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Interview with Professor Dr. Arjun Karki

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Professor Dr. Arjun Karki, the founding Vice-Chancellor of the Patan Academy of Health Sciences (PAHS), is a distinguished Nepali physician, academic, and institutional leader. He is widely recognized for his contributions to Pulmonary and Critical Care Medicine, as well as for his transformative role in advancing higher education reform in Nepal. Dr. Karki spearheaded initiatives to embed innovative, student-centered, and socially responsive approaches into medical education, notably introducing mandatory rural health postings to foster community engagement and equity in healthcare delivery. His leadership has been instrumental in institution-building and in nurturing a robust education & research ecosystem within the country. Currently serving as the Vice-Chancellor of the University of Nepal, Dr. Karki continues to exemplify his enduring commitment to educational reform and institutional excellence. The Journal of Patan Academy of Health Sciences extends its sincere gratitude to Dr. Karki for his generous and thoughtful engagement in responding to the written questions prepared for this interview.

Q.1 Could you tell us about your educational background and what inspired you to pursue a career in medicine?

Answer: I come from a village in Sindhupalchowk district, about 100 KM Northeast of Kathmandu. Since there were no good schools in the area, my parents had sent me to the capital city for my education and I was admitted to Tri Padma Vidyashram High School – a public school in Lalitpur. When I was in the 8th grade, I fell seriously ill and was hospitalized at Lalitpur District Hospital, which is where the Mental Hospital is now located. That was the first time I had the opportunity to closely observe the work of doctors and nurses, and how they cared for patients in a hospital setting. I was impressed by their neat appearance, professionalism, and compassionate demeanor. That encounter must have unconsciously inspired me to pursue medicine as a career.

Unfortunately, I was not a serious student at the time. Consequently, I passed the SLC examination in 1971 (2028 BS) with a low grade. That precluded me from enrolling in the science stream, which used to be called Intermediate of Science (I. Sc.) in those days. As a result, I was compelled to join the Humanities program in

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Patan College (now called Patan Multiple Campus), where I was required to take courses such as Economics, Political Science, English, Literature etc. However, I did not enjoy studying that program. Fortunately, under the National Education Plan of Nepal of 1971, Tribhuvan University established the Institute of Medicine (IoM) in 1972. Soon after its establishment, it launched 2.5 years long Certificate Programs in Medical Sciences with the goal of producing mid-level health professionals necessary for government health services. I was accepted into this program in 1974, worked at a Health Post in Dolakha District for a year, and then enrolled in the IoM-run Bachelor of Medicine and Bachelor of Surgery (MBBS) Program in 1978, graduating in 1985.

Upon completion of my MBBS degree, I worked in Nepal for a few years and then went to Sweden in 1991, where I spent a year as a Research Fellow at Lund University. During my time there, I realized that I was more fulfilled by clinical care than laboratory research. Therefore, I began preparing for the USMLE-equivalent exam during my stay in Sweden. After passing the exam, I went to the United States for residency training in Internal Medicine (1993-1996, SUNY Syracuse), followed by fellowship training in Pulmonary and Critical Care Medicine (1996-1999, Brown University). Since I never intended to remain in the U.S., I returned home immediately after completing my training and dedicated myself to improving the quality of medical care and medical education in Nepal.

Q.2 How did you end up in Patan Hospital to begin with?

Answer: Since I was a permanent faculty in the TU Institute of Medicine, my intention upon returning from the U.S. in 1999 was to resume my work there. However, during the administrative process, I sensed institutional reluctance and professional unease among some of the physician colleagues at the IoM / TU Teaching Hospital. Having felt that resistance, and being confident in my own ability and hard earned clinical competence, I was not too keen to continually press for my position there. Consequently, I voluntarily resigned and, in a rather serendipitous manner, ended up at Kathmandu University (KU). As it turns out, KU had already granted affiliations to several private medical colleges without having its own constituent medical school, which was a key regulatory requirement. Under tremendous pressure to establish a medical school of its own, KU leadership invited me to take charge of this initiative. Given my intrinsic interest in the area of medical education, I considered this an exciting opportunity. After consultation about this invitation with my close colleagues, we embarked on developing what would become the Kathmandu University Medical School (KUMS) in 2000, with me leading the process as the Project Coordinator. The enrollment of the first batch of medical students in Aug 2001 gave us the opportunity to introduce several innovative measures in curriculum and pedagogy, particularly in basic sciences. However, these innovations would not have been possible without the active partnership and collaboration of international colleagues, primarily spearheaded by my friend and colleague, Prof. Cliff Tabin, now Chair of the Department of Genetics at Harvard Medical School. Through his generosity and inspiring leadership, several volunteer basic science faculty were mobilized to teach at KUMS, which was critical to help us meet both regulatory requirements and implement the innovative measures in basic sciences teaching. I remain deeply grateful for his invaluable contribution.

