# The Dutch post-graduate training in Global Health and Tropical Medicine: International stakeholders' perspectives

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# 3 Abbreviations

| | |
|---|---|
| CIGT | Concilium Internationale Gezondheidszorg en Tropengeneeskunde (Reference Board Global Health and Tropical Medicine) |
| EPA | Entrusted Professional Activity |
| GHR | Global Health Residency |
| GNI | Gross National Income |
| HIC | High-income countries |
| HR | Human Resource |
| IQR | Inter-quartile range |
| KIIs | Key-informant interviews |
| LMIC | Low- and middle-income country |
| NCDs | Non-communicable diseases |
| NGO | Non-governmental organisation |
| NTC | Nederlandse Tropencursus (Dutch course in Tropical Medicine and Hygiene) |
| NVTG | Nederlandse Vereniging voor Tropengeneeskunde (Netherlands Society for Tropical Medicine and International Health) |
| OIGT | Opleidingsinstituut Internationale Gezondheidszorg en Tropengeneeskunde (Training Institute Global Health and Tropical Medicine) |
| OPD | Out-Patient Department |
| PGHTM | Physician Global Health and Tropical Medicine |
| PNG | Papua New Guinea |
| SSIs | Semi-structured Interviews |

# 4 Key concepts

We are aware that terminology comes with sensitivities.[1, 2] In this report we have attempted to use language that is neutral and free of judgment.

| | |
|---|---|
| **Interview participants** | The persons from the host institutes interviewed for the purpose of this study. |
| **Survey respondents** | The persons who responded to the online survey. |
| **Key informants** | The experts interviewed for the purpose of this study. |
| **LMICs** | For the current 2023 fiscal year, low-income economies are defined as those with a Gross National Income (GNI) per capita of $1,085 or less in 2021; lower middle-income economies are those with a GNI per capita between $1,086 and $4,255; upper middle-income economies are those with a GNI per capita between $4,256 and $13,205.[3] |
| **HICs** | For the current 2023 fiscal year, high-income economies are those with a GNI per capita of $13,205 or more.[3] |
| **Low-resource setting** | Settings where there is a lack of human resources, knowledge infrastructure and financial capital for the delivery of adequate healthcare services.[4] |
| **Host institutes** | The primary, secondary or tertiary centres/clinics/hospitals situated in low-resource settings where PGHTMs (physicians of Global Health and Tropical Medicine) work. |

# 5 Summary

**Introduction**
While post-graduate training programmes in global health are widespread, there are none that integrate clinical training with public health in the same way that the Netherlands does. The design of the Dutch residency programme has implicit assumptions about the needs of healthcare systems in low-resource settings that have yet to be confirmed. The findings of this study allow for a full training programme assessment to inform the residency curriculum's aim, focus and direction and ensure it is demand-driven.

**Methods**
A mixed-method study was conducted with a sequential explanatory design. A survey was disseminated to 27 institutes in the global South investigating the knowledge, skills and attitudes required of PGHTMs (physicians of Global Health and Tropical Medicine). Of these institutes, 50 respondents, representing 17 different host institutes in 11 different countries completed the survey. The survey informed construction of an interview guide used for semi-structured interviews (SSIs). Thirteen men and 4 women were interviewed, with an age range of 31-66 years. The interview participants worked across 12 different institutes in Ghana, India, Malawi, Mali, PNG (Papua New Guinea), Sierra Leone, South Africa, Tanzania and Thailand. Ten of the interview participants were medical doctors (of which seven directly in a supervisory role to the PGHTM), three clinical officers, two nurses and two managerial staff members. After 16 interviews no new themes emerged and theoretical saturation was achieved. To further explore and validate the results in the survey and SSIs, add depth to the discussion, and bring expert perspectives to the table, five additional interviews with experts in the field were held. Data was collected between September and December 2022.

**Results**
PGHTMs were found to play an important role in filling HR gaps in low-resource settings and participants felt they added value in capacity building and quality improvement. While PGHTMs' theoretical knowledge was considered to be excellent upon arrival, consolidation of skills and understanding of the local context were predominantly developed on the job. The residency program was commended for training motivated and hardworking generalists with a strong clinical acumen. Having said this, host institutes felt more emphasis on non-communicable diseases (NCDs), mental health, public health and managerial skills would be beneficial. Additionally, PGHTMs were encouraged to invest in their understanding of the local socio-political context, reflexivity, and humility. Host institutes considered the PGHTM training to offer a unique skillset which would benefit from a bolder vision that emphasized bilateral exchange and mutual ownership over the curriculum.

**Conclusion**
This study showcases the competencies identified by host institutes as important for PGHTMs to be equipped with in order to function in their roles with maximum added value and positive impact. Future revisions of the training programme should explore how the curriculum can be set up to be adaptive (to changing needs) and responsive (to context-specific demands). Further research should also explore the practicalities of how to overcome systemic barriers in setting up bi-directional partnerships for a global medical workforce.

# 6 Introduction

While global health degrees are widespread,[5] to our knowledge there is no official training program that integrates clinical training and public health in the same way as delivered in The Netherlands. In 1907, the Netherlands Society for Tropical Medicine and International Health (NVTG) was founded with the goal of improving healthcare in former Dutch colonies.[6] Since the late 1960s, the NVTG has overseen a training programme for medical doctors who aim to work in low-resource settings. Organized by the Training Institute in Global Health and Tropical Medicine (OIGT), the Dutch post-graduate training in Global Health and Tropical Medicine (GHTM) aims to equip its residents with the necessary skills to respond to healthcare needs in low-resource settings and work at the crossroads between curative and preventative care.[7] The programme was officially recognized as a formal post-graduate specialization in 2014. In 2020, the curriculum was revised to fit a modern educational model, including Entrusted Professional Activities (EPAs) based on the CanMEDS competencies.[7] The current training programme consists of two clinical residencies (9-12 months) in obstetrics and gynaecology and surgery or paediatrics, ten additional one-day trainings in overarching topics (such as transcultural psychiatry, dentistry and urology) and a three-month course in Tropical Medicine and Hygiene (NTC). The 6-months Global Health Residency (GHR) in a low-resource setting completes the programme.[7]

As the movement to decolonize global health gains momentum, so does the recognition that many well-intended activities, such as sending medical professionals from high-income countries (HICs) to work or train in low- and middle-income countries (LMICs), may perpetuate inequalities in the field of global health.[8] Subsequently, there has also been an increasing focus on the perspectives of host institutions and local staff in LMICs on medical students,[9-12] resident trainees[13] and healthcare professionals[10, 11, 14, 15] from HICs. To our knowledge however, no previous research has been conducted on the perspectives of host institutes on Dutch Physicians of Global Health and Tropical Medicine (PGHTMs) in particular nor on learning needs specifically. The current training programme for PGHTMs has been informed by the extensive experience of trainers who worked in various LMICs as PGHTMs themselves, but the perspectives of host institutes have not been specifically included or evaluated before. This study aims to explore the views of host institutes that receive PGHTMs and assess the extent to which the current training program and the PGHTM profile align with their specific needs.

This study ties in with a larger learning needs assessment to advise the OIGT for revision of the residency program. This started in 2021 with an exploration of the perspectives of 23 PGHTMs on their training programme. The overall conclusion was that the PGHTMs considered themselves sufficiently equipped with the necessary knowledge, skills, and attitudes to adequately work in low-resource settings.[16] Building on these results, the current study aims to explore the perspectives of the host institutes in order to further inform the curriculum's aim, focus and direction and ensure it is demand-driven.

# 7 Methods

## 7.1 Study design

A mixed-method study was conducted with a sequential exploratory design. A survey investigating the knowledge, skills and attitudes required of PGHTMs was disseminated to host institutes where PGHTMs work(ed). The survey informed construction of an interview guide used for semi-structured interviews (SSIs) with participants from the host institutes. In turn, the findings of the SSIs led to fine-tuning of the interview guide for the key-informant interviews (KIIs). Data was collected between September and December 2022.

## 7.2 Recruitment and sampling

### 7.2.1 Survey

Host institutes were identified by tracing the institutes where PGHTMs who graduated since 2017 work(ed) after their training. The year 2017 was chosen since it coincides with the first cohort graduating from the in 2014 revised training programme. First, a list of all 108 PGHTMs who graduated after 2017 was obtained from the OIGT. Through the research team's informal network, combined with information available on LinkedIn, a list of institutes where each of these PGHTMs work(ed) was compiled (see Table 1). NGOs (non-governmental organisations) working in different facilities were clustered as one institute for practical reasons. For 34 of the 108 PGHTMs who graduated after 2017 information could either not be obtained, or the PGHTM had not worked outside the Netherlands after graduation. Of the 39 institutes identified, the ones who had hosted more than 2 PGHTMs after 2017 or still had PGHTMs working there during the research period were approached for the survey. The survey was distributed to 27 institutes in 11 countries in the global South. We contacted the affiliated PGHTM with the request to circulate the survey widely amongst (former) colleagues. Often this happened through WhatsApp. In one institute, the PGHTM printed out the survey for colleagues to fill in manually due to internet challenges. If initially no response was received, the PGHTM was approached on two more occasions with a reminder. Of these institutes, 50 people, representing 17 different host institutes in 11 different countries completed the survey (table 1). Two double records and 9 incomplete records were excluded.

*Table 1: Institutes hosting PGHTMs after 2017. The grey shading indicates which institutes responded to the survey.*

| Host institute | Country | Number of PGHTMs after 2017 |
|---|---|---|
| Hospital of Pokola Sangha Region | DRC | 1 |
| Nordic Medical Centre | Ethiopia | 3 |
| Holy Family Hospital Berekum, Ghana | Ghana | 2 |
| MSF | Global | 7 |
| Stichting Bootvluchteling | Greece | 5 |
| Westmont Bethel Hospital in San Miguel Petapa | Guatemala | 1 |
| Buba Health Centre | Guinee Bissau | 1 |
| Makunda | India | 1 |
| Aga Khan University Hospital Nairobi | Kenya | 1 |
| Mangochi District Hospital | Malawi | 2 |
| St. Gabriels Hospital, Namitete | Malawi | 1 |
| St. Lukes Hospital, Malosa | Malawi | 3 |

| | | |
|---|---|---|
| Critical Care International | Mali | 3 |
| Kikori District Hospital, Kikori | PNG | 1 |
| Stichting Bootvluchteling | Poland | 2 |
| Saba Cares/Saba Health Care Foundation | Saba | 2 |
| Doctors with Africa, Puhejun and Bo | Sierra Leone | 1 |
| Lion Heart Medical Centre, Yele | Sierra Leone | 4 |
| Magbenteh Community Hospital, Makeni | Sierra Leone | 2 |
| Masanga | Sierra Leone | 8 |
| Bethesda Hospital, Ubombo | South Africa | 1 |
| Tintswalo hospital, Acornhoek | South Africa | 4 |
| Academic Hospital Paramaribo | Surinam | 2 |
| Aga Khan University Hospital Dar es Salaam | Tanzania | 1 |
| Haydom Lutheran Hospital | Tanzania | 4 |
| Kabanga Referral Hospital, Kasulu | Tanzania | 1 |
| Mnero | Tanzania | 4 |
| Rubya | Tanzania | 1 |
| Sengerema | Tanzania | 1 |
| Shirati | Tanzania | 2 |
| St. Walburgs Hospital, Nyangao | Tanzania | 2 |
| SMRU, Mae Sot | Thailand | 1 |
| Lamin Health Centre | The Gambia | 2 |
| Buhinga Hospital, Fort Portal | Uganda | 1 |
| St Francis Hospital Mutolere | Uganda | 1 |
| Mulanje Missie Ziekenhuis | Zambia | 1 |
| St. Francis Mission Hospital, Katete | Zambia | 4 |
| Mbuma Mission Hospital | Zimbabwe | 1 |

### 7.2.2 Interviews

For the SSIs, interview participants were recruited through the survey. Survey interview participants could indicate if they could be approached for an interview by leaving their email-address. Sampling was thereafter purposive, striving for maximum diversity in terms of:

- Geography (the aim was to include at least one institute per LMIC continent);
- Setting (primary/secondary/tertiary healthcare);
- Type of service delivery (humanitarian/developmental and clinical/public health);
- The position of the respondent within the institution (management, medical doctor, clinical officer, nurse); and
- The relationship with the PGHTM (supervisor, direct colleague, student).

Interview participants were approached if they had worked with at least one PGHTM graduated after 2017, had access to internet and were able to communicate in English. Out of the 20 interview participants who left their email-address, 17 were selected and confirmed to be willing to participate.

To further explore and validate the results in the survey and SSIs, add depth to the discussion, and bring expert perspectives to the table, five KIIs were held. Key informants were selected based on the following criteria:

- Likely to contribute to answering the research questions; and/or
- Likely to add valuable insights into overarching themes that extend beyond the research questions such as the role of the PGHTM in the global health arena; and/or
- Likely to add insights into the preliminary results found in the SSIs; and/or
- Possess a good understanding of the PGHTM training program and/or people with expertise and experience with working with PGHTMs outside of The Netherlands.

Additionally, for the final selection, the criteria below were taken into consideration:

- At least one person from each gender;
- Age balance;
- Representing a variety of organizations in the global health arena, including NGOs, governmental healthcare organizations, academic institutions or government actors;
- Representing a variety in geographical professional working experience.

Key informants were approached through email and interviewed either in person or through Microsoft Teams.

## 7.3 Data collection

The research team and advisory committee (consisting of representatives of the OIGT, CIGT (Concilium Internationale Gezondheidszorg en Tropengeneeskunde – this is the organ that advises the OIGT), NTC and one external expert) met 6-weekly to discuss the research plan, tools and progress.

### 7.3.1 Survey

Survey questions were based on core competencies addressed in the OIGT training curriculum and supplemented with key topics which emerged in the literature. Interview participants were asked to determine to what extent the competency (topics included: surgical care, paediatric and neonatal care, gynecological and obstetric care, (non) communicable diseases, preventative medicine, daily management of health facility, medium to long-term development of healthcare, teaching, coaching and mentoring, communication, cultural sensitivity and knowledge of the local context and healthcare system) was needed in their setting on a 5-point Likert scale from ‘not a priority’ to ‘essential’ and to what extent the PGHTM was equipped with the competence before arrival (‘not at all equipped’ to ‘extremely equipped’). Additionally, there was room for comments after each question. Attention was paid to both survey length (to prevent responder fatigue) and language (ability of questions to be answered by both medical and non-medical personnel). The survey was developed by the research team and reviewed by the reference group.

The survey was piloted in Sengerema District Hospital in Tanzania, after which some language amendments were made and the number of questions was condensed from 21 to 11. The survey was distributed through the data collection tool RedCap. The survey was distributed in August 2022 and respondents were given 3 weeks to fill it in.

### 7.3.2 Interviews

The interview guide for the SSIs was designed following review of the literature and training curriculum, further informed by the preliminary results of the survey, and adapted during the interviewing process as new perspectives were gained. Topics included the role of the PGHTM within the institute, the competencies (knowledge, skills and attitudes) required in the setting, the extent to which the PGHTM possessed these upon arrival and general reflections on the PGHTM and their training. The interview was semi-structured in nature, allowing the researcher to tailor the questions to the context of the participant and enabling a flexible exploration of subjects. Interview participants received both a written and verbal explanation of the study and were informed of the safe storage of information and the right to refuse answering a question and to terminate the interview. They were explicitly informed that the interview was for research purposes only and that their information would not affect any existing or future collaborations with PGHTMs. The interviews, lasting approximately 1 hour, were conducted via Microsoft Teams between September and December 2022, recorded and transcribed ad verbatim. After 17 interviews no new concepts emerged. A small financial token was offered for their efforts and to compensate for any phone credit used.

For the KIIs the interview guide was adapted following the preliminary analysis of the SSIs. Topics included the (changing) global health landscape, the role of the PGHTM and required competencies in global health, reflections on the training programme and validation or rebuttal of the themes that emerged during the SSIs. Similar to the SSIs, informed consent was obtained and the interviews – conducted in December 2022 – were recorded and transcribed ad verbatim.

