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Embedding social accountability in the medical school and its curricula: Patan Academy of Health Sciences, Nepal

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Abstract

Introduction: Patan Academy of Health Sciences (PAHS) was established in 2008 with a social accountability mandate and the mission to produce competent and committed health professionals to serve the rural and underserved population. Enrolment of undergraduate medical students started from 2010. This article describes the context and process for the establishment of the Academy, the approaches taken and some of the early outputs

Method: The information was collected from the policy documents, PAHS website, meeting minutes / discussions, feedbacks and medial school records. All the information was compiled and presented under different headings/subheadings in a phase wise manner.

Result: PAHS has been actively engaged in a multitude of partnerships from local to global and has chosen the best and most applicable innovations from around the world. The integrated suite of innovations the Academy has developed includes its admission policy, teaching-learning methodologies, community-based learning, scholarship-schemes and service bonds. The PAHS School of Medicine has successfully enrolled undergraduate medical students from all over the country, representing ethnic diversity, remote/rural background, underprivileged communities and gender balance. More than 50% graduates from the first five-batches are successfully deployed into primary level peripheral health facilities of the government health system.

Conclusion: The initial reports and observations confirm that the integrated measures taken by the Academy have been effective in enrolling the right students, educating them in an effective way and deploying them to address the country's need. A longer follow-up on rural retention and performance evaluation is needed to conclusively establish the outcome of the school.

Keywords: Admission policy, medical school, Nepal, social accountability, undergraduate medical curriculum

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Introduction

In Nepal, huge disparities in the health indicators persist between rural and urban, different geographical regions, and wealth quintiles.[1] Such glaring gaps and inequities in health within countries are also highlighted in the 2010 Lancet Commission report.[2] The country has only 0.17 doctors per 1,000 population.[3] Only 0.2% of government health facilities in the mountainous region meet a minimum standard of quality of care at the point of delivery.[4] There are 21 medical schools in the country producing over 2000 doctors yearly and an additional 400-500 get trained abroad.[5] Yet, the primary level government hospitals and health centers are facing a shortage of competent and committed health workers. Only 56% of the positions for medical officers at government health facilities are filled.[4] Around 60% of doctors are working in the private sector; among those working in the public sector, 76% are in central hospitals.[6] Furthermore, Nepal is not spared from the global trend of outmigration of physicians.[7]

Most medical schools today are producing technocrats with modern scientific knowledge without appropriately addressing societal needs and human expectations, somehow sweeping aside the humanistic dimension, social perspective, caring, and social accountability of the profession.[8,9,10]

A new approach to medical education with a focus on rural, low-resource medicine was perceived as a necessity. The Patan Academy of Health Sciences (PAHS) came into being to fill this perceived need. This article describes the context in which PAHS was established, the process and innovative approaches it took to accomplish its goal, and some of the early outputs.

Method

The information was collected from the policy documents, PAHS website, various meeting minutes, faculty discussions, medical school records, and feedback from the stakeholders at the graduate placement sites. All the information collected since the inception phase of PAHS beginning with the formation of the Medical school steering committee in Nov 2003 to date, was then compiled and presented under different headings/subheadings in a phase-wise manner as described here. The student enrolment data has been analyzed only up to 2019 as from 2020 onwards Medical Education Commission implemented a common National Medical entrance examination in Nepal employing an examination system/model different from the one designed and conducted by PAHS.

Process of Establishing the Medical School

Inception phase

In search of possible solutions to the existing disparity in the country's health services, a group of doctors at Patan Hospital (one of the central hospitals in Nepal) proposed the creation of a medical school with a different mission. A medical school steering committee was formed in November 2003 and a feasibility study for a medical school, producing socially responsible health professionals, was completed in 2005.[11] National and International Advisory Boards were formed. Extensive discussions were held with national stakeholders, alongside active interactions with the local communities and political leaders at different levels.