While basic sciences teaching was underway, we were also required to arrange appropriate clinical training site for our students. For this, we either had to build a new teaching hospital or partner with an existing institution of sufficient size and capacity. We believed Patan Hospital (PH), a public hospital of high repute and a strong pro-poor service ethos, would be an ideal teaching site for training technically competent and socially responsible physicians. To that end, we initiated formal negotiations with the PH leadership. However, some unanticipated obstacles emerged. Unfortunately, instead of addressing these issues amicably, KU leadership withdrew from negotiations with PH and entered into an agreement with the B & B Hospital, a privately-run, profit-making institution. This decision was made without consulting the KUMS leadership team, including me in my capacity as Program Director. Not only was this action personally disappointing and professionally insulting, it also directly undermined our shared vision. We believed that a profit-oriented hospital would not provide the environment needed to nurture young medical students into socially responsible physicians, a principle KU leadership originally endorsed. As a result, our entire team resigned from KUMS on 29 Oct 2003. The PH leadership, equally upset at having been left in the dark, felt betrayed as well. In this context, our former KUMS team forged a new partnership with PH on a shared commitment to promote innovative medical education responsive to Nepal's priority health needs.

Subsequently, a Medical School Steering Committee (MSSC) was formed on 13 Nov 2003 under the Chairmanship of Dr. Mark Zimmerman, the then Medical Director of PH. Other members included senior PH clinicians Drs. Achyut Rajbhandari (Orthopedics), Rajesh Gongal (Surgery), Hom Neupane (Medicine), Kundu Yangzom (Obstetrics and Gynecology), Neelam Adhikari (Pediatrics), as well

as former KUMS colleagues Drs. Saroj Dhital, Kedar Baral and Shambhu Upadhyay. After joining PH as a consultant physician on 28 Nov 2003, I was appointed Member-Secretary of this committee. Our mandate was to analyze relevant issues and develop a blueprint for a new medical school.

The work undertaken by the MSSC laid the foundation for the eventual establishment of the Patan Academy of Health Sciences (PAHS). That is how I became involved with Patan Hospital, and later, PAHS.

Q.3 You were the main initiator of new health sciences university in the early 2000s. What were the core motivations and vision behind establishing Patan Academy of Health Sciences (PAHS), and how did you see it addressing Nepal's health care needs at the time?

Answer: During my medical training in the U.S., I became acutely aware of the gap between Nepal and the U.S., both in how we trained doctors and the quality of care delivered. That realization motivated me to help bridge the gap. My early work toward this goal included engaging with Kathmandu University in creating its first constituent medical school in Banepa (which subsequently moved to Dhulikhel), in 2001. The undergraduate medical program that we launched in this new medical school was quite innovative, characterized by new pedagogical approaches including Problem Based Learning (PBL) and Community Based Learning (CBL).

At the time, Nepal was in the throes of the Maoist insurgency and the restoration of peace and order was a national priority. It was clear to me that durable peace required addressing underlying structural inequities, among them the stark disparities in access to quality health services between urban and rural areas. Widespread poverty, low health awareness, and a poorly functioning health care system were some of the prominent factors contributing to these disparities. One of the reasons behind the dysfunctional health care system was the reluctance of medical doctors—who are leaders of the health care team—to go and serve in rurally located government health care institutions.

Literature review and our own analyses highlighted why doctors were reluctant to work in rural posts: besides weak incentives and poor infrastructure and supplies in the peripheral health care institutions, inadequate clinical competence and confidence, and a lack of supportive supervision, technical backstopping, and professional development opportunities were major reasons cited for this reluctance. On the other hand, we also found that medical students from rural backgrounds were far more likely to return to rural service after graduation. This pointed to a clear opportunity to bring innovation into the medical education system, including the introduction of an appropriate student recruitment policy which, in turn, could contribute to making the health care system efficient, effective, and responsive to the needs of individual patients while also improving the health status of the public at large.

During our deliberations in the MSSC, we were able to crystallize a few key points:

a) In order to bring the required innovation in medical education, autonomy in governance is essential. Without that we can neither develop innovative curriculum and pedagogy nor select the appropriate cohorts of students who, upon graduation, will be able and willing to serve in rural areas and thereby contribute to addressing the existing health disparities

b) Starting a new medical school affiliated with one of the existing universities would mean that we would have no control over curriculum design or student selection. Moreover, we would be required to pay a large affiliation fee annually to the affiliating university.

c) Another option was to become a constituent part of an existing university that does not yet have its own medical school. We had a preliminary dialogue on this option with the then leadership of Purbanchal University (PU). However, allowing PH to be an integral part of PU would pose a major political hurdle. By virtue of such an arrangement, PH would have legally come under PU, which would likely have been unacceptable to both the PH staff and the PH board. Therefore, we did not consider this a viable option.

d) The MSSC reached consensus on creating a health sciences university rooted in PH. That way we would not only have autonomy over academic matters but it would also be an acceptable option to the PH board. The proposed name for this university was Patan University of Health Sciences (PUHS).

We then submitted the PUHS proposal to the PH Board, but it was rejected. The Board Chair at the time was the late Dr. Hari Nath Acharya, a senior officer in the Ministry of Health and Population (MoHP). However, following a change in government, Dr. Hikmat B. Bista was appointed as the new Chair of the PH Board. We then briefed him about the PUHS initiative to which he was very supportive. Consequently, at its subsequent meeting held on 9 Mar 2004, the PH Board endorsed the PUHS proposal. In addition, the Board authorized the MSSC to undertake all necessary steps to plan and establish a new medical school as an integral part of the proposed health sciences university, i.e., PUHS.

