

# Health Human Resource Planning in Barbados and the Eastern Caribbean States a Matter of Sustainability

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## ABSTRACT

*Health and Human Resources (HHR) are very important issues to be considered in healthcare services. While various factors may be of greater significance in one area depending on resources, priorities and stage of economic development, a robust HHR plan is important in all cases. There are many factors such as demographic shifts, changing delivery models, consumer expectations, global shortages and financial restraints that must be considered in proper HHR planning. This manuscript summarizes some of the factors that should be considered and some of the shortcomings of current HHR planning approaches. Based on our review and experience, we developed a framework for HHR planning and apply the framework to Barbados to try to identify the existing challenges and issues and potential areas for staff and training investments.*

## Planificación de los Recursos Humanos en Salud en Barbados y los Estados del Caribe Oriental un Problema de Sostenibilidad

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## RESUMEN

*Los recursos humanos en salud (RHS) constituyen asuntos importantes a considerar en relación con los servicios de atención a la salud. Si bien existen diversos factores que pueden poseer mayor importancia en un área en particular – en dependencia de los recursos, las prioridades y la etapa de desarrollo económico – un plan de RHS sólido es importante en todos los casos. Existen muchos factores tales como los cambios demográficos, los modelos de entrega cambiantes, las expectativas del consumidor; las escaseces a nivel global, y las limitaciones financieras a tener en cuenta a la hora de una planificación adecuada de RHS. El presente trabajo resume alguno de los factores que deben tomarse en cuenta y algunas de las deficiencias en los enfoques actuales en la planificación de RHS. A partir de nuestra revisión y experiencia, desarrollamos un esquema para la planificación de RHS. Aplicamos el esquema en Barbados en un intento por identificar los desafíos y problemas existentes, así como las áreas potenciales para inversiones en personal y entrenamiento.*

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## INTRODUCTION

In both the developed and developing world, Health Human Resources (HHR) planning is emerging as one of the most pressing issues impacting the delivery of healthcare services today. The Honourable Roy Romanow, Chair of the Royal Commission on the Future of Healthcare in Canada, identified Health Human Resources planning as one of the key priorities to protect the future of healthcare in Canada. He noted, “*planning is needed to meet our health requirements*

*and to avoid [future] shortages of healthcare providers. A plan is even more necessary as we try to put together the right mix of skills from an integrated team of healthcare providers to deliver comprehensive approaches to healthcare”* (1).

A robust HHR plan is informed by many factors and pressing needs which in our opinion are not unique to any one country or region although various factors may weigh more heavily in one area depending on resources, priorities and stage of economic development. Common change drivers that must be considered as part of any HHR plan regardless of regional or national differences include:

- **Patient Demographic Shifts Changing the Breadth and Intensity of Services Required.** Population projections suggest that the 65+ age group will represent more than 21% of the total population by 2025 [Pan American

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Health Organization, 2005] (2). This group typically consumes disproportionate healthcare and as they grow in size the demands on the hospital system to respond will be dramatic. Furthermore, the percentage of the population who are working age (and therefore contributing to the tax base) will decrease, placing additional financial strain on the public purse.

- **Transforming Care Delivery Models to Meet Population Needs.** In the developed world, governments are struggling to understand how to respond to issues that are affecting the underlying health status of the population. Most, like Barbados, have long recognized the issues of chronic disease management and are focussing their efforts and resources on delivering additional services in the community to improve the delivery of primary healthcare.
- **Changing Consumers' Expectations.** The public is better informed than ever and are placing additional demands on providers as they take a more active role in their own care, with increased expectations of specialist care.
- **Global Shortages of Healthcare Professionals.** Virtually all countries are experiencing unprecedented shortages in almost all of the health professions, a situation that will only become more severe with the impending retirements within the baby boom generation. These problems are compounded in developing countries, firstly by the brain drain of health professionals to more developed countries, especially the United States of America (USA); secondly, slow or under-funded response by local training institutions to local needs; and thirdly, mismatch between training and creation of new posts.
- **Increased Pressure on Public Treasury to Support Healthcare.** In most countries with a social medicine model, healthcare represents the largest single draw on the public treasury and annual demands for growth in healthcare spending have typically outpaced the growth in public revenues.