In 2008 the Patan Academy of Health Sciences (PAHS), with Patan Hospital as its Teaching Hospital, was established by an Act of the Legislative Parliament. It was established with the following mission statement:

'PAHS is dedicated to sustained improvement of the Health of the people in Nepal, especially those who are poor and living in the rural areas, through innovation, equity, excellence, and love in education, service, and research'

Planning Phase

The newly established Academy actively engaged in a series of partnerships from local

to global modeled on the "pentagram partnership" originally espoused by the world health organization (WHO).[12] It chose the best and most applicable innovations from around the world to construct a "made in and made for Nepal" model. After a series of consultative meetings and workshops with national and international experts, stakeholders, and the community, the following activities were carried out:

- Graduate attributes were drafted based on the community expectation of a doctor.
- Student selection criteria founded on the principle of social inclusiveness were made and a Social inclusion matrix (SIM) was designed
- Different scholarship schemes and eligibility criteria were created
- Service bond system for scholarship candidates to work in remote/rural government health facilities, after graduation was designed
- Entrance examination including personal quality assessment and mental agility test was planned
- The undergraduate curriculum was developed with an emphasis on community-based learning, sessions on ethics and communication skills, and early exposure to patient contact.
- Small group teaching with principles of adult learning was chosen as the major teaching/learning modality.
- A student assessment system with an emphasis on continuous assessment, feedback, and process evaluation was planned.
- The class size of 60 -65 was agreed upon.

Implementation Phase

Following social accountability principles, PAHS faculty set out to orient its education, research, and service activities to address the priority health concerns of the communities they serve. The Academy has taken several innovative approaches based on social accountability principles. This integrated suite of innovations was intended to admit the right students, train them to be competent and committed doctors with social values, and deploy them to address the above-noted disparities. Thus, the PAHS School of Medicine (SOM) was decidedly different than other medical schools in the country and the region. Some of the elements are detailed here.

Admission Policy

The entrance exam for student selection**:** In addition to scientific knowledge and intellectual ability, the exam process was also designed to test personal qualities and non-cognitive skills like communication, moral orientation, and empathy which are some of the key skills for medical professionals.[13,14] and these are in line with the mission and goals of PAHS.[15]

Social inclusion matrix (SIM): The SIM was designed to enroll eligible students from remote, rural areas, disadvantaged communities, and underprivileged or minority social groups. Preferential marks are given in the entrance exam for such candidates under the scholarship scheme who achieve the minimum pass mark.

Scholarship and agreements to serve**:** Scholarship schemes include full scholarship (15%), collaborative and partial scholarships (25-40 %). All scholarship students have an obligation to serve in the government-assigned peripheral/rural health facility for a defined period of time (2-4 years).[16]

Curriculum

Community health sciences: This comprises 25% of the curriculum. Community-based learning and education (CBLE) is its main component where students get exposed to the community and the national health system from grass roots level upwards through residential community postings and placement at different levels of health care facilities. Engaging with the community at different levels from the common person to local leadership, involving and empowering the community people in student selection (in entrance examination) and performance evaluation (during community placement), PAHS was able to develop a motivated community. This resulted in a powerful

learning experience for the students while the community felt proud to be part of the program.[17]

Introduction to clinical medicine (ICM) course: The ICM course beginning from the first month in medical school provides exposure to clinical medicine and allows students to interact with patients and families which helps them understand patients' perspectives and expectations very early in the course. This can also foster communication skills, compassion, and empathy.[18,19]

Ethics teaching: Regular sessions on Ethics are conducted as lectures and faculty facilitated interactive sessions. These sessions are intended to help students understand the role of Ethics in medicine; improve critical thinking and clinical ethical competency.[20]

Working as a Nurse**:** At the beginning of clinical clerkship in year III, students work as a nurse, for a week performing all the duties of a nurse and providing nursing care under the supervision of nurses. The main aim is to develop and strengthen inter-professional relationships, knowledge sharing, and collaboration which underscores the importance of teamwork.[21,22] The nurses were happy to contribute and felt involved in medical education.[23]

Longitudinal Patient follow-up: During the basic science years, the students are assigned three groups of patients (chronic illness, terminally ill, and differently-abled children) to follow at home or in the hospice over a period of six months and write a reflective portfolio on completion. The objectives of this task are to establish the students' understanding of the multidimensional picture of health and diseases, introduce them to reflective learning[24,25], and provide an environment to practice empathy, which can be further enhanced through interaction with the assigned faculty mentor.[26,27,28]

Six-month rural hospital placement: This placement in the final year of the undergraduate medical curriculum provides an intense opportunity for learning in the context. Four District Hospitals in rural areas were chosen as teaching sites. The General Practitioners working there were inducted as Preceptors. The Society of Rural Physicians of Canada has supported local preceptors in teaching/learning activities.[29] while the weekly web-based visual classroom conducted by the Academy maintained a regular link with these distributive teaching sites.[30]

