increased from 34% of the total district health budget in 2008 to 60% in 2011.[5] With the deployment of hundreds of new graduates in 2013 and more expected in the near future, the Ministry will continue to experience an upsurge in personnel costs, including salaries, allowances and remote area subsidies.

The Timor-Leste economy is potentially strong and may be able to absorb these increased costs in the short-term. However, as a new nation emerging from conflict, Timor-Leste has many other developmental challenges that require sustainable public financing – in direct competition with any health financing. Public health expenditure declined from 7% of total government expenditure in 2007 to 2.9% in 2011.[24,25] The retention of large numbers of doctors in rural areas might require a considerable expansion of the fiscal space for health.

Career development

The need and demand for specialist training and continuing professional development are a threat to Timor-Leste's rural retention goals. Timor-Leste has a critical shortage of medical specialists. Only nine specialists were employed by the Ministry of Health in 2010. In an informal discussion, several junior doctors who were among the first to be trained in the Cuban programme said they were keen to undertake specialist training. While this keenness may be due to the exposure of this particular batch of doctors to clinical practice at the National Hospital – and is perhaps not representative of the attitudes of many new doctors – any aspirations for specialist training and continuing professional development will require careful management.

Timor-Leste's National University – in collaboration with the Ministry of Health and the Royal Australasian College of Surgeons – already delivers

postgraduate training in general surgery, obstetrics, paediatrics, anaesthesia and internal medicine.[26] After at least two years of service, doctors can enrol on this 18-month diploma course, which is seen as a pathway to specialization. The Ministry of Health is exploring possibilities for future international collaboration for specialist training with Cuba, Indonesia and several other countries.

Supportive supervision

Constraints in managing the performance of the health workforce, particularly inadequate supportive supervision and limited access to specialist advice, are a serious problem and a potential threat to the rural retention of the new doctors. Currently, the supervision of doctors and other health workers is the responsibility of district-level health managers and health management teams.[27] Most of the district-level managers are nurses and midwives who would struggle to provide adequate clinical supervision to new doctors. All of the senior clinicians who could provide useful supervision and mentoring are Cubans who are currently expected to return home as the new doctors are deployed.

The deployment of a large cohort of young doctors without an established support hierarchy of more senior doctors to provide clinical supervision does not augur well for patient safety, given the potential risk of medical errors. A lack of supervision may also increase the new doctors' sense of professional isolation,[28] which could undermine any retention efforts. The Ministry of Health intends to provide training in management and leadership to some of the new doctors, to enable them to assume managerial roles and provide technical support to fellow doctors. An agreement with Cuba to engage senior medical officers from the Cuban Medical Brigade in the provision of supportive clinical supervision may well be necessary.

Health infrastructure and logistics

The health infrastructure in rural Timor-Leste is very underdeveloped despite considerable government investment. There are five district referral hospitals, 66 government-owned community health centres, 42 maternity clinics and 193 health posts.[9] The current number of health posts is far short of the planned 442 and not all of the posts that do exist meet the Ministry of Health's minimum standards deemed necessary to support a doctor. The Ministry of Health intends to place three doctors in each community health centre and one in each health post meeting the minimum standards. The inadequate standards of many health units may eventually result in underemployment of some of the new doctors and in inefficient use of doctors' time – to the detriment of motivation and retention.

The health service's management system for procurement and supply also needs a major overhaul. Drugs, other supplies and equipment are in short supply in most rural facilities[12] – in sharp contrast to the situation in Cuba, where most of the new doctors were trained.[29] The referral system in Timor-Leste needs to be streamlined to make it easier for the doctors working in health posts to refer patients to community health centres and hospitals.[9] It is also crucial that adequate resources for environmental health activities be made available to the new doctors.

Policy implications

The results of the present appraisal raise several policy issues for the government of Timor-Leste – and not only for the health sector. A debate about sustainable health financing is needed in Timor-Leste. The government is committed to providing free health care until 2030, but what happens afterwards? Given the general level of poverty in Timor-Leste, it is important to ensure equitable access to health services. However, such a goal requires substantial public financing that may not be sustainable in the long term because of competing problems. A strategic plan for health financing – including social health insurance – is urgently needed.

Collaboration between Timor-Leste's Ministry of Health and the non-governmental health sector needs to be strengthened. About one quarter of the country's basic health service delivery is currently handled by 26 private clinics, some of which are in rural areas.[9] Some of the new medical graduates could be deployed to private facilities, especially if the government agrees to subsidize their salaries.