Proper HHR planning is essential to respond to all of the above issues and must be an immediate priority to ensure long term sustainability of the healthcare systems in most countries.

Cognizant of the importance of HHR, a project to evaluate the challenges facing Barbados and the Eastern Caribbean States, and particularly to guide medical specialty training needs for the regions, was undertaken. This paper summarizes some of the key shortcomings of current HHR planning approaches, develops a framework for HHR planning, applies the framework to Barbados to identify existing challenges, issues and potential areas for staffing and training investments.

## METHOD

In the summer of 2006, the School of Clinical Medicine and Research, The University of the West Indies, along with its

planning partners – the Ministry of Health, the Queen Elizabeth Hospital (QEH) and the Barbados Community College (BCC) – agreed to undertake a preliminary planning project to better understand the current and potential future Health Human Resources (HHR) challenges facing Barbados, and to better plan postgraduate medical training by the School and the QEH, and allied health professional training by the BCC. Dr Niranjana Kissoon, a UWI alumnus and a Canadian based consulting firm – Corpus Sanchez International (CSI) Consultancy Inc. – were approached to lead the review.

After review of various background papers and materials, the consulting team came to Barbados in the fall of 2006 to initiate a series of meetings with key stakeholders to develop a baseline understanding of the issues and gather additional data and information to support the review. Individuals interviewed included members of the government, senior staff at The University of the West Indies, senior executives at the Queen Elizabeth Hospital, faculty of the BCC, representatives from the European Union working in Barbados, heads of departments and several key members of the medical and allied health professional staff.

Following this meeting, the team completed an extensive literature review, requested additional information and began to collate its findings and preliminary recommendations. This process culminated in the development of a draft report which was presented to Professor Fraser, Dean of the School of Clinical Medicine and Research, in late summer of 2007. The team then came back to Barbados to meet with key leaders and review the initial findings to obtain feedback on, and clarification of issues, in order to finalize the report and assist in developing options for moving forward.

## Literature Review Identifies a Shortfall in Current Planning Methodology

To support the review team's deliberations, a review of current literature on HHR planning was completed. The review suggested that within the healthcare industry, regardless of the countries examined, HHR planning remains a complex process that is not fully understood and is generally poorly done. Factors that may contribute to this poor planning include limited focus, incomplete or partial data related to human resources supply or projected service demands, competing interests and a general lack of appreciation of the importance of HHR strategic planning.

The literature review also revealed a significant shortfall in the planning methodology applied by most jurisdictions. Bloor and Maynard (3) point out "*the planning of supply of and demand for human resources in healthcare is a neglected topic characterized by significant methodological weaknesses which have been discussed for decades but not resolved.*" Many countries rely on major immigration while other countries are the helpless victims of emigration and a "brain drain".

### Building a New Planning Model to Manage HHR Challenges

To build an effective HHR plan, planning must start from the position of clearly understanding the unique needs of the population, the resulting priorities and a quantification of the current and forecasted demand for services.

Health and Human Resources planning must also incorporate a clear understanding of the needs of the providers in order to influence access to the limited professional resources available. A report conducted for the Commission on the Future of Healthcare in Canada, by the Canadian Policy Research Networks Fooks (4), identified four key shifts in thinking that need to occur for HHR planning to be more effective. These include: HHR planning must be done from the perspective of population health needs, leverage national, inter-sectoral and inter-agency cooperation, support a team-based provider model and enable system-based supportive solutions.

- Furthermore, Connolly (5) notes that most HHR planning efforts fail to consider the broader context of the healthcare system and the inter-relationships of various healthcare teams who deliver healthcare services. Existing inefficiencies may not be considered, nor the impact of advances in technology and anticipated changes in service delivery.

To support ongoing HHR Planning, the following two-step framework has been developed to guide decision-making. The first step involves designing the HHR plan by understanding the needs of the population, understanding the needs of providers in order to influence access to the providers and building cooperative relationships to position and support the HHR plan implementation. The second step involves investigating the use of integrated care team delivery models, leveraging innovative solutions that incorporate system-based solutions to increase the effectiveness and efficiency of resources available, and ongoing refinement and evaluation of the HHR model (Fig. 1).