## 7.4 Data analysis

For the survey, we conducted descriptive statistical analysis. For each interview, including the qualitative data from the survey, analysis was performed with AtlasTi. Initially, five of the SSIs were randomly selected and read and re-read by two researchers (JS and JA) to gain an overall impression of the material. They were then analysed line-by-line and open coded individually by JS and JA. Coding was initially deductive, following the predetermined categories as determined for the topic guide. A list of codes (see appendix A) was generated and conflicting thoughts and interpretations discussed between the two researchers. Once consensus was reached on the codes, JS coded the remaining interviews and moved to axial coding, in which she looked for relationships between categories. Finally, a more selective coding was applied from which core categories emerged, looking for plausible explanations to enable the drawing of conclusions. Relevant quotes were selected for the purpose of illustrating the findings.

## 7.5 Ethical considerations

A non-WMO ethical waiver was obtained from the UMC Utrecht on the 27th of May 2022. Only general personal characteristics (such as gender, age and professional category) were collected and the pseudo-anonymity of the study was mentioned to interview participants. All personal data which could potentially lead to identification of the participant was removed during transcription. We also emphasised that answers would not influence (future) collaborations with PGHTMs.

# 8 Results

The following sections first describe the quantitative results of the survey and subsequently the qualitative results. Unless specified otherwise, the qualitative results are derived from all three sources of qualitative data, namely: 1. The comments in the survey; 2. The interviews with interview participants from the host institutes; and 3. The interviews with key informants. Each sub-section starts with a) an overview of the respondent or participant characteristics, after which b) results are organized per theme as outlined in the topic guides:

- The role and added value of the PGHTM in global health.
- Competencies (knowledge, skills, attitudes) with specific attention for the local need and extent to which the PGHTM is equipped before arrival.
- Reflections on the training programme
- Other emerging themes

## 8.1 Quantitative

### 8.1.1 Survey respondent characteristics

Fifty professionals, ranging from medical doctors, midwives, clinical officers, paramedic staff and managerial personnel filled in the survey (Table 2). Most of the interview participants (n=28/50, 56%) were direct colleagues of the PGHTM, followed by medical supervisors of the PGHTM. The majority of the interview participants had worked with PGHTMs for over 12 months cumulatively.

*Table 2: Demographics survey respondents*

| **General characteristics** | **Interview participants (n=50)** |
|---|---|
| **Profession** | |
| Doctor | 20 |
| Management | 13 |
| Clinical officer | 8 |
| Midwife | 6 |
| Paramedic | 1 |
| Researcher | 1 |
| Other (e.g.: nutritionist, pharmacist, anesthesia assistant) | 9 |
| **Relationship with PGHTM** | |
| Direct colleague | 28 |
| Supervisor | 11 |
| Supervised by | 5 |
| Other | 6 |
| **Duration of work with PGHTM (cumulative)** | |
| >12 months | 29 |
| 6-12 months | 11 |
| 3-6 months | 9 |
| <3 months | 1 |
| **Countries** | |

| | |
|---|---|
| Tanzania | 12 |
| Sierra Leone | 8 |
| South Africa | 6 |
| Ethiopia | 6 |
| Malawi | 5 |
| Mali | 3 |
| India | 3 |
| PNG (Papua New Guinea) | 2 |
| Thailand | 2 |
| South Sudan | 2 |
| Ghana | 1 |

### 8.1.2 General appreciation competencies

Out of the 11 topics in the survey, surgical care was rated the most essential (mean = 5 = essential). All other topics were also regarded a high priority. Overall, the PGHTM was considered 'very equipped' with the competencies required for each domain before arrival (see Table 3).

*Table 3: Median and IQR (interquartile range) of the different topics covered in the survey*
*NB: the topics are listed in the order that they emerged in the survey.*

| **Topic (see appendix X for the operational definition of the domain as described in the survey)** | **To what extent is the topic needed in your setting?**<br>**1 = not a priority**<br>**2 = low priority**<br>**3 = medium priority**<br>**4 = high priority**<br>**5 = essential**<br><br>**Median (IQR)** | **To what extent was the PGHTM equipped with the knowledge/ skill/attitude upon arrival?**<br>**1 = not at all**<br>**2 = slightly**<br>**3 = moderately**<br>**4 = very**<br>**5 = extremely**<br><br>**Median (IQR)** |
|---|---|---|
| Surgical care | 5 (1) | 4 (0) |
| Pediatric and neonatal care | 4 (1) | 4 (0) |
| Gynecological and obstetric care | 4 (1) | 4 (0) |
| (Non) communicable diseases | 4 (1) | 4 (0) |
| Prevention | 4 (1) | 4 (0) |
| Daily management of health facility | 4 (1) | 4 (0) |
| Medium to long-term development of healthcare | 4 (1) | 4 (0) |
| Teaching, coaching, mentoring | 4 (0,75) | 4 (0) |
| Communication | 4 (1) | 4 (1) |
| Cultural sensitivity | 4 (1) | 4 (0) |
| Local healthcare system | 4 (0) | 4 (0) |

## 8.2 Qualitative interviews with interview participants from host institutes and key-informants

### 8.2.1 Interview participant characteristics

Thirteen men and 4 women were interviewed, with an age range of 31-66 years. The interview participants worked across 12 different institutes in Ghana, India, Malawi, Mali, Papua New Guinea (PNG), Sierra Leone, South Africa, Tanzania and Thailand. Ten of the interview participants were medical doctors (of which seven directly in a supervisory role to the PGHTM), three clinical officers, two nurses and two managerial staff members. After 16 interviews (of which one a double interview with two interview participants) no new themes emerged and theoretical saturation was achieved.

Key informants representing varying geographical working experience and diverse focus areas (humanitarian work, primary healthcare, research, clinical care, public health, governance) were selected in consultation with the OIGT and CIGT (see Table 4).

*Table 4: characteristics of the key informants*

| Profession/affiliation | Gender | Focus area | Region |
|---|---|---|---|
| Gynecologist | Male | Clinical care | Sub-Saharan Africa |
| Health Services of Christian Social Services Commission (CSSC) | Female | Health systems | Tanzania |
| Professor Family Medicine and Primary Care | Male | Community and primary healthcare | South Africa |
| Management Medecins sans Frontieres | Male | Humanitarian aid | International |
| Management KNCV Tuberculosis Foundation | Male | Public health | International |

### 8.2.2 The role and added value of the PGHTM

**Prescribed role: "custodians of a health system"**

Opinions regarding the role of the PGHTM differed between interview participants. Certain interview participants and key informants (typically the ones with a focus on humanitarian and clinical work) believed the prime responsibility was patient care and therefore clinical training needed to be prioritized.

> *"Their absolute primary responsibility is the clinical encounter. They need to be competent doctors because if they're incompetent doctors, then nothing else matters. So this is the primary responsibility. I think the secondary responsibility and not far behind, is the societial responsibility. They become, by their position, as physicians, but also as rich physicians coming from outside, they become custodians of the health of that system."* (Key informant 4)

As the above citation demonstrates, key informants also agreed that demonstrating responsible leadership is part and parcel of a PGHTMs role. Key informant 3 described this as: *"So, what we say is your job is to influence the people that are responsible."* (Key informant 3) coinciding with the 'collaborator' and 'advocate' roles in the CANMEDs model that the OIGT training programme is based on.

Two out of the five key informants also mentioned the important mentorship role of PGHTMs towards their national colleagues with less training. They explained how having to work in rural areas of Sub-Saharan Africa straight out of medical school could lead to traumatization of newly graduates, as demonstrated in the below quote:

> *"These are very junior people and they must have more experienced people around them in order for them A, to grow, and B, able to actually quite frankly not to be traumatized you know. So you know if you end up as a junior doctor in some God forsaken primary hospital with nobody else there and you know there's some obstetric kind of disaster. Everybody dies and you feel responsible. You don't get over that very quickly." (Key informant 3)*

The importance of contributing to healthcare quality improvement was also iterated:

> *"All the Netherlands doctors that came here, they helped in certain areas: they helped us rebuild the hospital, helped us organising rounds, helped us with the reporting systems. And like we see very positive feedback." (manager, PNG)*

**Current role: the generalist "mid-level doctor"**

The above desired roles in clinical care, capacity building and quality improvement are in line with what the current tasks and responsibilities of PGHTMs entail. The primary focus is always clinical work. Capacity building was repeatedly mentioned as another important task that the PGHTMs are engaged in. After probing, various other activities were mentioned, from research, to outbreak management, advocacy (in the fields of burn care, sexual and gender-based violence and child protection for instance), outreach and management. The PGHTMs were described as functioning at a level between a junior doctor and a specialist:

> *"You always need somebody who is above the medical officer and who can take certain decisions because of competence and experience. That's if the specialist is not around."* (manager, Sierre Leone)

A minority of interview participants expressed the need for doctors with more specialist knowledge. They felt PGHTMs with additional expertise in the areas of oncology, nephrology, orthopaedics, mental health, internal medicine, radiology and paediatrics for instance would be of benefit to patients who would be spared referrals. This sentiment was mainly found amongst interview participants in smaller district hospitals with no specialists amongst the other staff.

However, overall, the importance of having a doctor who could respond to any given need of a patient was stressed. The additional value of such a role included a larger impact requiring fewer advanced resources:

> "*Because it's not easy to build the infrastructure and the capacity and so on and so forth. So you train the generalist that will address the majority need of the population*." (Key informant 5))

Secondly, general training was felt to contribute to an increased confidence for the PGHTM themselves:

> "*And I find it gives people enough confidence to be engaged. They're not specialist on any of the topics, but they are competent enough to be able to diagnose and manage the most common cases*." (Key informant 4).

For specialist care where there is no in-country capacity, the key informants argued that both exchange programmes as well as telemedicine could offer solutions:

> *"While the ones that require special need you create additional program of exchange between universities, so the universities can be in and out in and out with each other."* (Key informant 5)

> *"But then having someone who is competent, at least preliminary competence in obstetrics, gynecology and surgery in and in tropical medicine provides immediately a better quality of requesting for aid in telemedicine because then they know what to describe."* (Key informant 4)

**Added value lies mainly in filling a human resource (HR) gap and capacity building**

What do the host institutes regard as the added value of PGHTMs? The below figure illustrates the main areas where PGHTMs were seen to add value.

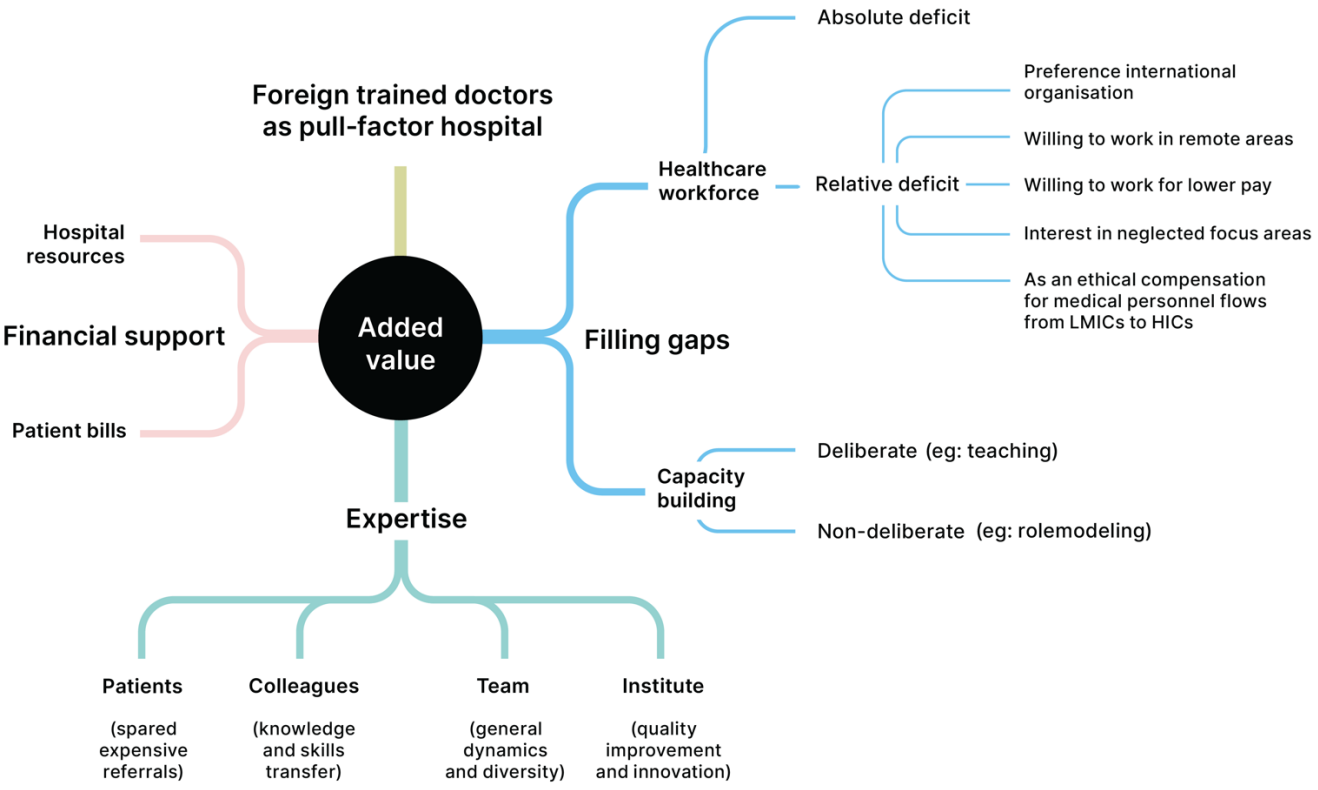


*Figure 1: Visual overview of the added value of PGHTMs according to host institutes*

This study illustrates how PGHTMs mainly 'fill gaps' by either a) providing a much-needed workforce or b) investing in capacity building. Capacity building, in turn, can be a) deliberate or b) non-deliberate when PGHTMs create change through leading by example, as we will explain further on in this section.

With just one exception, all interview participants emphasized the importance of PGHTMs in filling HR gaps. Interview participants communicated either an absolute nation-wide deficit of doctors or a lack of interest of national doctors to work in their institutes – either due to the remoteness of the hospital, or the low financial incentives being offered. That Dutch PGHTMs were willing to work remotely for little or no pay was much appreciated:

> *"What I'm thinking and what I'm seeing is doctors from abroad are still being needed. Because the work is so huge but the doctors are less, and if they come not paid, that is volunteer and you know, to pay a doctor is very expensive."* (Nurse, Tanzania)

Two key informants and one interview participant explained how in fact no real HR gap exists, but the country either faces challenges in retaining staff, or organizations make conscious choices to employ foreign trained doctors due to the ease of being able to communicate with them in the same (often English) language. In that sense, the key informants argued that PGHTMs can act as an ethical compensation for the brain drain, since *"the global South have become manufacturer for health workforce for the global North"* (Key informant 5). As one of the key informants put it:

> *"And of course, we lose a lot of our human resources, our graduates, our doctors to places like the Netherlands and Europe and Australia and Canada. So, I suppose in one sense it's quite nice if if there are one or two doctors flowing back in the other direction."* (Key informant 3)

The question then remains what PGHTMs are adding beyond solely workforce. However, despite one notion that *"in a perfect world, no, we don't need them"* (Key informant 3) most interview participants agreed that even there where no deficit of doctors exists, PGHTMs are valuable because of both their expertise and investment in capacity building. Their expertise is beneficial to colleagues (who learn from them), to patients (who are spared expensive referrals) as well as for the general dynamics of the team. The key informant working for MSF explained how "*a mix of national local staff, medical staff and international from different backgrounds allows the leadership inside the clinical team to be multifaceted."* He continued to explain that eventually this diversity results in better clinical outcomes since it allows for the challenging of cultural and clinical dogma's:

> *"Having people with clinical training and practice that comes from multiple different backgrounds is de facto useful because they can help each other see different angles. They can have a discussion and debate, and it it diversifies and enriches clinical practice, especially in settings that are unpredictable, that you haven't trained in before."* (Key informant 3)

Besides contributing with clinical and cultural expertise, PGHTMs also bring quality improvement and innovation to the host institutes. The interview participants gave various examples of how healthcare had benefitted due to presence of PGHTMs, from building a neonatal intensive care (Tanzania) to digitalization (PNG, Mali), updating protocols (Thailand, India), improving reporting systems (PNG) and investing in malnutrition programs and burns care (Tanzania) for example. Improvements in emergency medicine stood out in particular: the building of physical infrastructures, implementation of emergency protocols, introduction of new medication and encouragement of a culture of urgency. This particular expertise in

organisation of healthcare was highlighted as a specific value of PGHTMs, since *"just being from the global North, there's a lot of culture around planning, around quality, around holding yourself accountable for an outcome of certainty."* (Key informant 5) PGHTMs are also seen to focus on healthcare domains that national staff either have no interest in or do not have the time for:

> *"So in several neglected parts of healthcare, which are not picked up by the local doctors and so that, yeah, so that to me is additional value."* (referring to burns care) (medical doctor, Tanzania)

The added value of teaching was repeatedly mentioned as a great asset of PGHTMs. Knowledge and skills transfer is often deliberate, through formal and informal teaching (presentations, trainings, workshops), bedside teaching or general supervision, where hands-on practical simulations training and exercises were noted as being particularly beneficial. But non-deliberate transfer of soft skills through role-modeling was also highlighted. For example: refugees in Thailand were noted to keep returning to the clinic because of the respectful maternity care they received there. This attitude was adopted by the rest of the local healthcare workers:

> *"So bringing this equality and teamwork is something you can't do if you haven't been trained in it."* (Medical doctor, Thailand)

Another example is the aformentioned sense of urgency in the clinical management of emergency cases, time management and a general work ethos which was adopted by the local staff, as illustrated in the below citation:

> *"Hard working spirit, cause they are hard worker so when we see them working hard, we also adopting that spirit of working harder."* (Clinical officer, Malawi)

Interesting is that two out of the five key informants mentioned the importance of not traumatizing doctors who end up working in district settings and that PGHTMs fulfil an important role in mentorship for their local colleagues. An additional added value of PGHTMs is that they often provide financial support to the institute, be it in the form of buying medicines or medical equipment, or through paying hospital bills for patients. Lastly, PGHTMs are regarded as a positive pull-factor for the institute per gratia of them being foreign. Interview participants from Tanzania and Sierra Leone explicitly mentioned that the community preferred being treated by white doctors.