Teaching/learning methods

Moving away from the traditional lecture-based program, the school was able to establish problem based learning (PBL) in basic science years and Clinical Presentation **(**CP) curriculum in clinical years as the major teaching/learning methodologies. This was intended to make students responsible for their own learning, and develop problem-solving skills, scientific approach, critical thinking, team spirit, and skills for lifelong learning.[31,32,33,34]

Evaluation System

The student evaluation system is designed for continuous evaluation through web-based self-assessment questions.35, regular formative assessments, frequent feedback, and a mentoring system. In addition to the content (knowledge, skill) evaluation, students are also evaluated for their non-cognitive skills (behavior, attitude, professionalism) by the faculties and also by the community mentors/ supervisors, peers, nurses, and non-faculty staff.[17,23]

Result

Many of the innovative approaches PAHS has considered to achieve its goals were novel not only in Nepal but also in South East Asia. Their integration into a coherent enterprise created PAHS as a complex adaptive learning system, important in a pioneering program. Their implementation required continuous faculty development, persistence, and motivation from the leadership and the institutional willingness to learn and improve. The

implementation of innovative approaches and the early outcomes of graduate enrollment and deployment described below are some of the preliminary achievements of PAHS SOM and its socially accountable medical curricula.

Student enrolment

Between 2010-2019, nine batches are enrolled with a total of 543 students (from 70 out of 77 districts), 268(49%) under scholarship schemes with a service bond, and 54(10%) from 'backward region' (the nine most remote districts of the mid-western region as defined by the government of Nepal). Of the total students, 219(40%) are female, 92(17%) from ethnic minorities, and 14(3%) from very underprivileged/outcast social groups.

Performance in the national licensing examination

The pass percentage of our first 5 batch graduates in the national medical licensing examination by Nepal medical council is 95%, in the first attempt, compared to the national average of <70% in the given years.[36] This is an affirmation that our admission policy which also includes assessment of non-cognitive skills, and application of social inclusion matrix, has no negative impact on selecting the right students with good academic ability.

Graduate deployment

Of the first five graduating batches, 55% of the graduates have been deployed by the ministry to rural/peripheral health facilities in different parts of the country. Thirty-one out of 54(57%) in the first batch, 33 out of 63(54%) in the second, 25 out of 47(53 %) in the third 33 out of 56(58%) in the fourth batch, and 35 out of 61(57%) in the fifth batch are deployed through this process and have been working under national health system.

Feedback from the graduates on curricular structure

During formal and informal sessions/meetings, the graduates have attributed their confidence to work in rural and resource-constrained health facilities to the teaching and training at PAHS.

Performance evaluation:

Of the Students: During the 2015 devastating earthquake that struck Nepal, all the teaching/learning activities were put on pause but the students stayed back and worked in first-line health care at the main teaching hospital.[37] The final year students, who were posted in the district hospitals at that time, chose to stay there to help care for the earthquake victims.[38] These spontaneous choices made by the students were an affirmation that the social accountability principles are woven into the curriculum and the culture of the faculty was being modeled by PAHS students.

Of the Graduates: General feedback from the local stakeholders and community about PAHS graduates' performance has been positive. The graduates' professionalism, communication skills, and community orientation have been appreciated. The role of first and second batch PAHS graduates, deployed to the districts where the government was introducing health insurance pilot projects, was highly valued as the launching of this project had posed a challenge. The work of some of our graduates posted in different parts of the country during the current COVID-19 pandemic response has been highly appreciated by the local authorities.

Discussion

A social accountability mandate requires a medical school to orient its education, research, and service activities to address the priority health concerns of the communities it serves. One reflection of this is to determine where its students are after graduation. PAHS' initial results show more than 50% of the first four batches of graduates have served/are serving in rural health facilities or primary level hospitals in the government health system. These graduates were enrolled under different scholarship schemes based on

inclusiveness and are committed to serving for a minimum of 2-4 years. PAHS has made focused efforts to produce competent and committed doctors with social values, who will be working in disadvantaged, rural, and remote areas of the country as per the institutional goal.[17,39,40,41] One of the systemic failures of health systems worldwide has been identified as the health professionals' unwillingness to serve marginalized and rural communities.[42,43,44] Ethical commitment, service orientation and social accountability on the part of the health workers are all essential to overcome this and develop a properly functioning health system.[2]