### Applying the HHR Framework: Areas for Consideration by Barbados

The first step of the HHR Planning Framework was applied to findings from the Barbados study to understand the urgency and issues associated with HHR planning. Barbados, in collaboration with its ECS partner nations, should develop formal processes to make its planning processes more robust and more linked to underlying needs of the population(s) it serves. The key issues that need to be addressed include:

- Population Needs versus Post Management.** Expansion of the number of healthcare providers will need to be done using a balanced approach that acknowledges the economic realities of Barbados and the wider healthcare provision opportunities, *eg* in health tourism, especially towards Canada and the USA. Under the

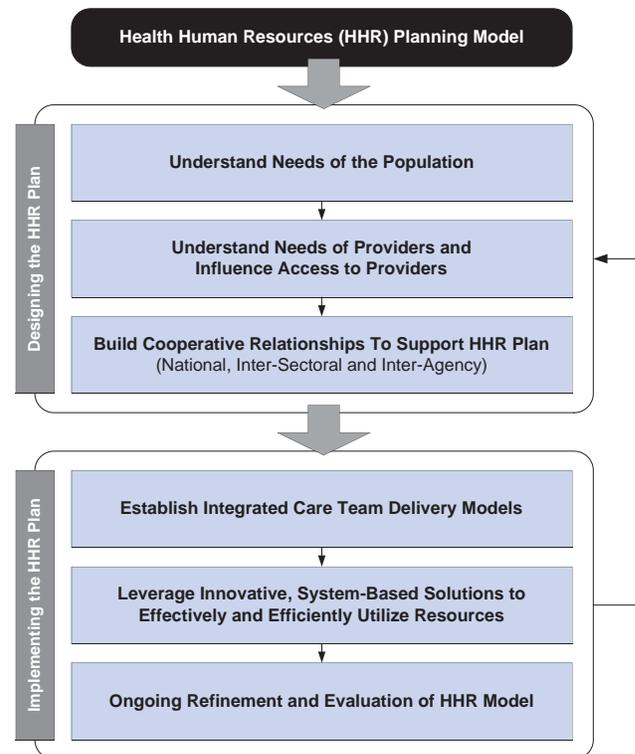


Fig. 1: Refinement and evaluation of a Health and Human Resources model

current system, additional posts would be required to address some of the immediate/urgent priorities for expansion, but this will require an increase in health dollars or a realignment of existing dollars to fund new posts. This may be a difficult challenge in the short term, but one that the system must address as the population increases and the proportion of the population over 65 years increases. These two changes alone will place unprecedented pressure on the system for more clinicians – medical, nursing and allied health professionals – to meet the needs of the population. To support this pressure, clarity around the supply of staff must be accurate, available, accessible and timely.

- Planning Models Must Reflect Needs and Priorities.** The Government of Barbados will need to engage its healthcare providers and the University in planning processes to define needs and gain agreement on priorities for specialty training that are to be funded from limited public resources and/or University-funded sources.
- New Financial Models May Be Required.** Creative models for public-private partnerships and other mechanisms to increase academically focussed resources will need to be considered as part of an overall strategy to expand the number of practitioners. The emergence of a new private hospital is one option, but another option may be to look to internationally-based organizations that are prepared to fund positions in developing coun-

tries to support training and retention of physicians. Other options include building new, innovative and stronger relationships with the University, to ensure expansion and on-going, sustainable training programmes.

- **Leverage Innovative Care Delivery Models.** Given limited resources, developing new and innovative models for delivery of care and services will be essential. Examples include: restructuring of care delivery teams to ensure that professional staff time is utilized as efficiently as possible, maximizing the use of ambulatory care to deliver services, strengthening linkages between the QEH and community based services and developing outreach service delivery models so that people who live outside Bridgetown, and on a large scale, outside Barbados, can receive the required follow-up care as close to home as possible.
- **Partnerships with other Eastern Caribbean States (ECS) should be investigated.** An expanded referral centre role to other ECS represents an important mechanism to increase resources and expand the number of posts in key areas. We urge Barbados to consider options for, and barriers to, working together with their sister states and to pursue strategies to enable expansion to reflect the needs of a broader population base. This will help to provide the critical mass necessary to expand the services offered at the QEH, provide essential services to other Caribbean (ECS) countries, health tourism services to North America and potentially earn significant revenue.
- **Leveraging Technology Based Solutions.** Technical infrastructure such as electronic patient care systems, computerized physician order entry, electronic medication administration records, electronic based scheduling and registration may change how healthcare is delivered in the future. Another technology that is showing promise for changing and improving care delivery is Telemedicine. For patients and their families, telemedicine eliminates time, distance and geography as barriers to healthcare. For healthcare professionals and institutions, telemedicine enhances the coordination of service delivery across the continuum of care. Given the broad nature of the large geographic area served by the UWI campuses and teaching hospitals, video conferencing and advanced information communication technologies may be leveraged to deliver clinical, education and other services in a secure, reliable and responsive manner.