Even though the MSSC members were pleased about this decision, Dr. Zimmerman was not that happy. He was in the U.S. on furlough at the time and felt left out of the process. He had hoped we would wait for his return so that he could present the proposal to the board himself. However, given the highly volatile political situation in the country we felt it was necessary to act within the limited window of opportunity while Dr. Bista was still serving as Chair of the PH board. Therefore, we moved forward with the process before Dr. Zimmerman's return.

In retrospect, it appeared that Dr. Zimmerman had envisioned the new medical school following a model similar to the Christian Medical College in Vellore, India. Our proposal to establish a health sciences university represented a different institutional approach, one that would by definition be a secular entity. This difference in perspective may have contributed to his reservations regarding the PUHS proposal.

In any event, Dr. Zimmerman questioned the relevance and usefulness of the PUHS proposal and insisted that a credible third party should evaluate the feasibility of PUHS proposal. I am not sure whether he genuinely sought an objective evaluation or whether it was an attempt to abort the process. Nevertheless, we accepted this challenge. He then developed a Terms of Reference for the prospective consultant willing to undertake the evaluation. We contacted several internationally known leaders in the field of medical education to conduct a feasibility study of our proposal. While a few distinguished individuals expressed willingness, they demanded round-trip business class tickets to Nepal and consultancy fees in U.S. dollars, a demand beyond the means of PH.

Fortunately, Prof. Robert Woollard from the University of British Columbia in Canada, whom I met in Denmark in 2003 during a global conference on medical education, was willing to take on the assignment pro bono. The only expenses PH had to cover were his food, accommodation, and local transportation. Upon knowing this, he decided to fly to Kathmandu at his own expense, arrived on 11 Dec 2004, stayed until the 18th reviewing various pertinent reports, interviewed almost 40 individuals from different backgrounds, and submitted his academic feasibility report a few weeks later. The main conclusion of his report was that although many challenges lay ahead, the proposal was nonetheless both relevant and doable. I remain deeply grateful for his generosity and willingness to support this initiative at such a critical time.

In addition to this, we assigned a management consulting company, the Institute of Development Management Studies (IDMS), to undertake the financial feasibility (non-academic) study of the PUHS proposal. This report was submitted on 15 Jun 2005, concluding that, provided certain infrastructural and governance issues were addressed, the PUHS proposal would be feasible.

While our internal preparation was ongoing, Nepal was experiencing various kinds of political turmoil, including the Royal Coup on 1 Feb 2005, and the declaration of a State of Emergency. Despite these challenges, we successfully organized our first Consultative Meeting from 24 – 26 Oct 2005. The Second Jana Aandolan (People's Movement) started on 4 Apr 2006, and as the peaceful demonstration gained immense support from the public, King Gyanendra was forced to relinquish his royal authority on 24 Apr 2006. This was followed by the restoration of parliament and the formation of a new democratic government.

Soon after this political shift, Patan Hospital came under a new governance structure known as the "Bikas Samiti" and a new Chair was appointed to the PH Board. We approached the newly formed Board, briefed its members about the PUHS initiative, and requested their endorsement. Consequently, the board meeting held on 9 Feb 2007, made the following decisions:

a) Reaffirm commitment to and provide the leadership needed to materialize the PUHS proposal of Patan Hospital;

b) Form the PUHS Project Committee to undertake all the required work to establish PUHS;

c) Allocate necessary resources to support the committee's work;and

d) Initiate formal negotiations with the government for the approval of PUHS

Following this decision, the work of the MSSC was taken over by the PUHS Project Committee, and I was appointed the Project Coordinator.

On 27 Feb 2007, we met with Hon. Amik Sherchan, then Minister of Health and Population (MoHP), and submitted a formal application requesting approval of the PUHS proposal. He responded positively and suggested that we also submit a draft PUHS bill necessary for the approval process. We then began the process of drafting the bill.

Before we could proceed further, Hon. Giriraj Mani Pokharel succeeded Hon. Sherchan as Minister for MoHP. Hence, on 29 May 2007, we submitted a new application along with the draft PUHS bill to him. However, we learned that aside from MoHP endorsement, concurrences from the Ministry of Law and Justice and the Ministry of Finance were also required. While the former granted concurrence without difficulty, the Ministry of Finance raised objections.

Mr. Krishna Hari Baskota, Joint Secretary and Head of the Budget Division, informed us that a university could not be established based on a proposal originating from MoHP. Such proposals, he noted, could only create an 'Academy' (Pratisthan), as in the cases of BP Koirala Institute of Health Sciences (BPKIHS) and National Academy of Medical Sciences (NAMS). It turns out that to establish a university, the proposal needed to originate from the Ministry of Education (MoE). We believed MoHP would not agree to transfer ownership of PH to MoE. It is worth noting that this was a time when the nation was preparing for the election of the Constituent Assembly, and the term of the parliament was soon to expire. Taking these factors into account, we had no option other than to agree to a new name: Patan Academy of Health Sciences (PAHS). Once we did so, Mr. Baskota promptly issued the concurrence letter. This is how PUHS eventually became PAHS.