> *"[Interviewer] Why do you think that they like the white doctor so much? [Participant] It is just a belief that a white person is is more educated, with enough resources and they trust the white. It is just our culture."* (Nurse, Tanzania)

None of the interview participants were negative towards this preference. On the contrary, it was regarded a normal phenomenon and *"this is not a problem for us"* (Nurse, Tanzania). The wish of the patient was seen as a priority:

> *"If you don't satisfy this patient psychologically, that simply means you are not helping this patient. So, if the patient is requesting for a foreign doctor, call upon the foreign doctors to come and see this patient."* (Clinical officer, Sierra Leone)

**Characteristics PGHTM**

Interview participants spoke very positively about professional and many personal traits of the PGHTMs, even wondering whether the OIGT recruited them based on these criteria. Table 5 classifies the characteristics according to the frequency they were mentioned.

*Table 5: characteristics of PGHTMs*

| **Mentioned >5 times** | **Mentioned 2-4 times** | **Mentioned once** |
|---|---|---|
| Hard workers (work after hours, on weekends) | Team players | Good listeners |
| Go the extra mile for patients | Have a heart for the poor, care about the least privileged | Sincere |
| Compassionate towards patients | Punctual and sensitive of time | Bold and clear in decision-making |
| Flexible, adapt quickly to the new environment | Polite | Resilient |
| Open-minded | | Generous in teaching and passing on skills |
| Committed, passionate, driven | | Inquisitive – this is good because it keeps the local supervisors on the ball and allows them to justify why they do what they do |
| Friendly | | |

### 8.2.3 Competencies

In the below sections the knowledge, skills and attitudes as outlined in the training curriculum are discussed against a) the actual needs in the host institutes and b) the extent to which the PGHTMs were perceived to possess these competencies upon arrival at the host institutes (figure 2). The general conclusion of both the survey and interviews was that PGHTMs are well positioned to respond to local needs. Interview participants explained how PGHTMs' competencies might not perfectly match the local needs immediately, but that improvements are seen with time. As one of the key informants rhetorically put it:

> *"In the world where you don't have a doctor, would you rather have no doctor, or would you rather have a doctor with a bit of a mismatch who can probably kind of gradually get grips with things?"* (Key informant 3)

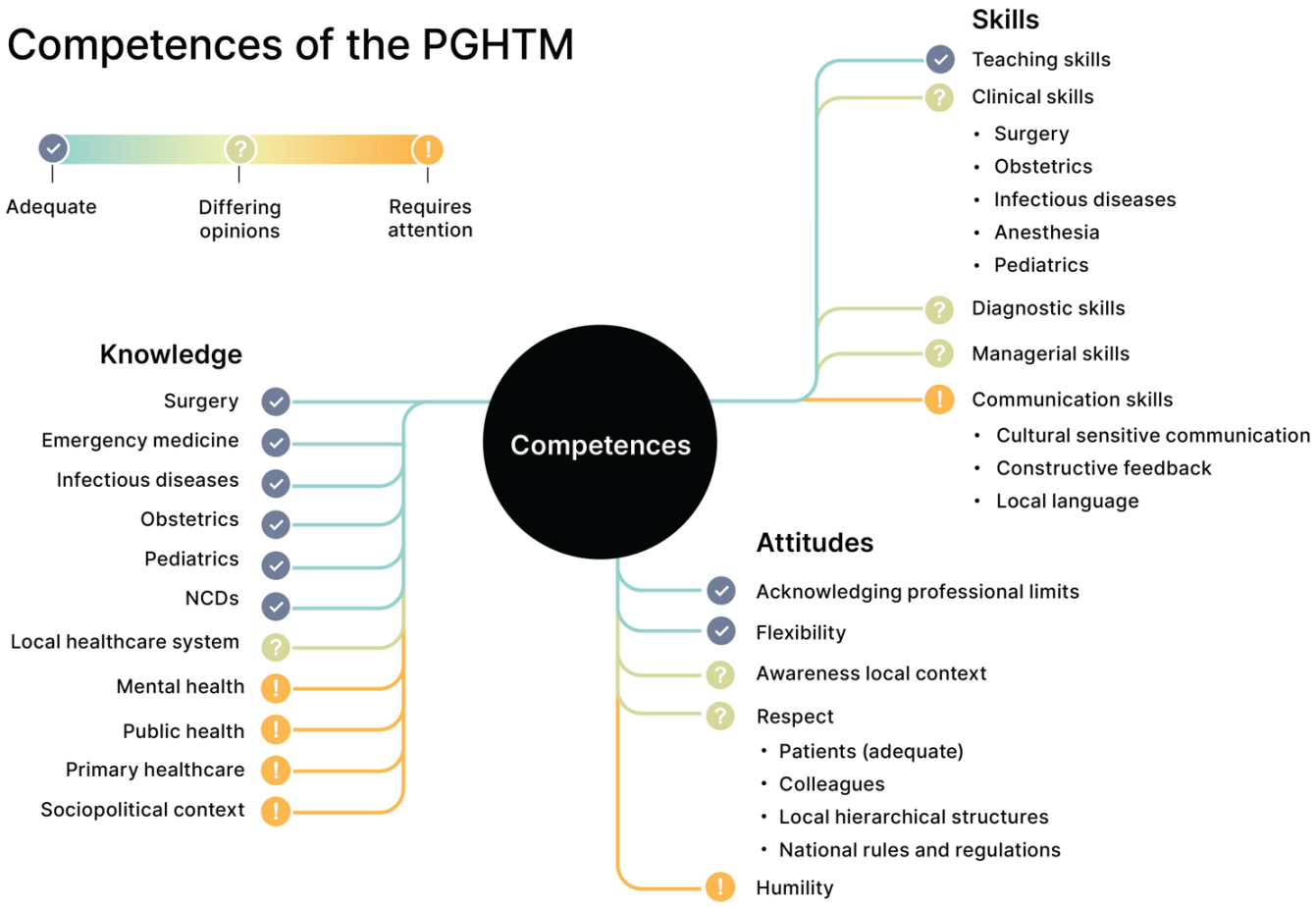


*Figure 2: The required competences and extent to which PGHTMs possessed these upon arrival*

#### *8.2.3.1 Knowledge*

**Surgery, emergency medicine, infectious diseases, maternal health and pediatrics up to par**

Which domains of knowledge are required according to the host institutes? Knowledge of surgery, emergency medicine and infectious diseases was mentioned most frequently and identified as most essential. PGHTM's surgical knowledge was considered adequate. Their expertise in emergency medicine was most appreciated.

> *"The emergency knowledge [is the most important, red]. Those doctors who can have emergency knowledge because most of the patients who come to the hospital comes when there is an emergency."* (Nurse, Tanzania)

With regards to infectious diseases such as malaria, tuberculosis, typhoid, respiraroty tract infections and HIV (all mentioned explicitly), the general sentiment was that PGHTMs posess the theoretical knowledge but recognising and diagnosing cases in real life is initially a challenge. However, there is a steep learning curve.

Maternal health was also explicitly mentioned as an essential field, and overall interview participants were satisfied with the PGTHMs' knowledge. However, acknowledging context-specific risk factors needs attention, as the below citation from the survey demonstrates:

> *"Use of oxytocin is essential to prevent PPH [post-partum haemorrhage, red] as availability of blood is limited. And mothers are often anaemic. Most doctors are too casual about preventing blood loss."* (survey)

The importance of a broad paediatric understanding and good management of paediatric emergencies (both the ETAT and APLS trainings were recognized as beneficial for the context) was highlighted. PGHTMs' knowledge was generally rated adequate for the setting, although inter-personal differences exist according to the interview participants.

**Knowledge of NCDs appreciated but mental health is missing**

With regards to Non-Communicable Diseases (NCDs), interview participants were very satisfied with the knowledge PGHTMs had and training in this domain was particularly appreciated.

> *"Especially diabetes and hypertention, they have a great knowledge."* (Clinical officer, Malawi)

One participant requested that PGHTMs have more robust knowledge in the diagnosis and management of cancers, so that these would not have to be transferred to other centres. Another respondent and one of the key informants mentioned mental health as a neglected – yet crucial – area of knowledge.

> *"We needed maybe to bring or send us more Dutch doctors with different skills of different programs. For example, I'm saying we are only having one working in pediatrics and the another one working in OBS and GYNO, but we have many other departments which are lacking expertise of this Dutch people. So maybe when they are coming or when when you are sending them, make sure maybe you send more for different field, a few with the same field. [Interviewer] And which fields would your suggestion be? [Respondent] Ah, that's doctors majoring surgery. General surgery and mental health. A lot of cases of mental health."* (IDI, clinical officer, Malawi)

Besides illustrating the importance of mental health, the quote above once again highlights how essential surgery is considered, since only PGHTMs of the 'mother-child' profile work in this particular hospital in Malawi.

**Primary healthcare and public health require attention**

Robust public health knowledge was identified as essential, and sometimes lacking, by one respondent and two key informants. The importance of primary healthcare was emphasized by one of the key informants, who noted that "most of our health systems in these countries are quite hospital-centric in their viewpoint." (Key informant 3). He argued that if one wants to strengthen the district health systems, investment in doctors with robust primary healthcare knowledge and skills is key.

> *"Now in most countries, of course, they haven't really placed doctors at this level very much. They've tended to rely on mid-level doctors and nurses, you know, in primary care and then community health workers and well, I mean, and as we know: they can get coverage but they can't always get quality. […] And we know that if you walk out of medical school you don't actually have this kind of skillset that I've just described to you."* (KII, Key informant 3)

**Understanding the local context requires time and deliberate effort**

Knowledge of the local healthcare system and guidelines was considered essential and interview participants were mostly of the opinion that deliberate effort should be invested in acquiring this competence. PGHTMs were commended for the effort invested into studying national guidelines and local protocols, either before departure (by enquiring with colleagues) or after arrival. In the latter situation in particular, interview participants noticed it took a while for PGHTMs to fully grasp the local context:

> *"Because I previously noted like the doctors which are I'm working with always refer to the guidelines from their country. Yeah, which was a challenge, but now I have seen some they have our guidelines in their phones."* (Clinical officer, Malawi)

Three of the five key informants however, were more critical of PGHTMs knowledge of the local context. They argued that where PGHTMs may be adept at analyzing the *"epidemiological landscape"* (Key informant 4), there is room for improvement when it comes to understanding the cultural and sociopolitical context.

> *"So for technical perspective I think it is okay. I think the area that we need to pay attention to is what I call the social setting, contextual drivers. […] So understanding the prevailing condition also matters. So social issues, contextual drivers of the problem, of prevailing infectious diseases."* (Key informant 5)

This deeper understanding was considered imperative since just focusing on clinical care without paying attention to the sociopolitical implications of interventions was seen to be *"not optimal, not as useful as it can be, and potentially extremely harmful."* (Key informant 4). An example is for instance when PGHTMs *"treat patients who are disempowered or prosecuted just to send them back to being disempowered and prosecuted is not good enough."* (Key informant 4)

Key informants mentioned how reflexivity is an important ingredient to achieve such an understanding. They mentioned how *"over the past decades, the medical profession in the West has been reduced into a vocation, rather than a social call."* (Key informant 4) and encouraged PGHTMs to critically think about their own role and the reasons they were doing what they were doing.

> *"I think that if we want to know why do things happen, we need to be aware of our own role and and it's very important to know, why do you do what you are doing?"* (Key informant 1)

#### *8.2.3.2 Skills*

Three domains of skills emerged as important: clinical skills, communication skills and managerial skills.

**Clinical skills**

The importance of a strong clinical acumen was stressed by respondents throughout the interviews, secondary to either the limited diagnostic possibilities or the financial burden such diagnostics brought upon patients. Table 6 illustrates some of the skills that interview participants felt were necessary per domain:

*Table 6: specific skills mentioned by interview participants per domain*

| **Surgery** | **Obstetrics** | **Pediatrics** |
|---|---|---|
| Conservative management of fractures | Complex deliveries | Intubation |
| Hernias | Cesarian sections | Intravenous cannulation |
| Amputations | Cardiotocography interpretation | Neonatal resuscitation |
| Debridement | Labour ward management | |
| Minor surgery: lumps and bumps, incision and drainage | Routine antenatal care | |
| | Gynecological OPD (Out Patient Department) clinics | |
| | Emergency operations (e.g.: ectopic pregnancies) | |

Although PGHTMs were complimented for their *"hands-on, practical skills that we really need to do here"* (Medical doctor, Thailand), most survey respondents agreed that PGHTMs do not arrive with the complete skillset necessary for the setting. However, they demonstrate a steep learning curve. In anesthesia, surgery, obstetrics, pediatrics and infectious diseases, interview participants noted that PGHTMs gain confidence while working:

> *"And in fact, they have adequate knowledge before coming, It's mainly the skills and especially the obstetric or the surgical skills which – and it might not be on the same level as the local doctors, but they learn quickly."* (Medical doctor, India)

It was for this reason too that interview participants underlined the importance of the 6-month GHR (Global Health Residency).

Noteworthy is that in surgery, pediatrics and anesthesia, the general sentiment was that mainly the hard skills require consolidation. Contrasting this was an expressed need for the development of predominantly supporting (soft) skills in obstetrics. Survey interview participants noted for example, how *"because of language barriers the OPD skills are not very developed*" (survey answer) and *"skills and abilities vary but all of them learn. Interaction with team and mutual trust varies."* (survey answer). This point is further expanded on under 'attitudes'.

For infectious diseases too, theoretical knowledge was deemed sufficient, but *"there is no amount of training you can do to someone in the Netherlands to understand how to differentiate between viral hemorrhagic fevers and typhoid fever and diarrhoeal disease, it is just impossible!"* (Key informant 5). Therefore, one needs to be in the context to translate the theoretical knowledge to practice:

> *"Because by the time they go to a low resource setting, they still need to actually see the cases they are trained on. They need to learn how measles looks on a black skin. They need to know, how do you do medical rounds in a cramped hospital? How do you keep your stuff clean in a dusty, earth floor you know?"* (Key informant 4)

Diagnostic skills were generally regarded as adequate. However, certain interview participants noticed that PGHTMs sometimes lack confidence in their diagnosis or have to (tele) consult with colleagues in their home-country.