#### **Establishing a Starting Point: Areas for Potential Increases in HHR Investment**

Given the limitations surrounding planning methodologies, an HHR review needs to consider a blended approach to identify potential areas for consideration as investment priorities. Considerations related to physicians, nursing and allied health are outlined in this section.

Physician HHR planning is impacted by four themes: current and emerging health needs, the potential impact on demand related to demographic shifts, international comparisons of the population/provider ratios and the need to ensure critical mass for sustainable provider models. Each of these is briefly summarized below:

- **Health Needs of the Population.** All of the literature states that HHR planning must be grounded in meeting the highest priority needs to improve the population's underlying health status. Barbados, like other countries in the ECS such as St Lucia, is to be congratulated for the work done to date to understand the key health issues facing the population, as well as for the investments previously made in services aimed at better management of non-communicable chronic diseases, primary care and related services. Also, we note that the World Health Organization identifies oral health as a critical priority in developing countries, especially for socially disadvantaged or marginalized populations.
- **Demographic Shifts of the Population.** As previously noted, the key demographic issue in Barbados and the other ECS is the projected increase in the population cohort aged 65 years and above. This population has significant underlying health issues and can be expected to place increasing demands on the system for many years. In addition, issues associated with managing health issues in the frail elderly are becoming increasingly complex (*eg* dementia, co-morbidities) and new models and skills may be required. One potential model to consider is the increased role that geriatricians can play in serving this population. Barbados currently has one geriatrician. This will not be adequate for the future and should be considered a priority area for increased investment.
- **Existing Population/Provider Ratio References.** This is the most common model used for HHR planning and focusses on current and projected needs for providers based on a target ratio of providers to serve the population. The ratios are expressed in one of two ways: providers per 1000 people or population per provider. The consulting team looked at databases available from the World Health Organization (WHO) and found that there is significant variability between countries, and that variability does not appear to be directly correlated with the country's wealth. In a sample of 14 countries (both developed and developing) with GDP per capita levels that range from 8<sup>th</sup> (US) to 83<sup>rd</sup> (Dominican Republic) in the world, the range in physicians per 1000 people ranges from a high of 2.56/1 000 (US) to a low of 0.79/1000 (Trinidad and Tobago). Barbados was 8<sup>th</sup> in the list at 1.45/1000 and represents a GDP that is 42<sup>nd</sup> in the world (Fig. 2). While these differences need to be analyzed in more depth to draw any definitive conclusions, they do show that different models exist despite wealth. The consulting team then shifted the focus to looking at