The large number of new doctors trained in Cuba who have been deployed or await deployment in Timor-Leste has implications for the development of local medical education. The influx of doctors trained overseas may limit opportunities for the local production of new doctors and reduce pre-service enrolment – at least in the short-term. Much will depend on the Ministry of Health's ability to create new positions for doctors. At the same time, there is an urgent need to scale up the production of specialists – using, perhaps, a "diploma" approach rather than a "fellowship" approach. Although the National University's postgraduate diploma programme is a step in the right direction, it requires sustained resourcing to be viable. Specialist training overseas is probably necessary but needs to be carefully planned to avoid undermining rural retention goals. The choice between postgraduate training in general public health and postgraduate training in a specialty area also deserves attention, given the important role of the Cuban-trained graduates in health promotion.

The quality of Cuban medical training has not been widely assessed in Timor-Leste. In South Africa, similar training did not initially impart all of the skills needed by generalist medical officers.[17] In Timor-Leste, a carefully designed programme of continuing professional development may help the new doctors acquire the knowledge they need.

Finally, the training of allied health personnel – particularly laboratory technicians and analysts – is also urgently needed. District-level pathology services remain poor and require substantial investment. Nursing and midwifery education also needs to keep pace with the rapid expansion of the medical workforce to ensure that an appropriate doctor-to-nurse ratio is maintained. ■

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ملخص

استبقاء الأطباء في المناطق الريفية في تيمور- لشتي: تقييم نقدي للفرص والتحديات

تعالج تيمور- لشتي حالياً قضية رئيسية للقطاع الصحي بالبلد: العدد الصغير للغاية للقوى العاملة في المجال الطبي بما لا يفي بتقديم الرعاية الملائمة. ونظرياً، من الممكن أن يوفر برنامج ثنائي في مجال التعاون الطبي مع كوبا تم إنشاؤه في عام 2003 الحل لهذه المشكلة. وبحلول نهاية عام 2013، تم إضافة 700 طبيب جديد تقريباً بعد تدريبهم في كوبا إلى القوى العاملة في المجال الطبي في تيمور- لشتي، وبحلول عام 2017، من المقرر أن يتم تدريب 328 طبيباً إضافياً في البلد على يد المختصين الصحيين الكوبيين والمحليين. وسوف ينضم إلى القوى العاملة قريباً بضعة أطباء آخرين تم تدريبهم في إندونيسيا وبلدان أخرى. ومن المتوقع ازدياد عدد الأطباء في تيمور- لشتي في عام 2017 إلى ثلاثة أضعاف العدد الذي كان موجوداً في البلد في عام 2003. ويتوقع أن يعمل معظم الأطباء الجدد في المجتمعات الريفية ويدعمون هدف الحكومة الوطنية لتحسين الحصائل الصحية للأغلبية الريفية. ورغم أن النمو الهائل في القوى العاملة في المجال الطبي يمكنه تغيير طريقة إيتاء الرعاية الصحية وتحسين الحصائل الصحية على نحو كبير في جميع أرجاء البلد، إلا أن ثمة تحديات يجب التغلب عليها إذا قررت تيمور- لشتي تحقيق الاستفادة القصوى من هذا النمو. و يبدو مهماً للغاية نشر معظم الأطباء الجدد في المجتمعات الريفية والاهتمام بتدابير تحقيق الاستفادة القصوى من استبقائهم في المناطق الريفية.

摘要

将医生留在东帝汶农村：机遇和挑战的严格评价

东帝汶正在解决国家卫生部门的一个关键问题：医疗工作队伍太小，不能提供足够的护理。理论上，2003年所制定与古巴合作的双边医疗计划可以解决这个问题。到2013年底，近700名在古巴培训的新医生加入东帝汶的医疗工作，到2017年又会有328名医生在该国得到古巴和当地卫生专业人员的培训。还有一些已经在印度尼西亚和其他地方培训的医生也将加入工作队伍中。预计2017年，东帝汶的医生数量将为2003年的数量三倍以上。多数新的医生预计将在农村社区工作，并支持国家政府改善农村多数地区医疗效果的目标。尽管医疗劳动力的大规模增长可能改变卫生保健服务的提供方式，大大改善全国各地的健康效果，但是，如果东帝汶要从这种增长中获得最大利益，则必须克服一些挑战。看来至关重要是，要将大多数新医生部署在农村社区，并精心管理以优化医生在农村的去留情况。