> *"Though for some, they are not specialized, they're not specialized in like, for example in radiology and sonography, but they're best with the knowledge."* (Clinical officer, Sierra Leone)

**Communication and teaching skills as a core competency**

PGHTMs' teaching skills and the different methodologies used (presentations, scenarios, bedside teaching, drills etc.) are much appreciated. Regarding supervision and the provision of constructive feedback, opinions varied: some interview participants felt they did so excellently (*"100% good. Mentorship activities are done on a daily basis to both clinical and nursing staff"* (survey answer)), where others mentioned how *"they are good supervisors but hard when noted mistakes"* (survey answer).

The importance of investing in learning the local language was stressed. In India and Sierra Leone interview participants felt PGHTMs were well prepared and possessed enough language skills to assist deliveries and conduct ward rounds for instance.

> *"They come quite well prepared. They also learn from the nurses what they need and within a month or so they're quite confident to converse or say a few words to the patients who are also very happy."* (Medical doctor, India)

In other countries, it was felt the language barrier posed challenges in communication with patients, slowed down work and meant that valuable staff needed to be made available to translate (and therefore had less time for other duties).

**Doctors as managers**

The importance of managerial skills emerged in various interviews. A minority of interview participants felt PGHTMs were well equipped.

> *"And what also keeps them going is that they try as hard as possible to go through our SOPs, our standard operating procedures, like of a clinical officer or of a nurse. In conclusion their managerial skills are good."* (Clinical officer, Sierra Leone)

Others said PGHTMs learned the necessary managerial skills on the job.

> *"They learn here, because we have some in the management team, they have seen how we struggle to get...How to run the hospital. So, they learn here they can't learn from Europe. It's a different environment."* (Medical doctor, Tanzania)

A third group of interview participants expressed that this competency was not adequately developed and needed extra attention in the training program.

> *"[Interviewer] To what extent do you feel that we're training adequately on management? [Respondent] Not enough. Not enough. But in a context like MSF, you never go alone, you're always supervised by someone more experienced. That's why I say it is important to be clinically*

*compentent […] You know, it's one thing to know how to do fluid replacement. It's another thing to know how to build a cholera treatment centre from scratch."* (Key informant 4)

#### *8.2.3.3 Attitudes*

**Acknowledging one's professional limits**

In general, PGHTMs' ability to reflect and act upon their professional limits was considered – albeit often dependent on the person – well developed.

> *"The good thing is that most of them are really, are really very willing to call the gynecologist and when he's available he will really guide them well, so."* (Medical doctor, Tanzania)

One of the key informants argued that this is per gratio of their general training:

> *"They're not specialist on any of the topics, but they are competent enough to be able to diagnose and manage the most common cases. And also it's not only the competence it gives them, but the understanding of where their competence and incompetence lies. So if you know exactly what is the range of stuff, and you know what you can do, then you also know what you can't do."* (Key informant 4)

There was one account of how PGHTMs *"sometimes are overconfident and they can jump into things that they may not be able to manage."* (Medical doctor, Tanzania).

**Culturally-sensitive communication: proactiveness, directness and expressions of frustration**

Although PGHTMs were appreciated for their open and friendly nature, various challenges in communication arose during the interviews. In Sierra Leone for example, colleagues initially misunderstood the proactiveness and drive of PGHTMs as aggressiveness. Similarly, the (in)famous direct Dutch communication requires some getting used to but is appreciated once understood.

> *"The Dutch doctors, they're good in one thing. They are straight. When they are not happy with something they will tell you. And that is one aspect which is good. But, in some ways it can be interpreted negatively, like being arrogant. Being…Maybe not respecting the locals and something like that so it it has both sides I would say. It has both sides. It has the good and the bad."* (Medical doctor, Tanzania)

Shouting was mentioned in three interviews across three different countries:

> *"They want to use something and it is not available they will shout about it. They will shout. They will create a scene, which is not good."* (Management, Sierra Leone)

> *"Frustrated crying and then they go and relax and then later on they are sorted out and they can be back in normal mood and that kind of a thing."* (Medical doctor, Tanzania)

'Making a scene' mainly occured when medication was not administered on time or medical activities did not occur with the timeliness the PGHTM felt was necessary. This cultural discrepancy in urgency is not new. As one of the key informants advised, the trick lies in understanding the different ways of working and finding a way to *"align with it, rather than thinking he can change it on arrival."* (Key informant 5)

> *"So for me, I think it is the two things, it is about understanding the attitude of our colleagues in the global South but also understanding our cultural differences, total cultural differences. And finding a way of not allowing it to create an early friction between us and the recipient. Because if that friction happen then the overall long term benefit will eventually be lost."* (Key informant 5)

**Cultural sensitivity versus cultural understanding**

As one of the interview participants iterated: "*Even if you are the greatest doctor in the planet, if you don't master the cultural aspect of our people, they will say that you are not good enough*." (Medical doctor, Mali). Overall PGHTMs were praised for their efforts to understand the local culture, intergrate in the community and respect customs. Actively preparing for this through reading about the country and being briefed by former colleagues was appreciated. In some interviews, certain practices were identified as being problematic and culturally unacceptable, such as: smoking, consuming alcohol, holding disruptive parties, observing a certain dress code, cohabiting as an unmarried couple and not attending church services.

However, while PGHTMs are considered culturally *sensitive*, interview participants argued that a true cultural *understanding* and humility towards cultural differences still lacks. Examples of this include the aforementioned conflicts in work ethics and urgency where *"the skill is to sort of free oneself from the cultural judgments […] and bigoted opinions and approach something from a point of view of curiosity. Respect."* (Key informant 4) The same key informant also warned against simplistic cultural generalisations (like for example, that in predominantly Muslim countries women are only treated by female doctors) which could undermine medical efforts.

As one of the interview participants advised:

> *"Well, you need to teach them that whenever they go to a certain country or a community, they first of all need to understand the situation of the facility they are working. That is the first. They need to understand. Don't, don't just conclude. Say, 'oh this is what it's supposed to be, and it should be.' Let them try to understand the situation on ground."* (Manager, Sierre Leone)

**Awareness of the local context**

For many of the interview participants, the 'situation on the ground' included the fact that patients are not always able to afford certain diagnostic investigations (the importance of an astute clinical acumen was therefore repeated) or medication.

> *"You know, when people come from Europe you have that humanitarian feeling. They just want to treat people. They just want to treat everything. But yeah, you know, we have to find the resources how to run the facility…"* (Management, Sierra Leone)

Awareness of the socio-political situation was also considered imperative. For example, one of the interview participants from Tanzania explained how flagging corruption "*without consulting Bishop or RMO [Regional Medical Officer, red] or even your Doctor in Charge, then things go wrong for you."* (Medical doctor, Tanzania)

But PGHTMs were complimented for their attitude towards learning about local context.

*"And yeah they are very keen on learning how we do things in this environment and adapting to the factors that make us decide on what to do and what not to do in this environment."* (Medical doctor, Ghana)

**Respect and trust: patients, colleagues, hierarchical structures**

The themes of respect and trust emerged frequently throughout the interviews. The importance of respect for patients, for direct colleagues but also for local and national rules and regulations was emphasized. Generally, it was felt that PGHTMs treat their patients with a lot of respect and dignity. In Thailand for instance, the respondent explained how the PGHTMs' attitude contributed to dignified maternity care:

*"How to do a curette is a clinical hands-on thing, but how to build rapport. Respectful maternity care is all about trust, honesty. No blame."* (Medical doctor, Thailand)

Interview participants were very positive about their professional relationship with PGHTMs. Having said this, they did pinpoint areas of improvement. Especially in obstetrics, a lack of trust in midwives' abilities was noted as a concern. Furthermore, it was felt that PGHTMs should be sensitive of their colleagues' English and/or computer skills and appreciate that while these may not be as developed as their own, it should not be interpreted as a lack of intelligence.

*"So, you found example a nurse who been working for more than 30 years in the hospital. So you think probably she is not good because probably she is not able to adapt to those electronic things and other things. So you start to minimize, because she's not good in English."* (Medical doctor, Tanzania)

The importance of comprehending local hierarchical power structures was highlighted too. When done well, this leads to a positive team dynamics, as was the case in Sierre Leone:

*"I think what is good about the Dutch doctors, they always recognize the presence of the medical doctor […] So they almost always engage the Sierra Leonian medical doctor. They make him feel belong. That is really working with a team of doctors, not a team of Dutch."* (Clinical officer, Sierre Leone)

In Tanzania on the other hand, interview participants from two different host institutes mentioned how PGHTMs' non-compliance with existing hierarchical structures resulted in dampened team spirits.

*"They can be overconfident, and then they can go ahead and do some decisions. That may be a bit challenging for the local doctors and they feel like they are like undermined."* (Medical doctor, Tanzania)

Respect for local national regulations and ethical guidelines was deemed important too. The key informant from Tanzania explained how *"standards are standards, does not matter where you are practicing."* (Key informant 2) and how a failure to comply with this (Westeners practising without formal licensing, medical professionals *"just taking pictures of patients on the ward or during operations without even consent. Then you just post to the world. That's not fair, you know. Not fair.*" (Key informant 2)) had resulted in the government tightening their control on foreign doctors.

*"OK, yes, we need support. But we need people, they have to follow rules and we need to scrutinize whoever comes in, we need to make sure whoever comes they are coming with the goodwill and that they meet the required standards."* (Key informant 2)

**Flexibility and patience crucial for the challenging working conditions**

Many of the above communication problems go hand in hand with attributes of flexibility and patience. Interview participants explained how PGHTMs' *"humanitarian way of thinking"* results in them getting *"easily frustrated for certain things."* (Manager, Sierra Leone). Coming with a resilient mindset is crucial when working in challenging circumstances away from family and friends where *"it's not that easy and resources are limited. Sometimes the wards are overflowing and the ICU [intensive care unit, red] is overflowing"* (Medical doctor, India) However, the general sentiment was that PGHTMs are great at adapting to their new environment, especially when compared with doctors from other Western countries.

*"I also think that most of them are able to adjust, not necessarily with just the clinical work, but in blending in the environment. So they they get on well with patients, get on well with your colleagues, get on well with the other staff as well."* (Medical doctor, Ghana)

**Humility, humility, humility**

Humility was mentioned over and over as key to achieve many of the above attitudes. Besides one respondent, who explicitly mentioned that *"they're quite humble, they are willing to learn and all that"* (Medical doctor, Thailand), most respondents felt PGHTMs could invest in humility. Interview participants expressed how *"they think they know more than the people who are here"* (Medical doctor, Mali), perhaps because they went to *"a university which is sophisticated and all…"* (Medical doctor, Tanzania) or perhaps "*because they see a lot of mistakes, a lot of things that could be better and so on, and that can nurture a feeling of superiority."* (Key informant 1) However this was seen to jeopardize the PGHTMs' learning process as well as their relationship with colleagues, as the below citation demonstrates:

"*And you see, you come, if you come with a superiority and you think you know everything, you cannot learn from the people who you think that you know more than them. That is complex, you see*." (Medical doctor, Mali)

Humility was seen to be developed through critical self-reflection and a conscious attempt to annihilate judgement:

"*You need to be aware and in order to become aware you need to question your own position, everything. Everything, everything that I think. One word we should abolish is the word 'normal'*." (Key informant 1)

Most interview participants agreed that there should be a focus on teaching these attitudes during the PGHTMs' training: *"it's also our responsibility to have people fit in. But I think this, these are also things which should be addressed in the courses they get."* (Medical doctor, Tanzania)

### 8.2.4 Reflections on the training program and suggested improvements

**Unique skillset**

Interview participants greatly valued the training PGHTMs receive, expressing how *"the lives saved by Dutch tropical doctors - because that's what they're doing - should be all credit to the institution training*

*them and the Dutch Government."* (Medical doctor, Thailand). It was considered unique in the wide skill set it offers:

> "*So general opinion is I think it is quite a unique program. I don't know if anywhere else that provides a program like this that is tailored towards wider skills and this is an absolute necessity now because we are struggling more and more in finding people who are*." (Key informant 4)

The Global Health Residency (GHR) stood out in particular, protecting graduates from what one of the key informants coined a *"practice-shock"* since even though residents might be skilled, once they go into the low-resource setting *"the infrastructure, the equipment, the support environment for you to apply the skill is totally missing."* (Key informant 5)

Having said this, more investment was deemed necessary in:

- NCDs and primary healthcare (*"But I do also pick up maybe a little bit of an overemphasis, which is historical now, on infectious diseases as opposed to the rest of the burden of disease."* (Key informant 3));
- Management ("*They should learn the basics of strategic planning, finance, law and human resource management. Also, training and running efficient nursing services in hospitals."* (survey answer));
- Sociopolitical drivers of health ("*So for technical perspective I think it is okay. In my opinion. I think the area that we need to pay attention to is what I call the social setting, contextual drivers."* (Key informant 5));
- Cultural understanding without judgement *("I would avoid trying to give them, you know, those seminars about cultural sensitivity. Cultural sensitivity without cultural acceptance and understanding and openness, is performance."* (Key informant 4)); and
- An attitude of humility and critical reflection on one's role ("*What is missing is, how do you navigate the politics of health, the governance of health, your moral position as an outsider?"* (Key informant 4))

**Bolder vision**

And on another level altogether, key informants challenged the training program in its entirety, which they felt was *"still entirely missing a vision of global health or of health solidarity or of an emancipatory power of healthcare and its interaction with climate justice, with social justice, with, you know, anti-capitalist."* (Key informant 4). For instance, training local healthcare workers as opposed to Dutch PGHTMs was suggested as one possible approach to drastically dismantle the system.

> *"If the resources we are using from here [red: the Netherlands] to train tropical doctors to send them to Malawi, the resourcing we use in all of them, that resources we can employ – for one doctor going to Malawi, you can employ ten Malawian doctors to stay in Malawi and prodice the service*." (Key informant 5)

### 8.2.5 Other emerging themes

**Limited understanding of the training program**

The interviews demonstrated that host institutes have only limited knowledge of what the Dutch GHTM training actually entails. Exceptions are the interview participants involved in supervising residents during their GHR.

**Duration of deployment**

Having established that PGHTMs do indeed have an added value for the host institutes, what would be the minimum duration of deployment for this to take effect? Concerning the minimum duration of deployment to have an added value for the host institutes, most interview participants agreed that two to three years was necessary for both the institute as well as the PGHTM to start seeing the fruits of their stay. The time was deemed necessary for adequate skills and knowledge transfer, for the sustainable implementation of projects and meaningful collaborations with local authorities and for the PGHTM to consolidate their surgical and obstetric skills and understand the context, culture, local guidelines. The below citations illustrate the rationale:

> *"I think three years would be really good, but not more than three years because it's really like, we we in a remote place and I think three years would really benefit us, but also benefit them to as well. [Interviewer] Yeah. Wonderful, and when you say benefits them what do you mean by that? [Participant] I think they would know the hospital very well. The culture and the challenges. And some of the things that they want to improve or help us to accomplish would really see it happen in their eyes before they leave."* (Management, PNG)

> *"I think the for example, if you take her first year. She was still gaining, gaining her momentum in the practice. But after the first year of […] She was very much, for example, her knowledge was very solid, her skills."* (Medical doctor, Tanzania)

> *"Most tropical doctors only stay one or two years. They cannot collaborate in any meaningful way with local health authorities"* (survey comment)

**Mutual learning and bilateral exchange**

The interviews also clearly demonstrated how PGHTMs benefitted from their work in the host institutes too and that thus, the added value was mutual as *"both parties pick up the positive things from the other."* (Medical doctor, Tanzania).