With all the paperwork completed, the PAHS bill was approved by the Cabinet on 21 Aug 2007 and forwarded to the parliament for review and endorsement. During the parliamentary deliberations, some groups vehemently opposed the bill. We later learned that these vested interest groups had planned to use PH to run their private nursing colleges. Despite this resistance, the PAHS bill was endorsed and the President of Nepal authenticated on 6 Feb 2008.

It must be emphasized here that the only substantial differences between PUHS and PAHS were that PUHS would have been under the jurisdiction of the MoE, whereas PAHS would be governed by MoHP, and PAHS could not grant affiliation to other institutions. Otherwise, both PUHS and PAHS would enjoy equivalent privileges granted by the parliament of Nepal.

The enactment of the PAHS bill opened the door for us to design and implement an innovative model of medical education that aimed at producing technically competent and socially responsible physicians, willing and able to serve the rural population. As an autonomous institution, PAHS had the mandate to introduce novel approaches in student recruitment, curriculum development, pedagogy, and campus-community partnerships. Community engagement and clinical training in peripheral health care institutions were some of the hallmarks of our innovation. The primary goal of these approaches was to nurture medical students to evolve into competent, caring, ethical, and responsible physicians who appreciate the social determinants of health and are committed to improving the health of the population at large.

While I had the honor and privilege of being at the forefront of this endeavor, many colleagues within, including the MSSC and PUHS Project Committee members, and beyond Patan Hospital and Nepal contributed enormously in shaping the vision and establishment of PAHS. I take this opportunity to acknowledge their contribution and express my gratitude to all of them.

Q.4 PAHS was founded with a unique social mission. How did the idea of "serving the underserved" shape its early policies and academic design?

Answer: Historically, societies have allowed medical schools to train physicians with the expectation that these graduates will take care of the people of that society. Members of the community not only help fund the medical schools through taxes, but also contribute directly by allowing medical students to examine them and practice learning essential clinical skills. For example, during clinical rounds, medical faculty demonstrate relevant physical findings on patients who, in principle, have every right to refuse examination. In practice, however, patients usually comply willingly, a generosity that forms the foundation of what is known as the principle of social contract in medicine. This implicit agreement between physicians and society at large ensures that competent health professionals are trained to meet the population's health care needs. In other words, without society's generosity and participation, it would be impossible to produce physicians or other health professionals. In return, these health care professionals, including physicians, nurses, pharmacists, physiotherapists, and others, have a moral duty to serve the very communities that supported their education. Increasingly, this obligation is understood not just at the individual level but also at the institutional level, meaning that medical schools themselves must embody this responsibility.

In 1995, the World Health Organization (WHO) published a landmark document titled "Defining and Measuring the Social Accountability of Medical Schools" (Boelen C and Heck J, WHO, 1995). They defined the concept of social accountability as "the obligation to direct their education, research, and service activities towards addressing the priority health concerns of the community, region and / or nation they have the mandate to serve." The document further emphasized that priority health concerns should be identified jointly by governments, health care organizations, health professionals, and the public. This principle was reiterated in 2010 through the "Global Consensus for Social Accountability of Medical Schools," where Prof. Dr. Rajesh Gongal, the then Dean of the School of Medicine, represented PAHS in endorsing this consensus document.

Given our urgent national need to bridge the existing health discrepancies and the emerging

global consensus on the need for medical schools to be responsive to the priority health care needs, we designed our academic policies and programs accordingly.

Q.5 As the founding Vice Chancellor of PAHS, what were the biggest challenges you faced in turning the vision of PAHS into a functioning institution?

Answer: Let me begin with the positive aspects. As you are well aware, PAHS was built upon the strong institutional foundation of Patan Hospital, which has a long history of serving the needy, tracing back to its predecessor, Shanta Bhawan Hospital, established by the United Mission to Nepal in 1956. Having earned the trust and respect of the patients and the wider community, PH was already running self-sufficiently. Considering the fact that a minimum 300-bed hospital is a prerequisite for medical school accreditation, having Patan Hospital as an integral part of PAHS was a tremendous advantage. Though it began as a District Hospital, it had already evolved into a center providing clinical services in all major specialties. This meant we already had an adequate number of highly experienced clinical faculties as well. Most importantly, the deeply rooted service ethos of Patan Hospital fully aligned with the core values PAHS sought to instill in its medical students.

While these strengths provided a strong foundation for us to launch the MBBS program, we faced equally daunting challenges. To begin with, although several senior faculty members were involved in training postgraduate residents from the NAMS who rotated through Patan Hospital's major departments, very few had formal pedagogical training or firsthand experience in teaching undergraduate medical students. We also lacked in-house expertise to design an innovative MBBS curriculum that reflected the aspirations articulated in the PAHS concept note. Moreover, we were uncertain regarding the appropriate strategies for recruiting students who were genuinely committed to serving in rural areas. Most critically, at the time, we had virtually no basic science faculty of our own.

Since our primary goal was to ensure that graduates were both willing and able to serve in rural areas, we sought—based on evidence from literature reviews—to open admission opportunities to deserving candidates with a health sciences background, many of whom already had firsthand experience working in rural health posts. However, the Nepal Medical Council (NMC) guidelines existing at the time did not recognize such candidates as eligible for MBBS studies. Fortunately, as an executive member of NMC, I was able to persuade my colleagues of the need to revise the eligibility criteria. The revision was approved, enabling these candidates to sit for our entrance examination. Those who succeeded went on to pursue their MBBS degrees at PAHS.