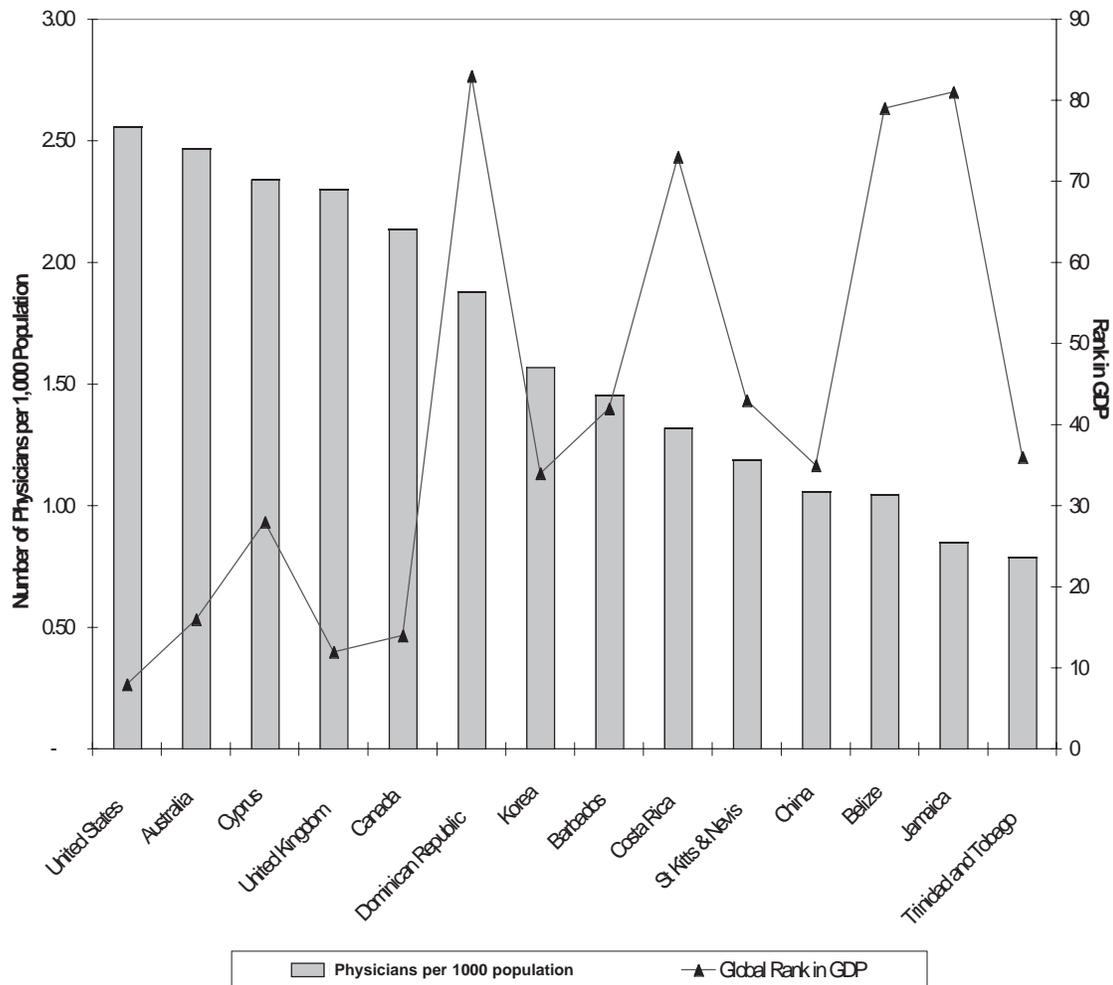


Fig. 2: Comparison of physician numbers and GDP of countries.

detailed comparisons between Barbados and another country. For that comparison, we chose Canada (14<sup>th</sup> in GDP and therefore a mid-range developed country). As Barbados has a national vision to create “*a fully developed society that is prosperous, socially just and globally competitive*”, this suggests a goal of *becoming first world*, so a developed country seemed to be an appropriate starting point for discussion because of the four developed countries at the top of the list above, Canada is last in the number of providers/1000 people, making it a potentially more reasonable starting point for comparison, and perhaps suggesting more realistic and achievable targets. Also, its underlying political and social systems are very similar and parts of Canada (eg Atlantic Canada) exhibit very similar demographic, population health and economic characteristics to Barbados.

- **Impacts of Critical Mass Requirements.** There are a number of specialties where Barbados may not have

adequate critical mass of providers to ensure long term sustainability. Many of these were also flagged under ratios.

Using Canada as a comparator, the following specialties were identified as having the largest variance from the current Canadian models (*ie* would require the highest percentage increase in staff positions to have staffing levels similar to the Canadian model) in addition to some potential limits related to critical mass (Table 1).

Review of nursing HHR challenges identified two key issues that need to be addressed. These include:

- **Need to Revisit Models of Service Delivery.** Given global shortages of RNs, most developed countries have recognized the need to revisit models of service delivery to ensure that professional staff (RNs) are optimally utilized and supported. New models will need to consider the full range of nursing roles (RNs, Nursing Assistants and Care Aides).