> "*So in that way there is a mutual like, they benefit from each other in that aspect. So, the local doctors will have some knowledge yes and very little experience while the Dutch doctors will have enough knowledge and yeah a bit more experience and then if you combine the two then they have that good outcome in terms of patient care and all that*." (Medical doctor, Tanzania)

> *"So the doctors can come in and, while they are helping the patient, they are also learning and they are also improving their knowledge and confidence and skills*." (Medical doctor, Tanzania)

> "*It doesn't make us feel less worthy because when they come they learn from us and don't just start to do things*." (Nurse, Tanzania)

Interview participants also expressed a wish for more bilateral exhange – clinically exchange but also academic in which teachers from low-resource settings (ideally from the host institutes) could teach at the NTC (Dutch course in Tropical Medicine and Hygiene) course, joint certificates could be issued or – in an ideal situation – the whole training programme could be co-owned with universities in the Global South.

**A changing global health landscape**

The world in which PGHTMs work was seen to be changing. Where the focus was historically on infectious diseases, all key informants and certain interview participants mentioned an increasing double burden of disease (sometimes secondary to urbanization) with non-communicable diseases becoming increasingly prevalent. It is important to keep this trend in mind when training PGHTMs and evaluating how *"global health [should] look like by virtue of competency."* (Key informant 5) Participants mentioned the risk of new infectious pandemics too. The effects of climate change were mentioned as well, and how this would require doctors who could respond to migrant-related and disaster-related health crises.

Additionally, digital health was noted to be an emerging healthcare component with the majority of the world's population owning a mobile telephone nowadays. Key informants mentioned how PGHTMs should capitalise on this trend and consider digital forms of healthcare delivery when planning programmes. Furthermore, it was mentioned how community approaches - in comprehensive primary healthcare in particular – are gaining more traction globally. A final significant transition that spontaneously came up in most of the KIIs was the movement to decolonise global health. Key informants encouraged PGHTMs to adopt reflexivity in their role and suggested the training programme needed to critically look at their North-South relations.

In summary, it is crucial that profile of the PGHTM aligns with developments in global health. *What* they are trained in would need to consider increasingly prevalent NCDs, the risk of infectious pandemics and the importance of planetary (including disaster-related) health. In considering *how* the future PGHTM conducts their work, important elements to consider include the emergence of digital health and increasing attention for power dynamics, social justice and reciprocity. The below figure 3 illustrates this:

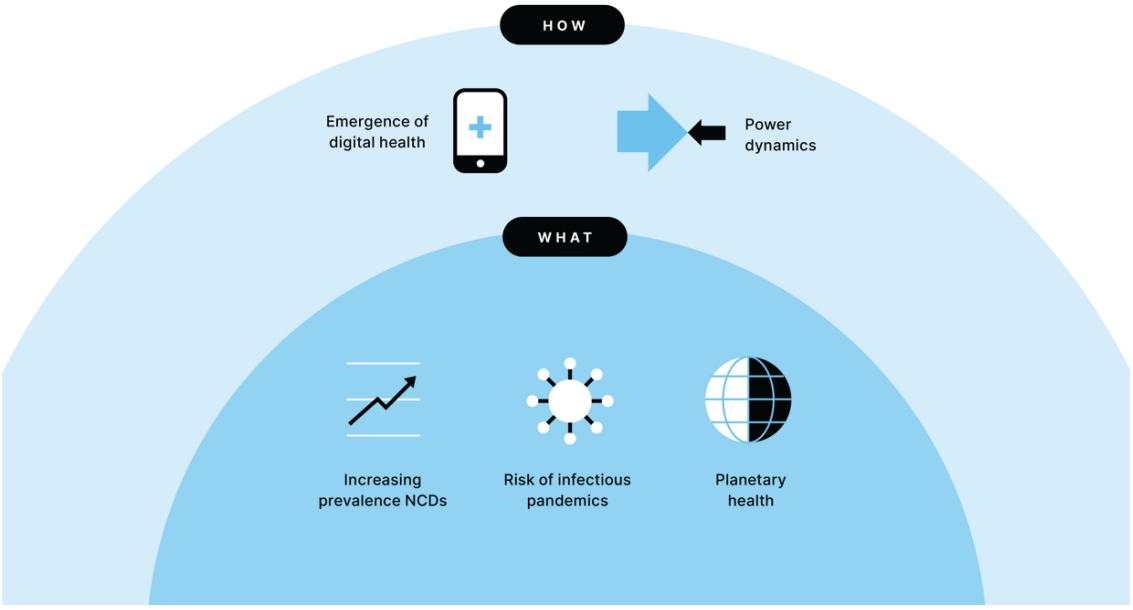


*Figure 3: the global health landscape that PGHTMs work in*

# 9 Discussion

## 9.1 Summary of main results

This mixed-methods study aimed to explore the needs of LMIC host institutes regarding skills, knowledge and attitudes for PGHTMs to inform the residency curriculum's aim, focus and direction and ensure it is demand-driven. The study established a continuing need for PGHTMs as they fill a present HR gap. The findings also show that PGHTMs support health systems through quality improvement, and that they strengthen capacity through deliberate as well as non-deliberate teaching. However, the specific skills PGHTMs need and types of roles they fill are context-dependent. Bi-directional medical partnerships could strengthen the equity, benefit and reciprocity of their continued presence.

## 9.2 Discussion of main results

While an added value of the PGHTM for LMIC contexts was widely recognized, the global health landscape is shifting, not only in the burden of diseases and increasing digitalization of health but also in the increasing focus on health equity and decolonization. An ethical concern we identified was the so-called 'mzungu-effect', referring to the phenomenon that patients perceive care offered by foreigners to be superior to that delivered by local staff, which has previously been described in the literature.[9, 12]

The Dutch PGHTM training programme aims to equip its residents with a skillset to respond to healthcare needs in low-resource settings and work at the crossroads between curative and preventative care. The OIGT aims to train professionals with a health equity mindset, an ability to work with vulnerable groups and a sound understanding of the social determinants of (ill) health.[7] This is in line with competences deemed important for global health practitioners from other HICs, such as the UK[17] and USA.[18] What differentiates the Dutch training programme is the focus on clinical competences related to surgery, emergency medicine, infectious diseases, maternal health and paediatrics, which - combined with teaching, advocacy, medical leadership and capacity strengthening in these fields - lie at the core of the curriculum.[7]

This study validates the training programme's strong clinical foundation. The domains covered by the different EPAs in the training curriculum were found to be consistent with what host institutes regarded important knowledge and skills areas, especially regarding surgery, obstetrics, paediatrics and emergency medicine. For certain EPAs however, – albeit receiving due attention in the curriculum – there appeared to exist a gap between theory and practice. For instance: competences in the management of a health facility (EPA 17) were not always regarded adequate by host institutes. Similarly, public health and primary health care (EPA 16) were found to require attention. The question then arises to what extent it is actually possible to consolidate all the outlined EPAs over the span of three years. Concerns regarding the overburdening of global health curricula and identifying what is 'essential' for whom are not new.[19] In a study soliciting the views of a wide range of stakeholders in order to develop core global health competencies for postgraduate doctors, conflicting perspectives emerged about the importance and relevance of different global health topics.[19] It is for precisely this reason that we suggest changing such EPAs into differentiations.

Having established that the selection of EPAs in the current PGHTM curriculum are in line with what host institutes regarded as important, this study also demonstrates how the EPAs do not sufficiently address,

nor reflect, important personal as well as overarching attitudes. For example: where the PGHTM curriculum duly mentions 'respect', 'professional attitudes' and 'ethical responsibility for choice of treatment'[7], the core attitudes of 'humility' and 'true understanding of the socio-political context' emphasized in this study are not formally included. The importance of these attitudes is echoed in various other studies examining LMIC host perceptions on HIC health professionals. [15, 20, 21] Participants in this study emphasized how extended stays of two to three years were essential for fully developing such competences.

Furthermore, the collaborative aspect of global health activities may be jeopardized by the emphasis on *individual* entrustment through EPAs. This study emphasizes the significance of collaboration through frequent mentions of mutual learning and bilateral exchange. This finding aligns with a previous study in which 55 global health experts were invited to participate in a multi-round, online Delphi process to identify essential global health activities and define the related EPAs required. In this study, the domains of 'equity advocate' and 'partnership developer' had the highest agreement for importance and relevance.[22]

One essential aspect of contributing to a more equitable global health landscape is that PGHTMs are aware that they are an active participant and influencer in a continued colonial system.[23] This sociocultural, historic and political context is not outside their realm of work. They operate within it - with or without their awareness of it - as was highlighted by the participants. As the movement to dismantle oppressive power structures and decolonize global health continues,[24, 25] the role of the PGHTM must continue to be examined. Looking forward, bi-directional models of exchanging skills, experiences and competences can provide mutual benefits.[26] Bi-directional partnerships are argued to help not only in promoting global health equity and justice, but also in supporting international goals toward reducing health disparities, bettering the sustainability of global health training and building strong and adaptive health systems across the world that benefit us all.[26]

In turn, interprofessional education and collaborative practice in global health are recognized by the World Health Organization (WHO) and other stakeholders as crucial for achieving the sustainable development goals.[27] Collaborative practice can lead to improved health outcomes, greater patient and provider satisfaction, and reduced healthcare costs. [27] However, interprofessional education is currently lacking in most global health education[28] as well as the PGHTM training programme. To address this, HIC institutions should offer opportunities for LMIC trainees to visit their institutions, similar to how LMIC host institutions offer such opportunities for HIC trainees. This requires addressing systematic barriers like cost and liability from a social justice perspective.

## 9.3 Next steps

This study showcases the competencies identified by host institutes as important for PGHTMs to be equipped with in order to function in their roles with maximum added value and positive impact. Future studies should explore how training programs can be set up to be adaptive (to changing needs) and responsive (to context-specific demands) in a standardized method.[29] The global health landscape is not one to remain stagnant and training programs must be flexible to future emergent needs. Further research should also explore the practicalities of how to overcome systemic barriers in setting up bi-directional partnerships for a global medical workforce.[26]

## 9.4 Strengths and Limitations

This study is unique in that to the best of our knowledge it is the first time that a HIC-based residency training institute, the OIGT, deployed research among its international stakeholders to inform revision of the training curriculum. Using multiple methods helped overcome the limitations that can come from using either method independently and the focus on qualitative data collection provided more comprehensive insight.[30] The use of a sequential methodology, with the survey informing the focus and topic guide of the interviews, increased the relevance of the interviews.[31] Moreover, the interviewer - being a PGHTM herself of mixed cultural background - was well aware of the field being investigated and could easily build rapport with the interview participants. Having said this, we were cognizant of her positionality as a PGHTM. Conscious reflexivity and empathic neutrality were therefore deployed throughout the process and the interviewer had a low threshold in requesting validation from the research group, who listened to interviews on request. While a single researcher conducted the interviews, the use of a second investigator to cross-check the coding helped triangulate findings and overcome researcher bias in the analysis of the results. Pilot running the survey improved its quality and validity. Finally, the diversity of interview participants representing a wide geographic area helps generalize the findings to the diverse areas PGHTMs work in.

However, this study also has limitations. Power dynamics, specifically in the form of the institute that the survey respondents rely on to send these doctors conducting the study, may have introduced bias in the responses of the interview participants. However, the researcher attempted to overcome this potential bias by explicitly informing both survey respondents as well as interview participants that the research would not affect their relationship with PGHTMs. Conducting the interviews in English may have limited the abilities of certain interview participants to vocalize their views and perspectives as accurately as they could have in their first language. All of the interviews being conducted online also introduced selection bias since only those interview participants with access to internet were able to participate. Recall bias may have influenced the results due to the need for interview participants to think back to their work PGHTMs that may have occurred a few years prior. Furthermore, the current training curriculum was taken as the starting point in the design of the survey, and therefore analysis was limited to a deductive approach.

# 10 Conclusion

PGHTMs play an important role in filling HR gaps in low-resource settings and provide added value in capacity building and quality improvement. While PGHTMs' theoretical knowledge is considered to be excellent upon arrival, consolidation of skills and understanding of the local context are predominantly developed on the job. The residency program is commended for training motivated and hardworking generalists with a strong clinical acumen. Having said this, host institutes feel more emphasis on NCDs, mental health, public health and managerial skills is beneficial. Additionally, PGHTMs are encouraged to invest in their understanding of the local socio-political context, reflexivity, and humility. The unique skillset offered by PGHTMs can be further enhanced with a bolder vision that emphasizes bilateral exchange and mutual ownership over the curriculum.

# 11 Recommendations

In the following section we outline our recommendations to the OIGT based on the findings of this study.

**To continue (what is going well):**

1. Continue training broadly for knowledge and skills in the fields of surgery, obstetrics, paediatrics and emergency medicine; the 'generalist' with a strong clinical acumen is very valuable in the low resource settings where PGHTMs currently work.

2. Continue investing in relationships with partnering hospitals for the GHR since this component of a PGHTM's training allows for consolidation of practical skills and provides a crucial introduction to the local context.

3. Continue selection of new residents based on personal attributes such as passion to reduce health inequities, commitment, a hardworking nature, compassion, flexibility and good intercultural communication skills, as these character traits are what the PGHTMs are appreciated for most.

**To implement (what could benefit from improvement):**

1. Ensure that the profile of the PGHTM aligns with continuing developments in global health.
    - *What* they are trained in would need to consider increasingly prevalent NCDs, the risk of infectious pandemics and the effects of climate change and subsequent migration.
    - In considering *how* the future PGHTM conducts their work, important elements to consider include the emergence of digital health and increasing attention for North-South power dynamics.
    - Considering the above, and taking into account that PGHTMs' managerial skills were found to require attention, the OIGT could consider introducing differentiations into the programme, for instance in: primary healthcare, emergency responses, NCDs including mental health and the organisation/management of healthcare.

2. Invest in professionals who provide equitable, sustainable and culturally appropriate care.
    - Introduce sessions on the sociology and anthropology of health, postcolonial studies and political economy of health into the training.

- Encourage residents to reflect on the duration of their deployment.
- Introduce sessions in which PGHTMs are provided tools for critical reflexivity, humility and stimulated to reflect on their role, attitudes and cultural understanding. Ideally, these sessions are implemented throughout the duration of the training programme.

3. Attempt to transition towards a circular understanding of global health in which reciprocity is the norm. Dare to be a frontrunner and ground-breaker when it comes to positioning oneself in the global health arena as an institute that promotes bilateral learning. Be bold in taking steps towards this new vision. We suggest a stepped approach:
    - Be more explicit in explaining the PGHTM's profile and training to host institutes to enhance mutual learning and benefit.
    - Advocate for bilateral exhange, through:
        - Inviting professionals from the host institutes to provide training to the resident PGHTMs during for example the NTC.
        - Supporting South-South exchanges and learning by facilitating medical doctors from LMICs to follow the NTC and participate in a GHR in a low-resource setting outside their own country, after which they can also be considered PGHTMs.
        - Investigating how the GHR can be reciprocated by for instance inviting health professionals from the host institutes to follow 6-month traineeships in Dutch hospitals.
    - Establish reference groups in which professionals from partnering host institutes co-create the training programme for PGHTMs.
    - Advocate for the development a training programme that is eventually equally owned by academic partners in low-resource settings and allows for residents from all over the world to participate.