Beyond these operational and regulatory hurdles, there were also internal challenges. Some within Patan Hospital were initially concerned that PAHS might overshadow or erode the hospital's identity and institutional harmony. Thankfully, these misconceptions gradually faded over time, and today, staff at Patan Hospital take pride in being part of PAHS and contributing to its mission.

Q.6 What kind of opportunities—both national and international—helped PAHS establish itself during its formative years?

Answer: One can say that challenges and opportunities are two sides of the same coin. The existing health disparities in Nepal were stark, and the rural-urban divide in access to and quality of health care were reflected in indicators such as the infant mortality rate (IMR), maternal mortality rate (MMR), and life expectancy. The reluctance of physicians to serve in rural areas was profound. Against this backdrop, our rationale for establishing a new academic institution based at Patan Hospital, focused on training doctors for rural Nepal, was both solid and credible.

When we began the PAHS initiative in 2004, Nepal was facing a turbulent and unstable political period. The civil war was at its height, the parliament had been dissolved, and the King was ruling the country. The Second Peoples Movement in 2006 resulted in the restoration of the parliament and the promulgation of the interim constitution, bringing the Maoists into mainstream politics. The highly influential late Girija Prasad Koirala served as Prime Minister at the time and I was part of the medical team attending to him. This provided an opportunity to personally explain to him the rationale and goals of the PAHS initiative, eventually gaining his strong support. As a matter of fact, the PAHS Act was passed mainly because of his blessing. Therefore, we all neeed to express our gratitude for his historical contribution to bring PAHS into existence.

We also established robust academic relationships with prominent international academicians, including, among others, Professors Robert Woollard (UBC, Canada), Cliff Tabin (HMS, USA), Carol Ann Courneya (UBC, Canada), Mick Alkan (BGU, Israel), Sam Leinster (UEA, UK), David Cook (UA, Canada), David Powis (UON, Australia), Fred Bosman (UNIL, Switzerland) etc. These colleagues played an instrumental role in validating the relevance of PAHS, developing our MBBS curriculum, providing faculty training, and guiding our innovative admission policies. Some were also involved in the performance evaluation of PAHS in 2012. Likewise, while planning the Master of Public Health (MPH) curriculum, we engaged several

prominent public health leaders, including Professors Fred Connell (UW, USA), the late David Sanders (UWC, South Africa), Colin MacDougall (Flinders, Australia), Maxine Whittaker (UQ, Australia), and Richard Cash (Harvard, USA) among others.

I had known several of these colleagues since my time at Kathmandu University, so they were already aware of our commitment to improving medical education in Nepal. The annual consultative meetings that we began in 2005, even before PAHS was formally established, played a crucial role in fostering these collaborations.

These experts supported us because they recognized the sincerity and authenticity of our mission. Their goodwill and guidance helped us tremendously to build our institutional capacity. I would like to take this opportunity to acknowledge their invaluable contribution and express our collective gratitude.

Q.7 How did you navigate the balance between limited resources, regulatory hurdles, and the need for innovation while leading PAHS in its early days?

Answer: This is a great question. Striking a balance between the need to comply with the regulatory requirements and pursuing innovation is a real challenge, especially in contexts where resources are limited and leadership is reluctant to explore beyond established boundaries.

On the other hand, as the saying goes, where this is a will there is a way. After all, the fundamental goal of medical education is to produce physicians who will be able and willing to respond to the health care needs of the population and contribute to improving overall health outcomes. With this overarching goal in mind, one can define, design, and implement innovative changes to fulfill that very purpose. From this standpoint, PAHS had a comparative advantage in introducing desirable innovation in medical education.

First, as a new institution, PAHS had the unique opportunity to start with a clean slate. It did not carry any historical baggage that might have resisted innovation. Moreover, the senior clinicians and faculty were, to a large extent, supportive of the bold innovations we initiated. I believe this was possible because policies related to student admissions, curriculum, pedagogy, and assessment were introduced not in isolation, but were coupled with faculty training in those areas. This approach enabled faculty members to take ownership of the policies and stay committed to their implementation.

Second, PAHS was built on the solid foundation of Patan Hospital, giving regulatory bodies confidence in our ability to deliver on our promises.

Third, both the PAHS faculty and the regulatory bodies were cognizant of the fact that we had a strong academic collaboration with accomplished international faculty from reputed universities abroad.

However, it is unfortunate that we could not sustain all these innovative approaches, partly because of the entry of the National Medical Education Commission (NMEC) and partly because of the slowly growing complacency within the leadership of PAHS.

Q.8 PAHS is known for its community-based education, problem-based learning and case presentation models. What inspired these approaches, and how have these initiatives impacted students, communities and medical education of Nepal?

Answer: The fundamental underlying principles behind the pedagogic approaches you mentioned are consistent with the principles of adult learning. It is well established fact that students learn better when they are actively engaged in the learning process, and when they understand the relevance of what they are learning for their future work. Experiential learning based on real-world situations is far more effective compared to conventional learning in a classroom or library setting.