Résumé

Retenir les médecins dans les zones rurales du Timor-Leste: une évaluation critique des opportunités et des défis

Le Timor-Leste s'occupe actuellement d'un problème essentiel du secteur de la santé du pays: l'effectif médical est trop restreint pour pouvoir dispenser des soins adéquats. En théorie, un programme bilatéral de coopération médicale avec Cuba créé en 2003 pourrait résoudre ce problème. À la fin de 2013, près de 700 nouveaux médecins formés à Cuba ont rejoint l'effectif médical du Timor-Leste et d'ici 2017, 328 médecins supplémentaires devraient avoir été formés dans le pays par des professionnels de la santé locaux et cubains. Quelques autres médecins, formés en Indonésie et ailleurs, intégreront bientôt cet effectif médical. On s'attend à ce que le nombre de médecins exerçant dans le Timor-Leste en 2017 soit trois fois supérieur au nombre de médecins présents dans le pays en 2003. La plupart des nouveaux médecins devraient travailler dans les communautés rurales et soutenir l'objectif du gouvernement national d'améliorer l'état de santé de la majorité rurale. Bien que l'augmentation importante de l'effectif médical puisse changer la manière de dispenser les soins de santé et améliorer considérablement la santé dans l'ensemble du pays, des défis doivent être surmontés pour que le Timor-Leste puisse tirer le bénéfice maximal de cette augmentation. Il semble crucial que la majorité des nouveaux médecins soient déployés dans les communautés rurales et gérés soigneusement pour qu'ils restent le plus possible dans les zones rurales.

Резюме

Удержание врачей в сельских районах Тимора-Лешти: критическая оценка возможностей и задач

Тимор-Лешти находится в процессе решения ключевого вопроса для сектора здравоохранения страны: ненадлежащее медицинское обеспечение из-за слишком малого числа медицинских специалистов. Теоретически, двусторонняя программа медицинского сотрудничества с Кубой, принятая в 2003 году, могла бы решить эту проблему. К концу 2013 года почти 700 новых врачей, подготовленных на Кубе, были включены в штат медицинских работников Тимора-Лешти, и к 2017 году еще 328 врачей должны быть обучены в стране кубинскими и местными специалистами в области здравоохранения. Еще несколько врачей, прошедших обучение в Индонезии и других странах, также скоро приступят к работе. Ожидается, что число врачей в Тиморе-Лешти в 2017 году более чем в три раза превысит число врачей в стране в 2003 году. Большинство новых врачей будут работать в сельских общинах, реализовывая цели национального правительства по улучшению показателей здоровья сельских жителей, представляющих большинство населения в стране. Хотя массовый рост числа медицинских работников может изменить порядок оказания услуг здравоохранения и существенно улучшить состояние здоровья населения по всей стране, существуют проблемы, которые необходимо преодолеть, если Тимор-Лешти стремится извлечь максимальную выгоду из такого роста. Важным моментом в этом вопросе является необходимость размещения большинства новых врачей в сельских общинах, а также внимательное управление ими с целью оптимизации их пребывания в сельских районах.

Resumen

Cómo conservar a los médicos en las zonas rurales de Timor-Leste: una valoración crítica de las oportunidades y desafíos

Timor-Leste se encuentra en proceso de abordar una cuestión clave para el sector sanitario del país: un personal médico demasiado escaso para proporcionar una atención adecuada. En teoría, un programa bilateral de cooperación médica con Cuba, creado en el año 2003, podría solucionar este problema. A finales de 2013, casi 700 médicos nuevos formados en Cuba se unieron al personal médico de Timor-Leste, y se espera que profesionales de la salud nacionales y cubanos formen a otros 328 médicos en el país hasta 2017. En Indonesia y otros lugares han recibido formación algunos médicos más, que se sumarán pronto a este personal. Se espera que el número de médicos en Timor-Leste triplique en el año 2017 el número de médicos existentes en el país en 2003. La mayoría de estos médicos nuevos trabajarán en comunidades rurales y respaldarán el objetivo del gobierno nacional de mejorar los resultados sanitarios de la mayoría rural. Aunque el incremento masivo del personal médico podría cambiar el modo de proporcionar la atención sanitaria y mejorar notablemente los resultados sanitarios en todo el país, hay desafíos que es necesario superar si Timor-Leste pretende obtener el máximo beneficio de dicho crecimiento. Parece fundamental que la mayor parte de los nuevos médicos se despliegue en comunidades rurales y se gestione con gran atención para optimizar su permanencia en dichas zonas.

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