Figure 4 depicts the new framework we would suggest:

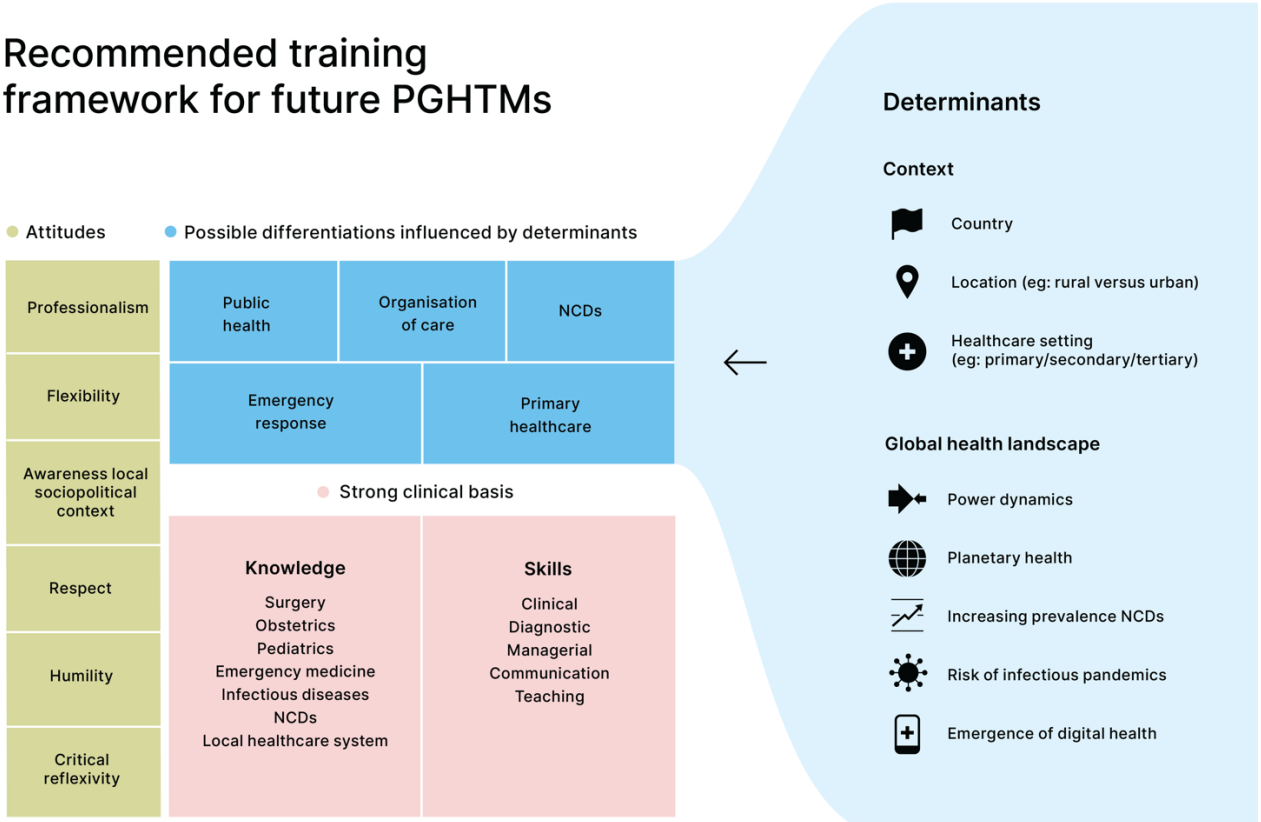


*Figure 4: Recommended training framework for future PGHTMs*

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# 13 Annex A: List of codes and corresponding exemplary citations

| Emerging theme and subcategories | Exemplary citation |
|---|---|
| GLOBAL HEALTH LANDSCAPE | |
| **Dual burden of disease** | "Initially we think OK, the global north is more of non-communicable diseases, diabetic, cancer and this global south is infectious diseases, sanitation, water delivery. But right now I think the world is moving towards the dual epidemic. The south is also coming with diabetic, coming with cancer, coming with this and so on and so forth. So we need to think through, how should the global health look like by virtue of competency?" (KII 5) |
| **Infectious disease pandemics** | "Even, even, they managing other diseases are are which are coming nowadays, the pandemics and the epidemics that are coming in." (KII 2) |
| **Climate change and migration** | "I think the the other piece which we didn't speak about and I'm not an expert on, is the humanitarian piece, which I imagine often, you know, doctors coming in from the outside do end up working with migrants, with refugees in disaster zones. And that of course this is, an increasing issue, you know. You know, not only with uh usual conflicts and but obviously with climate change. So the likelihood of there being more kind of migrant-related and disaster-related health crises." (KII 3) |
| **Digitalization** | "90% of human being are holding telephones in their hand. […] So we must find a way that our global health training take digital environment serious as part of the training." (KII 5) |
| **Community oriented primary healthcare approach** | "So what that means, I think, is that one has to be able to really think about the population at risk that you are serving, the entire population, which hopefully has been defined as opposed to just the people that walk through the door of your health facility. And often in Africa, of course, that means working with community health workers and their supervisors and their, those teams of people that are in the community and building the primary healthcare team." (KII 3) |
| ROLE AND ADDED VALUE PGHTM | |
| *Role of the PGHTM in global health landscape* | |
| **Clinical care** | "I also think that the concept of having a doctor with those skills, if if he or she actually has those skills that are required for this global health thing, is the ideal doctor for a District Hospital, in my opinion." (KII 1) |
| **Leadership** | "So, what we say is your job is to influence the people that are responsible." (KII, Key informant 3) |
| **Mentorship** | "These are very junior people and they must have more experienced people around them in order for them A, to grow, but and but, B, able to actually quite frankly not to be traumatized you know. So you know if you end up as a junior doctor in some God forsaken primary hospital with nobody else there and you know there's some obstetric kind of disaster. Everybody dies and you feel responsible. You don't get over that very quickly." (KII 3) |
| **Quality improvement** | "By the time they are leaving, how can the culture of quality outcome of delivery, safe delivery, become part of that facility on the long run?" (KII 5) |
| **Capacity building** | "So really, capacity transfer in the area of planning, organizing, monitoring and then looking at the real outcome of quality of care should be the long term goal of this kind of work." (KII 5) |
| *Roles of the PGHTM in the host institute* | |
| **Hierarchical position** | "They are like inbetween the specialists and the medical officer. So certain decisions that may require specialists, can be run throught the tropical doctor. Because they have a bit |

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| | of experience and all that and are on site all of the time. So we have a mid-level doctor between the medical officer and the specialist." (SSI, medical doctor, Ghana) |
| **Generalist vs specialist** | "But then having someone who is competent, at least preliminary competence in obstetrics, gynecology and surgery in and in tropical medicine provides immediately a better quality of requesting for aid in telemedicine because then they know what to describe." (KII 4) |
| | "Because it's not easy to build the infrastructure and the capacity and so on and so forth. So you train the generalist that will address the majority need of the populace. While the ones that require special need you create additional program of exchange between universities, so the universities can be in and out in and out with each other." (KII 5) |
| | "And and I find it gives people enough confidence to be engaged. They're not specialist on any of the topics, but they are competent enough to be able to diagnose and manage the most common cases." (KII 5) |
| | "And you know, that is part of the problem, is that people think, you know, all we need is more specialists in the central hospital and everything will be fine. Of course, it's, it's nonsense. […] I mean, the reality is that if you want to strengthen district health systems and services for the community, for the population, you're never going to do it with specialists […] A, you'll never have enough. B, the workload at this level does not support specialists […] So you need generalists who can work across the whole facility and across the whole platform." (KII 3) |
| **Clinical work** | "They do a lot of clinical work with regards to seeing patients, diagnosing patients and also with regards to the management of patients on, with different medical conditions including surgical conditions also." (SSI, clinical officer, Sierra Leone) |
| **Teaching and capacity building** | "And in the ONG department usually when our, when we get new health officers. What it is, is that we organize some form of a multidisciplinary skills training for them. So who we have the ONG team teaching them how to read CTG's and teaching them how to kind of conduct complicated deliveries and all that. So she was part of the ONG team that did a training. And then I think they had time to - she she taught them some basic ultrasound. The health officers had some basic also ultrasound training." (SSI, medical doctor, Ghana) |
| **Management** | "Sometimes when they see that certain areas are not working the way it's supposed to be working, they organized some meetings with the colleague and helping each other on how to deal with that particular problem. So I can say maybe they are involved in the management." (SSI, clinical officer, Malawi) |
| **Advocacy** | "But they were really, really very, very much involved also in, taking care of people with child abused children or gender based violence. Ok, being there for it, more alerts then." (SSI, medical doctor, Tanzania) |
| **Outbreak management** | "She was very instrumental and she she actually drew the response plan and all that. I mean we we were able to coordinate with her very well to draw the plan and then execute the plan. So I think she, she made a lot of positive inputs in our response to COVID in the hospital." (SSI, medical doctor, Ghana) |
| **Outreach** | "We have what we call community engagement and sensitization of which they go to the community. We have a team of people that they work with. They go to the community, try to sensitize people on antenatal issues, and on other areas to sensitize people for them to be able to know how to manage up their end, especially with regards to how to take care of the kids, the young, the baby." (SSI, manager, Sierra Leone) |

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| **Research** | "They are involved in research. The hospital is not sponsoring them in that. We have other partners, other local other NGOs, non governmental organization, who normally come and visit." (SSI, manager, Sierra Leone) |
| *Added value* | |
| **Human resource: absolute deficit** | "They contribute enormously to the work in the hospital, because most of the time we are very short-staffed." (SSI, medical doctor, India) |
| **Human resource: remote areas** | "We have lots of challenges and our challenges, is that the we do not have doctors coming to the remote areas of PNG." (nurse, manager, PNG) |
| **Human resource: low pay** | "What I'm thinking and what I'm seeing is doctors from abroad and are still being needed. Because the work is so huge but the doctors are less, and if they come not paid, that is volunteer and you know, to pay a doctor is very expensive." (SSI, nurse, Tanzania) |
| **Human resource: compensation brain drain** | "And of course, we lose a lot of our human resources, our graduates, our doctors to places like the Netherlands and Europe and Australia and Canada. So, I suppose in one sense it's quite nice if if there are one or two doctors flowing back in the other direction." (KII 3) |
| | "Burma is struggling to find doctors, most of the doctors leave to another country." (SSI, medical doctor, Thailand) |
| | "But also, sadly, is that the global south have become a manufacturer for the health workforce, for the global north. Sadly." And "So the issue about numbers, it is not the number that is the problem. It is those countries not having adequate resources and capacity to absorb the trained people into their own system. So we from the West, we take them and pay them a higher incentive. So we take we take 20, we create a huge gap and then we send two to them. 'Please let's help them. Let's help them with two people! They don't have people!'" (KII 5) |
| **Human resource: comfort organization** | "It is not a lack of people, but it is a lack of system because they are afraid, the company are afraid for what they can do if they think this is possible with a Malian doctor. This can be complicated. No. Let's take another company who can manage all of this stuff." (SSI, medical doctor, Mali) |
| **Expertise: clinical** | "So, the staff can do a lot, but the little bit complicated things - having that expertise from the tropical doctor is superb. A really, a real bonus to the healthcare here." (SSI, medical doctor,Thailand) |
| **Expertise: team dynamics** | "So having people with clinical training and practice that comes from multiple different backgrounds is de facto useful because they can help each other see different angles. They can have a discussion and debate, and it it diversifies and enriches clinical practice, especially in settings that are unpredictable, that you haven't trained in before. So, and they, there's like optimally, we have this community of clinicians that are helpful to each other." (KII 3) |
| **Expertise: organization of care/quality improvement** | "[Interviewer]<br>Yeah. And are you by this implying or saying that actually there is an expertise that the global north doctors have that the global South can benefit from?<br>[Participant]<br>Especially in the area of organizing and planning. Especially because it comes not only directly through training, but just being from the global North, there's a lot of culture around planning, around quality, around holding yourself accountable for an outcome of certainty." (KII 5) |
| | "…like now [name of PGHTM] has done something so good about malnutrition and things are moving on. That is the work of the government. So if there is a foreigner who can help without you paying? And you don't? I don't think there is somebody that can challenge that." (nurse, direct colleague, Tanzania) |

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| **Focusing on additional areas** | "So in several neglected parts of of of healthcare, which which are not picked up by the local doctors and. So that, yeah, so that to me is additional value. (referring to burns care)" (SSI, medical doctor, Tanzania) |
| **Capacity building: transfer of hard skills** | "In general, people come with with really good clinical skills, so they're they're important in teaching others, teaching young doctors, teaching." (SSI, medical doctor, Tanzania) |
| | "We support and invest and encourage and train and try to help the local health staff get the best that they can be, even if they've only finished school at the age of 16, which is mostly the case." (SSI, medical doctor, Thailand) |
| | "So, it's really, a real bonus to have somebody with those skills who also willing, willing to share and show and train and be patient with local staff so that they can do the skills when the doctor's not there." (SSI, medical doctor, Thailand) |
| **Capacity building: role-modelling** | "This is a capacity. How to do a curette is a clinical hands-on thing, but how to build rapport. Respectful maternity care is all about trust, honesty. No blame. Teamwork, teamwork. It's all the opposite of how you might be trained in Myanmar. So that, coming in with that background is very helpful to the work that we're trying to do. And we have a community engagement team, they go deep and to the deep, dark corners of the villages and the feedback that comes from people, from the people back to us is. So we say, why don't you go? Why don't you go there? Why don't why? Why are you ending up at the SMA clinic? And the word that keeps coming back is trust. So that means that sharing of their learning from the Western system to our Burmese and Karen colleagues, is slowly percolating through. I think it's a really important part of mother-child health." (SSI, medical doctor, Thailand) |
| | "Hard working spirit, cause they are hard worker so when we see them working hard, we also adopting that spirit of working harder." (SSI, clinical officer, Malawi) |
| **Financial support: patients** | "And they're doing a lot of charity that they don't want even people to say. When they find a patient who is this, who is not with the relatives they, they pay and they they just pay and they don't want even people to know, and they don't want even people to say. But they're doing a lot of charity." (SSI, nurse, Tanzania) |
| **Financial support: resources institute** | "…think they are always improving cause there were times when we didn't have like syringes." (SSI, medical doctor, South Africa) |
| **Pull-factor for the hospital** | "It would be very good if we have more of them because the mentality of our people, they prefer white people treating them." (SSI, management, Sierre Leone) |
| | "When there is a foreign doctors who are working at the hospital, before we take the hospital [as one of the most] prestigious hospital along [?] that it's because like- our people do say that when there are foreign doctors who are working at hospital, that's basically means the hospital will be standard." (clinical officer, Sierre Leone) |
| DURATION OF DEPLOYMENT | |
| **General** | "Two, yes, two years is really is really the minimum. Three years is better." (SSI, medical doctor, Tanzania) |
| **Necessary for understanding context** | "I think three years would be really good, but not more than three years because it's really like, we we in a remote place and I think three years would really benefit us, but also benefit them to as well. [Interviewer] Yeah. Wonderful, and when you say benefits them what do you mean by that? [Participant] I think they would know the hospital very well. The the culture and the challenges. And some of the things that they want to improve or help us to accomplish would really see it happen in their eyes before they leave." (SSI, management, PNG) |

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| **Necessary for capacity building** | "You know to teach someone skills and knowledge, it needs to be continuous and it needs to be like a mentorship. Once you mentoring someone, you have also to supervise what you have mentored so in order to supervise and what you have mentored needs time. Needs time. You can't do it within maybe three months or six months." (SSI, clinical officer, Malawi) |
| **Necessary for personal development** | "I think the for example, if you take her first year. She's she was still gaining, gaining her momentum in the practice. But after the first year of […] She was very much, for example, her knowledge was very solid, her skills." (SSI, medical doctor, Tanzania) |
| **Necessary for collaborations** | "Most tropical doctors only stay one or two years. They cannot collaborate in any meaningful way with local health authorities" (survey comment) |
| COMPETENCIES | |
| *Knowledge* | |
| **Surgery** | "So I think the medical knowledge of treating and surgeries is important" (Management, PNG) |
| **Emergency medicine** | "With their expertise we were able to build up-to-date protocols for efficient management of medical conditions. Intensifies the responses in emergencies. They improved on the timely response and management of patient." (survey answer) |
| | "The emergency knowledge [is the most important, red]. Those doctors who can have emergency knowledge because most of the patients who come to the hospital comes at the when the there is an emergency." (Nurse, Tanzania) |
| **Communicable diseases** | "The focus, the focus surgical interventions is important, but I don't think that is the major need. Again, if you see it from the public health perspective, the biggest of the problem is managing infectious diseases." (Key informant 5) |
| **Maternal health** | "Essential is knowledge of labour and management of the abnormal labour. Partogram and cervix assessment essential. Use of vacuum extractor is essential. Manual removal and perineal repair is essential. Use of oxytocin is essential to prevent PPH [post-partum hemorrhage, red] as availability of blood is limited. And mothers are often anaemia. Most doctors are too casual about preventing blood loss." (survey) |
| **Paediatrics** | "And then you should also have broad knowledge of paediatrics and managing paediatric emergency cases" (Medical doctor, India) |
| **Non-communicable diseases** | "Yes, chronic illnesses and lifestyle teaching" (survey answer) |
| | "Especially diabetes and hypertention, they have a great knowledge." (clinical officer, Malawi) |
| **Mental health** | "I saw they said that we needed maybe to bring or send us more Dutch doctors with different skills of different programs. For example, I'm saying we are only having one working paediatrics and the another one working in OBS and GYNO, but we have many other department which are lacking expertise of this Dutch people. So maybe when they are coming or when they are, when you are sending them, make sure maybe you send more for different field, a few with the same field. [Interviewer] And which fields them which you would your suggestion be? [Respondent] Ah, that's doctors majoring surgery. Surgeon general surgery, yeah. General surgeon and mental health. A lot of cases of mental health." (SSI, clinical officer, Malawi) |
| **Primary healthcare** | "Now in most countries, of course, they haven't really placed doctors at this level very much. They've tended to rely on mid-level doctors and nurses, you know, in primary care and then community health workers and well, I mean, if and as we know: they can get coverage but they can't always get quality. […] And you know, we know that if you walk out of medical school and you, you know, you don't actually have this kind of skillset that I've just described to you. You don't walk out of medical school with that. You know and, but the mindset in a lot of the countries is well, that doctors walk out of medical school, they're perfectly fine. Everything, you know, in the district. And it's complete rubbish." (KII 3) |