I wish to recall the fact that I had the opportunity to attend a week-long workshop on PBL in the mid 1980s that was organized by a medical school in Maastricht, Netherlands and I was fascinated by what I saw and experienced. Hence, we implemented that very approach at the KUMS and the results were impressive. We introduced the same approach at PAHS as well. It must be recognized that medical science is vast and it is impossible to teach everything within the defined study period. Moreover, facts and concepts continue to evolve. Hence, rather than bombarding the students with the facts, it is far more efficient and effective to teach them how to look for, find, and use the relevant information, as and when there is a need for it.

The reason we introduced CBL are as follows. First, it is important for every physician to appreciate the structure, dynamics, scope, and limitations of the existing health care system. Exposing medical students to communities provides them with firsthand experience of how our primary health care system is organized. Second, spending time in rural settings helps students understand the social determinants of individual and population health in real-life situations. Third, such exposure also enables them to recognize the potential strengths of communities in addressing these determinants.

This understanding is expected to help medical students become holistic physicians and acquire the skills, confidence, and motivation to undertake appropriate interventions for the prevention and promotion of health among the people they will be serving upon graduation.

While we were implementing the PBL system during the basic sciences teaching, one of our colleagues, Prof. Robert Suskind, the then Dean of the Paul L. Foster School of Medicine located in El Paso, Texas, told us about the educational relevance and value of the Clinical Presentation Curriculum that was in practice in the University of Calgary, Canada. Consequently, Prof. Shrijana Shrestha and I made a visit to the U.S. to meet with Prof. Henry Mandin, the main propounder of this system, who at that time was working as a consultant to a newly established Osteopathic School near Phoenix, Arizona. Prof. Mandin helped us understand the theoretical underpinnings of this system. There are two underlying concepts behind this approach. The first is that our body systems have finite ways of reacting regardless of the nature of the insults our body is exposed to. For example, when we develop a problem affecting our respiratory system, we may cough, experience difficulty breathing, expectorate purulent sputum or blood, or develop chest pain or fever. The second is that patients mostly come to see the doctors regarding their bodily responses or symptoms. And it is the job of the doctors to analyze symptoms, perform physical examinations, and initiate appropriate workups before ascertaining the underlying diagnosis of a patient. Therefore, it is far more efficient to teach students about commonly encountered clinical manifestations and how to take logical steps toward establishing a diagnosis. This stands in sharp contrast to the traditional model of clinical teaching, in which medical students are taught primarily about diagnostic entities. Graduates of such programs often struggle to approach patients' symptoms logically and arrive at the correct diagnosis. We were convinced of the value of this approach and therefore decided to introduce this system at PAHS during the clinical years.

In the absence of robust data generated by the systemic evaluation of our graduates and those who received their services, it is difficult to be certain about the impact that these innovative pedagogic approaches may have had on health outcomes and patient satisfaction. However, during our field visits several years earlier to observe how our graduates were faring while working in rurally located government health care institutions, they told us that they felt better prepared to handle clinical situations compared to their peers who graduated from other medical schools within and outside Nepal.

Nevertheless, this is merely an anecdotal impression and warrants rigorous and systematic studies to reach a definite conclusion. I am not sure to what extent the leadership of the NMEC and other medical schools are aware of the innovative pedagogical approaches pursued by PAHS. I believe PAHS must publish its experiences with these approaches, supported by robust data, in peer-reviewed journals. Only then can PAHS meaningfully influence ongoing innovation in medical education within and outside Nepal.

Q.9 How did PAHS innovate in terms of curriculum design, faculty development, and student selection compared to traditional medical institutions in Nepal?

Answer: When the Institute of Medicine (IoM) of Tribhuvan University launched its undergraduate medical program (which was eventually named as MBBS program) in 1978, the team led by Dr. Moin Shah, who was the founding dean and an innovative thought leader, embraced a new model of medical education that was significantly different from the ones that existed in South Asia and many countries around the world at the time. The idea of teaching basic sciences in an integrated, organ-system-based manner was a revolutionary concept at the time and faced severe criticism from the medical establishment of that era. In addition, IoM had also introduced the idea of CBL and PBL. The BPKIHS adopted a similar model when it launched its MBBS program in 1994. When we launched the MBBS program at the KUMS in 2001, we departed from the curriculum that the KU-affiliated medical colleges were following at the time. The departure included in the area of curriculum as well as pedagogy. In KUMS, we adopted the PBL method as the principal mode of curriculum delivery. We also initiated the CBL. Unfortunately, the founding team behind this innovation had to leave KUMS before the curricular cycle could be completed.

Therefore, the innovations we implemented at PAHS were an amalgamation of lessons learnt from various initiatives undertaken in the field of medical education in Nepal, as well as lessons from regional and global experiences and best practices. One major feature that we added to our curriculum was defining the attributes of PAHS graduates, which provided the guiding principles for curriculum development. It is worth mentioning here that we also consulted community representatives in defining those attributes. Another innovation we introduced in the PAHS MBBS curriculum was the inclusion of medically relevant science subjects (Physics, Chemistry and Biology) and selected components of community health sciences during the first six months of the foundation program. This was particularly important because a number of students who joined the MBBS program directly from high school had no prior health

care experience, while others from a health sciences background whose science knowledge may have faded during their work as mid- level health workers. The main rationale for designing the foundation program was to help the students coming from both streams reach a common knowledge base and pursue the remaining parts of the MBBS curriculum with relative ease.