Table 1: Comparison of staffing levels to the Canadian model and critical mass issues

Speciality	Increase in staffing levels to achieve Canadian model		Critical mass concerns
	Number	Percentage	Available Professionals
<b>Radiation/Medical Oncology-</b> Additional radiation and/or oncologists	5	470	1–2
<b>Psychiatrist</b> – Additional psychiatrist	33	400	–
<b>Diagnostic Imaging</b> – Additional radiologists	14	370	–
<b>General Surgery</b> – Additional general surgeons	10	213	–
<b>Physiatry</b> – Additional physiatrists	2	205	1–2
<b>Neurology</b> – Additional neurologist	6	205	–
<b>Cardiology</b> – Additional cardiologist	5	180	3
<b>Anaesthesia</b> – Additional anaesthesiologists Note: pressure for this service will need to increase as other surgical specialists grow	14	170	–
<b>Cardiovascular Surgery</b> – Additional cardiac surgeons	2	160	1
<b>Orthopaedic Surgery</b> – Additional orthopaedic surgeons. Note: trauma rates and corrective surgery demands are likely greater in Barbados, when health tourism impacts are considered	7	150	3
<b>Neurosurgery</b>	–	–	1
<b>Urology</b>	–	–	2
<b>Internal Medicine</b> – Multiple sub-specialities with only 1 or 2 specialists (eg, respiratory infectious disease)	–	–	1–2
<b>Laboratory Medicine</b> – Represents a critical service area where current staffing levels suggest more investment required for long term sustainability	–	–	TBD

Note: the consulting team is not suggesting that the numbers of staff noted above should necessarily be viewed as targets, but rather that these areas may represent specialties that warrant consideration for additional investment and training.

- **Need to Support Nursing Development.** Revisiting the current career paths and options for advancement for nurses which were reported to be somewhat limited and potentially too stringent, additional options to fast track advancement and train nurses for specific care streams should be considered.

Review of allied HHR models was also based on population/provider ratios. Overall, allied health identified similar shortages to the physician findings (Table 2).

### Lessons Learned

The initial planning work has been very informative and leads to some definite conclusions including specific areas of focus to ensure HHR sustainability. In addition, a more robust HHR planning model has been developed to support broader planning and design of a future HHR model.

Finally, the need for an integrated and cooperative model for designing the plan has been identified as a critical step in moving forward. For example, the need to leverage health tourism opportunities, partner with the OECS to create a Caribbean-based Centre of Excellence in some key areas (eg Neurosurgery), explore new financial models including partnerships between ECS countries to ensure that health costs provided between countries are fairly and appropriately captured, build incentives for people working in the private system to support delivery in the public system and partnership with private sector providers (eg the proposed new private hospital in Barbados), leverage international linkages and funding opportunities (eg Foreign Governments as well as Major International Hospitals and Foundations) and finally, the need for close collaboration between Government and the training institutions.

Table 2: Numbers of personnel required to achieve staffing levels comparable to Canada

Speciality	Increase in staffing levels to achieve Canadian model	
	Number	Percentage
<b>Dieticians</b> – Additional dieticians. This is an area where positions like dietary aides could also be leveraged.	17	650%
<b>Pharmacists</b> – Additional pharmacists. Opportunities to leverage positions such as pharmacy technicians could reduce reliance on the number of pharmacists required.	11	170%
<b>Social Work</b> – Additional social workers.	28	670%
<b>Physiotherapists</b> – additional physiotherapist. Opportunities to leverage positions like rehab aides could reduce reliance on the number of physiotherapists required.	31	380%
<b>Medical Radiation Technologists</b> – additional medical radiation technologists.	82	530%
<b>Lab Technologists</b> – additional lab technologists [MLTs]. Leveraging Medical Lab Assistants may be an option.	116	590%

### Conclusions and Next Steps: Establishing a HHR Plan

Governments in Barbados and the Eastern Caribbean need to start a collective dialogue on HHR with an eye to addressing a number of critical issues including:

- The need for appropriate frameworks to confirm priorities for HHR and related planning.
- Suggestions for moving forward in more detailed planning regarding some immediate priorities (*eg* Radiation Oncology and Radiology).
- Planning for specialty training in priority areas, with The University of the West Indies Faculty of Medical Sciences, Cave Hill, the Queen Elizabeth Hospital and the Barbados Community College.
- Opportunities to link key initiatives both within and between countries, establishing partnerships to provide shared care.

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