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| **Public health** | "Connectivity and action and a community engagement and empowerment as well as sort of integrated comprehensive primary care. You know it hand in hand with, with the sort of public health mind-set. You know that that's the whole package, isn't it? And very, very few people really have that whole mind-set or actually manage to implement it" (KII 3) |
| **Local guidelines and protocols** | "Because I previously noted like the doctors which are I'm working with always refer to the guidelines from their country. Yeah, which was a challenge, but now I have seen some they have our guidelines in their phones and yeah, they have done so, they compare, they compare, they do compare." (SSI, clinical officer, Malawi) |
| **Socio-economic-political context** | "So, how do we weigh our biomedical act visa-a-vis the social, economic, cultural and other aspects that we apply in a community, something we're not teaching people to do." (KII 4) |
| | "So for technical perspective I think it is okay. In my opinion. I think the area that we need to pay attention to is what I call the social setting, contextual drivers. […] So understanding the prevailing condition also matters. So social issues, contextual drivers of the problem, of prevailing infectious diseases." (KII 5) |
| | "I think that if we want to know why do things happen, we need to be aware of our own role and and it's very important to know, why do you do what you are doing?" (KII 1) |
| | "What I'm arguing is if we are implanting medical services in communities that aren't ours where we do not understand those dimensions, then a good question to be asked is what is it that we're trying to do." (KII 4) |
| | "All the residents had excellent theoretical knowledge and had worked in other low-resource settings before coming to our hospital but had to adapt to social/economic conditions of the patients and local treatment protocols." (survey answer) |
| *Skills* | |
| **Hands-on pragmatic** | "OK, yes, there are only a few a few things that uh, I think we find difficult in this area and with our doctors that come from the Netherlands and other other areas is- we don't have, uh enough testing equipment to really find out the type of diseases or conditions and most times we tend to use our experience on on previous patients and our experiences on how we treat the conditions and I think because I I guess, uh, they basically rely most on the of time on laboratories and X-rays and all those type of things scanning, I think we do miss some of the things, but basically we, as a team, we discuss together to, you know, get the doctor's opinion and get the nurses opinion and we try our best to come up with what's best for the patient, yeah." (SSI, manager, PNG) |
| **General** | "[Interviewer] Yeah, just to make sure I understood correctly, you're saying that the the training program as we have now, focusing on the humanitarian field, seeing the surgical obstetric, pediatric skills that we teach, that are taught to the graduates, is sufficient for the humanitarian field as MSF as it at the moment already? [Respondent] Yes, and that's already better than almost any other MSF." (KII 4) |
| **Surgery – importance** | "You expecting a doctor to not only know the tropical or to treat diseases but to expect emergency surgeries where they can save the patients life by doing the surgery because our referral pathways and all those things is very, very difficult. So we need to save the person when they come to the hospital or else they lose their life." (SSI, manager, PNG) |
| **Surgery – learn on job** | "Well, I would say that is OK. The training that they have received back home they are in, in the Netherland is sufficient for them. But when they come, they can, they can compound their knowledge and their skills by doing things because when they come they, some of them have very good knowledge like they talk the steps of the surgeries. They won't to be that confident when you tell them, go ahead and do it. So, coming to [institute] they get that confidence and hands on skills they would be sometimes they need to be guided a little bit because some doctors will come in very confident that's one |

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| | challenge and this is a big difference. For example, if I say between the Dutch doctors and the local doctors that sometimes they're overconfident because they have a lot of knowledge, the theoretical knowledge." (SSI, medical doctor, Ghana) |
| **Obstetrics – importance** | "You definitely have to be skilled in complex deliveries." (Medical doctor, Ghana) |
| **Obstetrics – learn on the job** | "The instruments, the clinicians, the nursing staff, their senior assistant, their consultants- everything is different. So although they take say two, two and a half years some of them had even after working in OG like to start with this struggle but then they get used to it quickly, but then to start with, I think, yeah, there is a struggle there." (SSI, medical doctor, India) |
| | "And in fact, they have the, they have adequate knowledge before coming. It's mainly the skills and especially the obstetric or the surgical skills which and is might not be on the same level as the local doctors, but they learn very quickly." (SSI, medical doctor, India) |
| **Paediatrics – importance** | "Resuscitation of the new-born is the most essential" (survey answer) |
| **Paediatrics – learn on the job** | "Actually, intubation is a very lifesaving skill. Many of them come here and learn here." (Medical doctor, India) |
| **Anaesthesia – importance** | "The first is of course directly seeing patients and offering care. What this person often brings, especially in the primary hospital is surgical and obstetrics skills. You didn't mention anaesthesia. Of course anaesthesia is the other part of that triangle, you can't do the one without the other." (KII3) |
| **Anaesthesia – learn on the job** | "[Interviewer] So do you think they come with a good background in anesthesia? [Participant] No, but they learn." (Medical doctor, India) |
| **Infectious diseases – learn on the job** | "Because by the time they go to a low resource setting, they still need to actually see the cases they are trained on. They need to learn how measles looks on a black skin. They need to, you know, figure out stuff. But they also need to know, how do you do medical rounds in a cramped hospital. How do you keep, you know, your stuff clean in a dusty, earth floor you know?" (KII, Key informant 4) |
| | "There is no amount of training you can do to someone here in the Netherlands to understand how to differentiate between VRCs and typhoid fever and diarrhoeal disease, it is just impossible!" (KII, Key informant 5) |
| **Clinical acumen** | "And we base a lot on clinical acumen, because sometimes the patients may not hae the funds to do certain investigations that you want to do." (Medical doctor, Ghana) |
| **Diagnostic skills** | "Yeah, they are they are doing, they're doing their best as as doctors. Though for some, they are not specialized, they're not specialized in like, for example in radiology and sonography, but they're they're best with the knowledge." (SSI, clinical officer, Sierra Leone) |
| **Teaching** | "One of the techniquest they try to use scenarios in most of the management. They use pdfs as learning tools and we someimes do simulation sessions." (Clinical officer, Sierra Leone) |
| **Feedback** | "They are good supervisors but hard when noted mistakes. Most importantly they don't keep grudges with any students or colleagues, once discussions of patients care or mistakes are collected is over." (survey answer) |
| **Language – importance** | "First of all, they have to to do break the language barrier. If they can at least learn some few uh, things on the local language, like Swahili, that will help." (KII, Key informant 2) |
| **Language** | "One thing, one thing that's good about them. They always almost try to learn our local dialect. For some now they are, they are trying their level best in speaking Creole." (SSI, clinical officer, Sierra Leone) |

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| | "They come quite well prepared. They also learn from the nurses what they need and within a month or so they're quite confident to converse or say a few words to the patients are also very happy. So especially like in the labour room where they have learned enough local language to speak without an interpreter and take the history and things like that." (SSI, medical doctor, India) |
| **Management – importance** | "So one, in my opinion, one of the biggest transitions is moving to a setting where not only are you responsible for a wider range of clinical decisions that you, than you do normally, but also of non-clinical aspects of healthcare such as triage. Uh, you know, prioritization of patients, patient flow in a health clinic, quality of context, all the things that are decided on your behalf in a, you know, in a university hospital in Amsterdam, you often have to decide yourself. And this is where I find colleagues who have been exposed to this kind of pressure, this kind of demand in their training and normal practice, are more comfortable navigating the clinical choices that are employed by it, and this is one of the really important skills that we need to add to it's, you know, and here's my next argument is we focus on clinical skills in training. And I think clinical skills obviously are extremely important, but sometimes it's to the detriment of other healthcare skills." (KII, Key informant 4) |
| **Management** | "[Interviewer] What extent do you feel that we're training adequately on management? [Respondent] Not enough. Not enough. but in, in a context like MSF, you you never go alone." (KII, Key informant 4) |
| | "They learn here, because we have some in the management team, they have seen how we struggle to get...How to run the hospital. So, they learn here they can't learn from Europe. It's a different environment." (SSI, medical doctor, Tanzania) |
| | "And and what also keeps them going is that they try as hard as possible to go through our SOPs, our standard operating procedures, like of a clinical officer of a nurse. These also, but in conclusion their, their managerial skills are good. […] [Interviewer] And what, is there anything specific about their managerial skills that you have noticed that you appreciate? [Respondent] Yeah, one, I think there have been impartial. Working here in Sierra Leone, you should be impartial. I think everybody will be happy with you. I think in a work setting partiality is a key. [Interviewer] And you mean impartial if there are problems between employees or how do you mean? [Respondent] Yeah, between employees and also with regards allocating or with regards allocating responsibilities to staff. They have been impartial, they do not have sentiment. They treat all staff as the same. Regardless of your work experience, your knowledge, they always treat staff as the same." (SSI, clinical officer, Sierra Leone) |
| *Attitudes* | |
| **Acknowledging professional limits** | "The good thing is that most of them are really, are really very willing to call the gynecologist and when he's available he will really guide them well, so." (SSI, medical doctor, Tanzania) |
| | "They're not specialist on any of the topics, but they are competent enough to be able to diagnose and manage the most common cases. And also it's not only the competence it gives them, but the understanding of where their competence and incompetence lies. So if you know exactly what is the range of stuff, and you know what you can do, then you also know what you can't do." (KII, Key informant 4) |
| **Culturally sensitive communication** | "We we I used to see them as oh these people. They are very aggressive this that and so on. But just that they were trying to understand the system. We were also trying to understand them but once we have understand each other everything is going yeah." (SSI, manager, Sierre Leone) |
| | "They are open people, we talk every time. We eat together. Everything together. So we talk a lot. So I really appreciate this side." (SSI, nurse, Mali) |
| | "So before now, if they want something, for example, if they want they not they have administer a certain type of drug that the patient should be given, if that patient is not |

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| | given that at the time they have ordered it then definitely they will go mad. But now they have understand the process we are working with them collaboratively and together." (SSI, management, Sierra Leone) |
| | "Align with it, rather than thinking he can change it on arrival because changing it on arrival create a friction for the remaining period he's trying to provide the support […] Because he needs to make sure they don't see him as a referee. That this is right or this is wrong. It is not about right or wrong. It's about knowing it and knowing how to work around it." (KII, Key informant 5) |
| | "So for me, I think it is the two things, it is about understanding the attitude of our colleagues in the global South but also understanding our cultural differences, total cultural differences. And finding a way of not allowing it to to create an early friction between us and the recipient. Because if that friction happen then the overall long term benefit will eventually be, be lost." (KII, Key informant 5) |
| | "They are open people, we talk every time. We eat together. Everything together. So we talk a lot. So I really appreciate this side." (SSI, nurse, Mali) |
| **Sensitivity local context** | "So you can't prescribe something which is very expensive while the patient is not able to to approach that one." (SSI, medical doctor, Tanzania) |
| | "You know, when people come from Europe you have that humanitarian feeling. They just want to treat people. They just want to treat everything. But yeah, you know, we have to find the resources how to run the facility…" (SSI, management, Sierra Leone) |
| | "Seeing wrongs or seeing corruption in the right way, how to how to deal with it. So if you think then announce those things without consulting Bishop or RMO or or even your doctor in charge. Then things go wrong for you." (SSI, medical doctor, Tanzania) |
| **Cultural understanding** | "When sometimes they they they because of their way of thinking, humanitarian way of thinking They gets easily frustrated for certain things." (SSI, manager, Sierra Leone) |
| **Respect – patients** | "How to do a curette is a clinical hands-on thing, but how to build rapport. Respectful maternity care is all about trust, honesty. No blame." (SSI, medical doctor, Thailand) |
| **Respect – colleagues** | "I think what is good about the Dutch doctors, they always recognize the presence of the medical doctor and they also always, almost consulting when they're making decisions like referral, uh, like after diagnosing that, which centres they need. Then also engagement, there's a critical case they need to discuss. So they engage as a team to make decision. So they almost always engage the Sierra Leonian medical doctor. They make him feel belong. That is really working with a team of doctors, not a team of Dutch." (SSI, clinical officer, Sierre Leone) |
| | "So when you come, you talk very quickly English and other things you think probably they don't understand." (SSI, medical doctor, Tanzania) |
| | "So, you found example a nurse who been working for more than 30 years in the hospital. So you think probably she is not good because probably she is not able to adapt to those electronic things and other things that's so or if you start to minimize, for, because she's not good in English." (SSI, medical doctor, Tanzania) |
| **Respect – local hierarchies** | "They can be overconfident, and then they can go ahead and do some decisions. That may be a bit um challenging for the local doctors and they feel like they are like undermined or something like that." (SSI, medical doctor, Tanzania) |
| **Respect – national rules and regulations** | "OK, yes, we need support. But we need people, they have to follow rules and we need to scrutinize whoever comes in, we need to make sure whoever comes they are coming with the goodwill and then they meet the required standards." (KII, Key informant 2) |
| **Flexibility and patience** | "When sometimes they because of their way of thinking, humanitarian way of thinking They gets easily frustrated for certain things." (SSI, manager, Sierra Leone) |
| | "Working such a place has its own challenges. It's not that easy, and resources are limited. Sometimes the wards are overflowing and the ICU is overflowing. You'll have to sort of manage two babies in a central warmer. So everyone's mindset is not to do that, |

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| | even in India what I meant to say is people who are comfortable and who were like who would like to work in urban areas with all the comforts. It is very difficult for somebody like that to come and cope in that place like this." (SSI, medical doctor, India) |
| | "I also think that most of them are able to adjust, not necessarily with just the clinical work, but in blending in the environment. So they they get on well with patients, get on well with your colleagues, get on well with the other staff as well. So that's why I was saying, I don't know if you are trained to do that, but somehow they're able to really, really adjust well, yes." (SSI, medical doctor, Ghana) |
| **Humility** | "So I think that I don't know whether they are trained to do that by someone when they come, they are able to, to exhibit such attributes like they're quite, they're humble, they are willing to learn and all that" (SSI, medical doctor, Thailand) |
| | "I don't know what they teach to them, but they think they know more than the people who are here." (SSI, medical doctor, Mali) |
| | "But you know, you come there, then to any given situation after a few weeks you think you know better than the hospital director, after more you think you should, you could be better than the Minister of Health and then even the President you know you could do that better. Because you see all the things that don't work." (KII, Key informant 1) |
| | "You need to be aware and in order to become aware you need to question your own position, everything. Everything, everything that I think. One word we should abolish is the word 'normal'." (KII, Key informant 1) |
| REFLECTIONS TRAINING PROGRAMME AND SUGGESTIONS FOR IMPROVEMENT | |
| **Positive – broad skillset** | "So for the strength of your training program, I think one um, you your training program is fashioned such that the doctors can work well in the tropical environment. So what I mean is that they might not be super specialist, but at least they can handle most of the problems that present to them at the hospital so they can run very well at the. So I think that the competency level of the doctors are adequate for working in the tropics."(SSI, medical doctor, Ghana) |
| | "So general opinion is I think it is quite a unique program. I don't know if anywhere else that provides a program like this that is tailored towards wider skills and this is an absolute necessity now because we are struggling more and more in finding people who are." (KII, Key informant 4) |
| **Positive - GHR** | "The training from skill perspective and competency there is no problem. The persons can can be very skillful and so on and so forth. But usually when you are trained from this environment and you go into the low income setting to practice, then you go into what I call practice-shock because they, the, the, the infrastructure, the equipment, the support environment for you to apply the skill is totally missing." (KII, Key informant 5) |
| **Improvements – PHC and NCDs** | "But but I do also pick up maybe a little bit of an overemphasis, which is a historical now, on infectious diseases as opposed to the rest of the burden of disease." (Key informant 3) |
| **Improvements – socio-political context** | "So for technical perspective I think it is okay. In my opinion. I think the area that we need to pay attention to is what I call the social setting, contextual drivers." (KII, Key informant 5) |
| **Improvements – management** | "They should learn the basics of strategic planning, finance, law and human resource management. Also, training and running efficient nursing services in hospitals." (survey answer) |
| **Improvements – cultural competence** | "I would avoid trying to give them, you know, those seminars about cultural sensitivity. Cultural sensitivity without cultural acceptance and understanding and openness, is performance." (KII, Key informant 4) |
| **Improvements – critical reflexivity** | "What is missing is, how do you navigate the politics of health, the governance of health, your moral position as an outsider?" (KII, Key informant 4) |