In addition to contributions from several international faculty, Prof. David Cook and Prof. Mick Alkan in particular, the founding basic science faculty and many academically inclined clinicians from PH were heavily engaged in shaping the curriculum. We even organized a workshop on curriculum development from 27 Feb to 1 Mar 2006. As a result, there was a strong sense of ownership of the curriculum across the board. Additionally, we sought international support for faculty development. Consequently, Prof. CA Courneya (Canada) conducted a workshop on PBL from 15-18 Apr 2004 and Prof. Sam Leinster (UK) conducted a similar workshop on clinical teaching about two years later. A number of additional workshops focusing on curriculum, pedagogy, and faculty development were held during 2009 and early 2010.

Another novel initiative was the requirement that scholarship students serve two or four years in rural health care institutions, depending on whether they received partial or full scholarships. The idea behind this approach was that there is no such thing as a free lunch. To implement it, we attempted to foster partnerships with rural districts to share the costs of scholarships, with the understanding that students from those districts would serve for two years within their respective jurisdictions. We also managed to have Mr. Min B. Gurung, the owner of the Bhat Bhateni, sponsor two students from remote districts on an annual basis, provided they were selected for admission. Likewise, Doctors for Nepal, a UK based NGO also sponsored a few students from the Karnali region every year. I believe the government's subsequent decision to provide scholarships to those studying MBBS in public medical schools may have disrupted these arrangements.

To orient medical students to professional ethics from the very beginning, we introduced the White Coat Ceremony soon after admission. As far as I know, no other medical school in Nepal conducts such a program.

The most innovative initiative we undertook was in the area of student selection. There was ample evidence globally indicating that students who grew up in rural areas were far more inclined to return and practice medicine in rural settings. Experiences from countries such as Fiji and the Philippines also demonstrated that medical students who had previously worked as health workers previously were more likely to work in rural areas upon graduation. Nepal had similar experience, but the hard data was not available until it was published in the BMJ in 2012.

However, the prevailing model of entrance examinations was designed in such a way that only students who attended good schools in major cities were able to secure admission to medical school. Many within this cohort aspired to pursue postgraduate studies abroad and settle there rather than serve in rural areas of Nepal. In contrast, students from rural backgrounds often did not have the same level of scholastic achievement as those from cities, not because they were less intelligent, but because the schools they attended lacked qualified teachers and adequate educational resources. However, they were generally far more willing to serve in rural areas. We were concerned about this issue and began exploring the potential solutions.

Fortunately, we got connected with Prof. David Powis from the University of Newcastle, Australia, who had been working on innovative methods of student selection. Based on his studies of scholastic and behavioral characteristics of large cohorts of medical school applicants who later became successful physicians, he found that beyond academic performance, cognitive ability and certain behavioral traits were the strongest predictors of success in the medical profession. He then devised a battery of tests to assess these features among applicants and the results were well validated. This assessment, called the Personal Qualities Assessment (PQA), comprised the Mental Agility Test (MAT), the Mojac Scale and the NACE Scale. We believed this method could be appropriate for our context.

At that time, unlike the centrally administered, single-window entrance examination that exists today, each university conducted its own entrance examination for prospective applicants. We sought to seize this opportunity to implement this novel method of student selection. We invited Prof. Powis to visit PAHS and our team interacted with him extensively. Upon understanding our objectives, he generously agreed to make the test available to us free of cost. However, we still needed to determine whether the tool was equally valid for Nepali applicants. To address this concern a pilot test was conducted among both 10+2 students and those with a health sciences background, and sent the answer sheets to Prof. Powis for scoring. We were delighted to learn that the average scores that our students obtained were comparable to those of Australian applicants. Having been validated, we formally adopted PQA as part of our admission policy.

In addition, we also incorporated Multiple Mini Interviews (MMI) into our admission process, which had been practiced at McMaster University in Canada for many years. Furthermore, beyond evaluating applicants as individuals, we also took into consideration their geographic origin, socioeconomic background, ethnicity, and gender. We coined a new term to describe this aspect and named it the Social Inclusion Matrix (SIM). As such, each successful applicant had to meet threshold requirements in both PQA and MMI, with SIM scores contributing to the final selection.

It is unfortunate that this system of medical student selection was discontinued when NMEC assumed jurisdiction over the entire admissions process. However, it would be worthwhile to conduct a comparative study of the two cohorts of PAHS graduates, those selected using the innovative system and those admitted through the current centralized process, particularly in terms of their performance and service in rural areas.

Q.10 Looking at the current state of PAHS, what achievements are you proudest of, and what areas still require significant improvement?