The PAHS has been successful in enrolling eligible candidates from remote/ rural parts of the country and from deprived/underprivileged communities to facilitate later deployment of the graduates to these areas and communities and make them optimally effective.[45,46,47] The likelihood of medical students going back to the rural areas after graduation has been linked to admissions policies, student recruitment from a rural background, rural-oriented medical curriculum, and rural learning experiences.[44,45,48] This is in keeping with the 'Conceptualization, Production and Usability' (CPU) model.[49] The service bonds of the scholarship candidates help ensure such deployment.[44]

We have proactively enrolled students maintaining diversity (geographical, ethnic, rural/urban, socioeconomic status) and a reasonable gender balance. It has been observed that the majority of students in medical schools across the world are from urban areas, dominant ethnic groups, and of higher socioeconomic status [45], while gender composition in admissions has an impact on health system performance.[2] By widening the enrolment, PAHS has a student cohort that brings diversity into the medical school in terms of academic as well as personal qualities.[14] It is equally important that the medical students are representative of the population they ultimately will serve.[50] Our student selection criteria and policies reflect our institutional vision towards equity while the faculty values and commitment towards this vision play a pivotal role in this process.[45]

Some of the strategies PAHS has adopted, focusing on graduate attributes and community expectations, are in alignment with the global policy recommendations of the World Health Organization.[41,45,51] Embedding social accountability in medical curricula through multiple community postings of PAHS medical students, ensuring experiences that include community members as hosts and as mentors & teachers, exposing students to different levels of health care, and involving them in providing clinical services at the primary level health facilities during their later years of training are some strategies supported by the observation on 'shift to community and small hospital clinical placements, community partnerships and students providing service while learning.'[45]

In order to emphasize and foster the behavioral and social skills expected by the community, community members are also involved in the evaluation of the non-cognitive skills of PAHS students during their community placement. This is a unique feature of PAHS and is a component of community involvement in teaching/learning and in building authentic community partnerships.[41,17] This helps to fulfill PAHS fidelity with the "Usability" segment of the CPU model- something that relatively few schools anywhere undertake.[49]

The PAHS is a member of the Training for Health Equity Network (THEnet) whose members are committed to the social accountability mandate. The member schools share a core mission to recruit students from and produce health professionals for underserved communities.[52] While the Global Consensus on Social Accountability for Medical Schools has delineated the key attributes of a socially accountable school[53], there is a lack of clarity on how the concept can be taught and evaluated.[54] There is no doubt that this concept should be built into the medical curricula and this could be one of

the criteria for evaluating a medical school. The need for a formal framework to evaluate the medical schools for social accountability, make comparisons and measure the progress, cannot be overemphasized.[55,56] THE net has done extensive work developing a social accountability evaluation framework.

The built-in strategies of PAHS have shown to be effective in producing socially accountable doctors with technical competence, service orientation, and ethical commitment as pictured by the Lancet commission report. However, these are only the initial reports and observations. A longer follow-up and a more formal and objective evaluation of performance and rural retention of the graduates are needed to conclusively establish the outcomes of PAHS as a socially accountable medical school.

Conclusion

The Patan Academy of Health Sciences (PAHS) is leading the way as a socially accountable medical school in Nepal and the outside world. It has admitted an inclusive and diversified student cohort with a reasonable gender balance. The academy has successfully deployed more than 50% of the graduates into peripheral health facilities and primary level hospitals of the government health system. Initial feedback from the graduates strongly supports the effectiveness of our curricular structure and methodology. The effectiveness is reflected by the acceptance and appreciation from the local communities and the government health system for our graduates for their community orientation and professionalism. A longer follow-up on rural retention of the graduates and their performance evaluation is needed to conclusively establish the outcome of the school.

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Conflict of Interest

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Author Contribution

Concept, design, planning: SS, RNG; Literature review: SS, RNG, JNS, KPB; Data collection: SS Data analysis: SS; Draft manuscript: SS Revision of draft: SS, RNG, JNS, KPB; Final manuscript: SS, RNG, JNS, PKA, KPB, BKY; Accountability of the work: SS, RNG, JNS, BKY, PKA, KPB; Guarantor: SS.

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