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| **Decolonisation** | "So what is still entirely missing is a vision of global health or of health solidarity or of an emancipatory power of healthcare. And and it's interaction with climate justice, with social justice, with, you know, anti-capitalist." (KII, Key informant 4) |
| | "In an institution that actually wants to decolonize needs to see its power of choice actively, needs to become a political agent towards a, not towards a decolonized medical training, but towards a decolonized relation." (KII, Key informant 4) |
| OTHER EMERGING THEMES | |
| **Mutual benefit** | "So in that way there is a mutual like, they benefit each other from, they benefit from each other in that aspect. So, the the local doctors will have some knowledge yes and very little experience while the Dutch doctors will have enough knowledge and yeah a bit more experience and then if you combine the two then they have they have that good, good outcome in terms of patient care and all that." (SSI, medical doctor, Tanzania) |
| | "So the doctors can come in and, while they are helping the patient, they are also learning and they are also improving their knowledge and confidence and skills." (SSI, medical doctor, Tanzania) |
| | "It doesn't make us feel less worthy because when they come they learn from us and don't just start to do things." (SSI, nurse, Tanzania) |

# 14 Annex B: Survey questions

*Confidential*



## Learning Needs Assessment for Dutch Physicians of Global Health and Tropical Medicine

Introduction

The 2.5-year Dutch residency program in Global Health and Tropical Medicine trains qualified doctors to work at the crossroads of clinical care and public health in the global health arena, including low-resource settings.

In order to evaluate the current training program and prepare for its next phase, the advisory body of the Training Institute of Global Health and Tropical Medicine (OIGT) commissioned a study to determine to what extent the knowledge, skills and attitudes taught are adequate and relevant for the hosting institutes where Dutch Physicians of Global Health and Tropical Medicine (PGHTMs) work. This survey will contribute to answering this question. Your opinion is thus very valuable for the future development and improvement of the training program!

Please note that your answers will remain anonymous unless you state otherwise. If you would be available for an in-depth interview, please indicate this at the end of the survey and we will get in touch with you. Your responses are confidential and will only be seen by the research team members. You participation is voluntary, and you may decide to stop this survey at any time. Your answers, or a decision to stop filling out the survey will not affect your existing or future collaborations with Dutch PGHTMs.

Please only fill out this survey if you have worked with Dutch PGHTMs between 2017 and now.

This survey will not take longer than 10 minutes to fill in. If need be, you can pause the survey and return to it at a later time. Thank you in advance!

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Thank you so much for taking the time to fill in this survey! Your input is very valuable in ensuring the training programme for Dutch Physicians of Global Health and Tropical Medicine (PGHTMs) meets the needs in your setting.

This survey consists of 3 components:

1. General information
2. Knowledge/skills/attitudes of the PGHTM in different fields (11 questions)
3. Any additional comments

### General Information

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| Have you worked with Dutch Physicians Global Health and Tropical Medicine (PGHTMs)? | ◯ Yes<br>◯ No |
| In which year(s) did you work with Dutch Physicians Global Health and Tropical Medicine (PGHTMs)? | ☐ Before 2017 ☐ 2017<br>☐ 2018 ☐ 2019 ☐ 2020<br>☐ 2021 ☐ 2022 |
| How many PGHTMs have you worked with? | _____ |
| How long (in months) did you work with PGHTMs in total? | ◯ < 3 months ◯ 3-6 months<br>◯ 6-12 months ◯ >12 months |
| In what capacity did you work with the PGHTM? | ◯ direct colleague in clinical care<br>◯ supervisor ◯ supervised by PGHTM as student, or staff ◯ other |
| Please specify "other": | _____ |
| What is your age? | _____ |

# 15 Annex C: Interview guide interview participants host institutes

## Topic list semi-structured interviews

### Introduction

My name is Jamilah Sherally and I am conducting research on the **competencies required for Dutch physicians of Global Health and Tropical Medicine (PGHTM)**.

The 2.5-year Dutch residency program in Global Health and Tropical Medicine trains qualified doctors to work at the crossroads of clinical care and public health in the global health arena, including low-resource settings. In order to evaluate the current training program and prepare for its next phase, the advisory body of the Training Institute of Global Health and Tropical Medicine (OIGT) commissioned a study to determine to what extent **the knowledge, skills and attitudes taught are adequate and relevant for the hosting institutes** where Dutch Physicians of Global Health and Tropical Medicine (PGHTMs) work.

This interview builds on the answers which you provided in the survey and allows us to gain an in-depth understanding of your experience working with Dutch physician(s) of Global Health and Tropical Medicine (PGHTM) who have **completed their training programme**. Please note, that the questions thus do **not refer to the residents who are still in training** – as might be the case in your institute.

Your opinion is very valuable for the future development and improvement of the training programme.

Please note that your responses are **confidential** and will only be seen by the research team members. Your participation is **voluntary**, and you may decide to **stop** the interview at any time. Your answers, or a decision to terminate the interview will not be shared and will **not affect your existing or future collaborations** with the Dutch Training Institute and/or Dutch PGHTMs. Research results will be published **anonymously**. The recording of this interview will be stored in a secured research folder at the university of Utrecht for 15 years. The interview will take approximately **one hour**. The findings of this research will be communicated to you in the form of a report.

### General information respondent and host institution

*(can be a short checklist depending on whether the respondent has filled in the survey before or not)*

- Age
- Gender
- Nationality
- Organisation/hospital/clinic and location
- Function within the organization
- Duration of employment
- Interaction with PGHTMs: residents? Number? When? For how long?
- Short description of the setting: healthcare level, type of institute (public, private, mission), long-term collaboration with a Dutch organization/hospital, target population, patient load, composition team, position of the MD GHTM within the team, local contract/international contract/volunteer, medical activities, focus areas?

### Role of the PGHTM

- Can you provide a description of the tasks and responsibilities of the PGHTM at your institution?
- Which activities relate to patient care?
- Which activities relate to public health?
- Which activities relate to medical advocacy?

- Which activities relate to management and leadership?
- Which activities relate to medical education or capacity building?
- Which activities relate to scientific research?
- Which activities relate to collaboration and communication?
- Are there any activities missing/Are there other important focus areas that the PGHTM is involved in (medical and non-medical)?
- To what extent are the above activities, tasks and responsibilities what is required at your institute?

### Competencies PGHTMs

- Would you be able to describe the most important **knowledge** necessary for physicians to work in your institution?
    - To what extent do Dutch PGHTM possess this knowledge? Please elaborate?
    - What is your opinion on the extent to which PGHTMs possess the necessary knowledge on the local needs and local capacity to effectively work in your institute?
    - What is your opinion on the extent to which PGHTMs are able to apply knowledge of the local context/healthcare system/local treatment protocols?
    - What is your opinion on the extent to which PGHTMs possess the necessary knowledge on the management of (N)CDs?
    - Is there certain knowledge that the PGHTMs possess that is not relevant/necessary and why?

- Would you be able to describe the most important **skills** necessary for physicians to work in your institution?
    - To what extent do Dutch PGHTMs sufficiently possess these skills? Please elaborate?
    - What is your opinion on the extent to which PGHTMs possess the necessary language and communication skills?
    - What is your opinion on the extent to which PGHTMs possess the necessary competencies for capacity building/teaching?
    - What is your opinion on the extent to which PGHTMs possess the necessary managerial skills?
    - What is your opinion on the extent to which PGHTMs possess the necessary diagnostic skills? For instance ultrasound?
    - Are there any skills that the PGHTMs possess that are not relevant/necessary and why?

- Would you be able to describe the most important **attitudes** necessary for physicians to work in your institution?
    - To what extent do Dutch PGHTMs possess these attitudes?
    - What is your opinion on the extent to which the PGHTMs are culturally sensitive?
    - What is your opinion on the extent to which PGHTMs are able to acknowledge the proper limits of their practice/critically reflect on their role?
    - What is your opinion on the extent to which PGHTMs deploy professional communication?
    - What is your opinion on the extent to which PGHTMs deploy professional collaboration with colleagues?
    - Are there any attitudes that the PGHTMs possess that are not relevant/necessary and why?

### General

- What would you say characterizes the Dutch PGHTM?
    - Positive aspects?
    - What is their added value ?
    - Do you have examples of how the PGHTM improved healthcare in your setting?
    - What could the PGHTMs improve on?

- How do you feel PGHTMs are positioned in a changing world of digital health, climate change and migration for instance?
- What is the minimum duration of stay to make the PGHTM deployment useful?

### Reflection on training program

- What is your opinion of the training PGHTMs receive?
- What are strengths of the program?
- What do you feel needs attention in the program? What needs further development or improvement in the training program?
- How do you think bilateral exchange could be improved?

### Closing

- Do you have any additional comments?

# 16 Annex D: Interview guide key informants

## Topic list key informant interviews

### Introduction

My name is Jamilah Sherally and I am conducting research on the **competencies required for Dutch physicians of Global Health and Tropical Medicine (PGHTM)**.

The 2.5-year Dutch residency program in Global Health and Tropical Medicine trains qualified doctors to work at the crossroads of clinical care and public health in the global health arena, including low-resource settings. In order to evaluate the current training program and prepare for its next phase, the advisory body of the Training Institute of Global Health and Tropical Medicine (OIGT) commissioned a study to determine to what extent **the knowledge, skills and attitudes taught are adequate and relevant for the hosting institutes** where Dutch Physicians of Global Health and Tropical Medicine (PGHTMs) work.

Your opinion is very valuable for the future development and improvement of the training programme.

Please note that your responses are **confidential** and will only be seen by the research team members. Your participation is **voluntary**, and you may decide to **stop** the interview at any time. Your answers, or a decision to terminate the interview will not be shared and will **not affect your existing or future collaborations** with the Dutch Training Institute and/or Dutch PGHTMs. Research results will be published **anonymously**. The recording of this interview will be stored in a secured research folder at the university of Utrecht for 15 years. The interview will take approximately **one hour**. The findings of this research will be communicated to you in the form of a report.

### General information respondent

- Age
- Nationality
- Profession
- Organization/institute/hospital/clinic and location and function within the institute
- Current and/or past interaction with PGHTMs: Number? When? For how long?

### Role of the PGHTM in the global health arena

- How would you describe the current global health arena? Do you feel the landscape has changed over the years and if so, how? In your opinion, what are the most pressing global health challenges and opportunities currently? What are your expectations for the future? Do you feel that the current PGHTMs are sufficiently equipped in the above?
- What is the role/need for Dutch PGHTMs in the above described arena? Can you provide some examples?
    - For example, what do you think is the PGHTMs role in:
        - Delivery of clinical care?
        - Strengthening of health systems?
        - Addressing a human resource gap?
        - Providing education?
    - To what extent, do you feel the training programme adequately trains Dutch doctors to fulfil these above role(s)?
- Has this role, in your experience, changed over time?
    - If so, do you feel the training programme has adequately adapted to the changing role/needs?
    - How do you feel PGHTMs are positioned in a changing world of digital health, climate change and migration for instance?

### Reflection on training program

- What is your opinion of the training PGHTMs receive?
- What are strengths of the program?
- What do you feel needs attention in the program? What needs further development or improvement in the training program?
- How do you think the training institute can invest in bilateral exchange?

### Experiences with/characteristics of the PGHTM

- What would you say characterizes the Dutch PGHTM?
    - Positive aspects?
    - Aspects that would benefit from improvement?
- Do you feel they have an added value and if so what and for whom?
- To what extent do you feel Dutch PGHTMs are change-makers/have contributed to improving healthcare and do you have examples?

### Competencies of the PGHTM

- Do you feel that the 7 CANMEDs competency framework is suitable for training of the Dutch PGHTM? Why, or why not? Is something missing? To what extent do you think the 7 competencies weigh equally in the role of PGHTM?
- To what extent do you feel Dutch PGHTM are equipped in:
    - Patient care?
    - Public health?
    - Medical advocacy?
    - Management and leadership?
    - Medical education/capacity building?
    - Management and leadership?
    - Scientific research?
    - Collaboration and communication?
- Would you be able to describe the most important **knowledge** necessary for physicians to work in the global health arena?
    - To what extent do Dutch PGHTM possess this knowledge? Please elaborate?
    - What is your opinion on the extent to which PGHTMs possess the necessary knowledge on the local needs and local capacity to effectively work in your institute?
    - What is your opinion on the extent to which PGHTMs are able to apply knowledge of the local context/healthcare system/local treatment protocols?
    - What is your opinion on the extent to which PGHTMs possess the necessary knowledge on the management of (N)CDs?
    - Is there certain knowledge that the PGHTMs possess that is not relevant/necessary and why?
- Would you be able to describe the most important **skills** necessary physicians to work in the global health arena?
    - To what extent do Dutch PGHTMs sufficiently possess these skills? Please elaborate?
    - What is your opinion on the extent to which PGHTMs possess the necessary language and communication skills?
    - What is your opinion on the extent to which PGHTMs possess the necessary competencies for capacity building/teaching?
    - What is your opinion on the extent to which PGHTMs possess the necessary managerial skills?
    - What is your opinion on the extent to which PGHTMs possess the necessary diagnostic skills?
    - Are there any skills that the PGHTMs possess that are not relevant/necessary and why?
- Would you be able to describe the most important **attitudes** necessary physicians to work in the global health arena?

- To what extent do Dutch PGHTMs possess these attitudes?
- What is your opinion on the extent to which the PGHTMs are culturally sensitive?
- What is your opinion on the extent to which PGHTMs are able to acknowledge the proper limits of their practice/critically reflect on their role?
- What is your opinion on the extent to which PGHTMs invest in their own personal wellbeing/deploy healthy coping strategies?
- What is your opinion on the extent to which PGHTMs deploy professional communication?
- What is your opinion on the extent to which PGHTMs deploy professional collaboration with colleagues?
- Are there any attitudes that the PGHTMs possess that are not relevant/necessary and why?

**Reflection on preliminary findings from the IDI's:**

- What is your view on the below preliminary findings that arose during the in-depth interviews with different colleagues of the PGHTMs in the hosting countries?
  - PGHTMs fulfil an important role in staff shortages/staff unwilling to work in remote areas;
  - PGHTMs fulfil an important role in capacity building/teaching;
  - PGHTMs often function at a level between a junior doctor and specialist;
  - Many of PGHTMs' skills are actually developed on the job (eg: surgical confidence, knowledge of the local guidelines, understanding of the local cultural practices etc.);
  - Whether the hosting institute would benefit from a PGHTM with more specialist knowledge or – on the other hand – a more general training, depends on the setting;
  - PGHTMs are commended for their kindness, compassion to patients, dedication, work ethos, and ability to adapt and work in low-resource settings.
  - PGHTMs sometimes communicate in a manner that is foreign to local colleagues which can result in conflict and friction, such as 'making a scene' and verbalizing their frustration in direct ways (also sometimes referred to as shouting);
  - PGHTMs would benefit from a more humble attitude.
- What would you say is the minimum duration of stay to make the PGHTM deployment useful and why?

**Closing**

- Do you have any additional comments?
- Would you be open to joining a feedback session on the findings of this research?