Answer: It has been almost a decade since I took age-related mandatory retirement from PAHS, so I must acknowledge that I do not have full knowledge of the achievements made since my departure. What I am aware of is that PAHS has already established the School of Public Health and the School of Nursing and Midwifery. I greatly appreciate the inclusion of Medical Humanities and Palliative Care in the MBBS curriculum. I have also noted that PAHS has launched postgraduate residency programs in many specialties, as well as fellowship programs in Rheumatology and Infectious Diseases. I would therefore like to congratulate everyone involved, including the leadership, for their vision and hard work to achieve this.

One thing that makes me particularly proud is that, at a certain point in the past, nearly half of our MBBS graduates were serving in rurally located Primary Health Care Centers and District Hospitals under the MoHP. I have witnessed them working such institutions from eastern to western Nepal. This, I believe, is a true testimony to the success of the PAHS mission. I am also very proud of the way PAHS handled the COVID crisis and saved so many lives.

I think PAHS leadership should not be content with the innovation already made in its medical education program. Rather, it should remain curious, open-minded, and watchful of national, regional and global trends. It should use every opportunity to learn and build institutional capacity to respond effectively to the emerging health care needs and challenges. PAHS leadership should also prioritize fostering an enabling environment that allows faculty and students to unleash their creative potential, generate new ideas, and publish them in reputable international peer-reviewed journals.

Engaging in health-system-related operational research is another area that PAHS should seriously consider pursuing, especially if it wants to stand out in the academic community in Nepal and beyond.

Likewise, given the lack of quality-driven Continuing Medical Education opportunities in Nepal, PAHS could play a leading role in addressing this gap. This could be done independently, or in collaboration with reputable organizations within and outside the country.

Q.11 How do you envision PAHS contributing to Nepal's health system in the next 10–20 years, particularly in rural health care and public health?

Answer: The nature of health care challenges has been changing gradually since the establishment of PAHS in 2008. Even though national health indices have improved, I believe the rural-urban health divide continues, albeit to a lesser extent. The demographic shift and internal migration from rural villages to urban areas has become worrisome, and so has the impact of climate change. Moreover, the country has entered into a federal structure with seven provinces and 753 local municipalities. This change has also brought changes to the way the health system was organized prior to the adoption of federalism.

It is within the context of the challenging times that the role of research and innovation, which is incorporated in the PAHS mission, is of paramount importance. Therefore, in pursuing its mission to achieve sustained improvement of the health of our people, there are several areas that PAHS could consider engaging in. Beyond continuing the production of health human resources, it should also consider undertaking operational research. The potential areas for such research are numerous. However, I will highlight only three.

One of the pressing issues in our health system is appropriate health care financing. Health insurance has been a topic of discussion for several years. Although the Government of Nepal seems to regard it as a priority issue and has been implementing it incrementally, there remains a degree of skepticism among potential users of this scheme. It appears that until access to and quality of health care services are improved substantially, it will be difficult to persuade users to enroll in the insurance system. Hence there is a need to identify critical factors that enhances the enrollment in and effective use of the health insurance system by the public.

Another area that needs urgent attention is the current state of dysfunctional referral system. Providing quality specialty and subspecialty clinical services at every hospital in the country is neither necessary or nor feasible. However, people living in remote rural areas may develop conditions that require timely interventions from specialty and subspecialty services. In a resource-limited country like ours, there is a need for us to be smart and find efficient ways and means to make the best use of available resources. Hence, we must develop an effective system that ensures appropriate triage and the safe and rapid transfer of patients to the appropriate level of care capable of providing needed care promptly and efficiently.

The third area that is critically important is the promotion of the rational use of medicines, especially antibiotics. Nepal is flooded with a variety of pharmaceutical products of variable quality. While it is critically important to strengthen the technical capacity of our national regulatory body—the Department of Drug Administration—so that it can provide effective oversight and appropriate scrutiny over the pharmaceutical products in the country, there is also a need for continuous education of clinicians regarding the rational use of medicines, including antibiotics. PH has a rich tradition of encouraging its clinicians to adhere to the essential drugs list. This foundation could be strengthened to address emerging challenges.

Given its pool of expertise in the fields of public health and infectious diseases, and having a well functioning tertiary care hospital with a talented group of faculty, students, and leadership, PAHS is well positioned to use these resources and its reputation to address existing and emerging public health challenges and live up to its commitment to improve the health of people in Nepal.

Q. 12 What message would you like to give to future leaders, faculty, and students of PAHS to sustain its mission and strengthen its impact?

Answer: PAHS has already earned the respect it deserves through the successful implementation of many innovative approaches in medical education and by maintaining a strong track record. However, in order to remain ahead, PAHS should always be future-oriented and willing to go above and beyond.

If PAHS leadership, faculty, and students are to uphold the spirit of the PAHS Mission Statement, which reads “Dedicated to sustained improvement of the health of the people in Nepal, especially those who are poor and living in rural areas through Innovation, Equity, Excellence and Love in Education, Service and Research”, they must continue to aim high and harvest their creative potential. It must be reiterated here that we formulated this statement through a process of collective reflection and careful deliberations in 2006, even before PAHS was formally established.

I call upon the current and future leadership of PAHS, and all members of the PAHS family, to reflect upon this mission statement and ask: to what extent have we realized this mission, and what more must we do? Although the ideas enshrined in this mission statement are aspirational, they should nevertheless act as a north star for PAHS leadership and guide its current and future policies, plans, programs, and activities.