



THE AGA KHAN UNIVERSITY
KENYA PAEDIATRIC FELLOWSHIP PROGRAM
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Abbreviations

AKU	Aga Khan University
AKUH	Aga Khan University Hospital
APFP	Africa Paediatric Fellowship Programme
CHAI	Clinton Health Access Initiative
KNH	Kenyatta National Hospital
KPA	Kenya Paediatric Association
KPFP	Kenya Paediatric Fellowship Programme
PMH	Pumwani Maternity Hospital
SONAM	School Of Nursing And Midwifery

Word from the Project Principal Investigator

Prof Pauline Samia



Looking at the Kenya Paediatric fellowship program at Aga Khan University(AKU) since its inception in 2019, I am amazed at the growth and the milestones achieved.

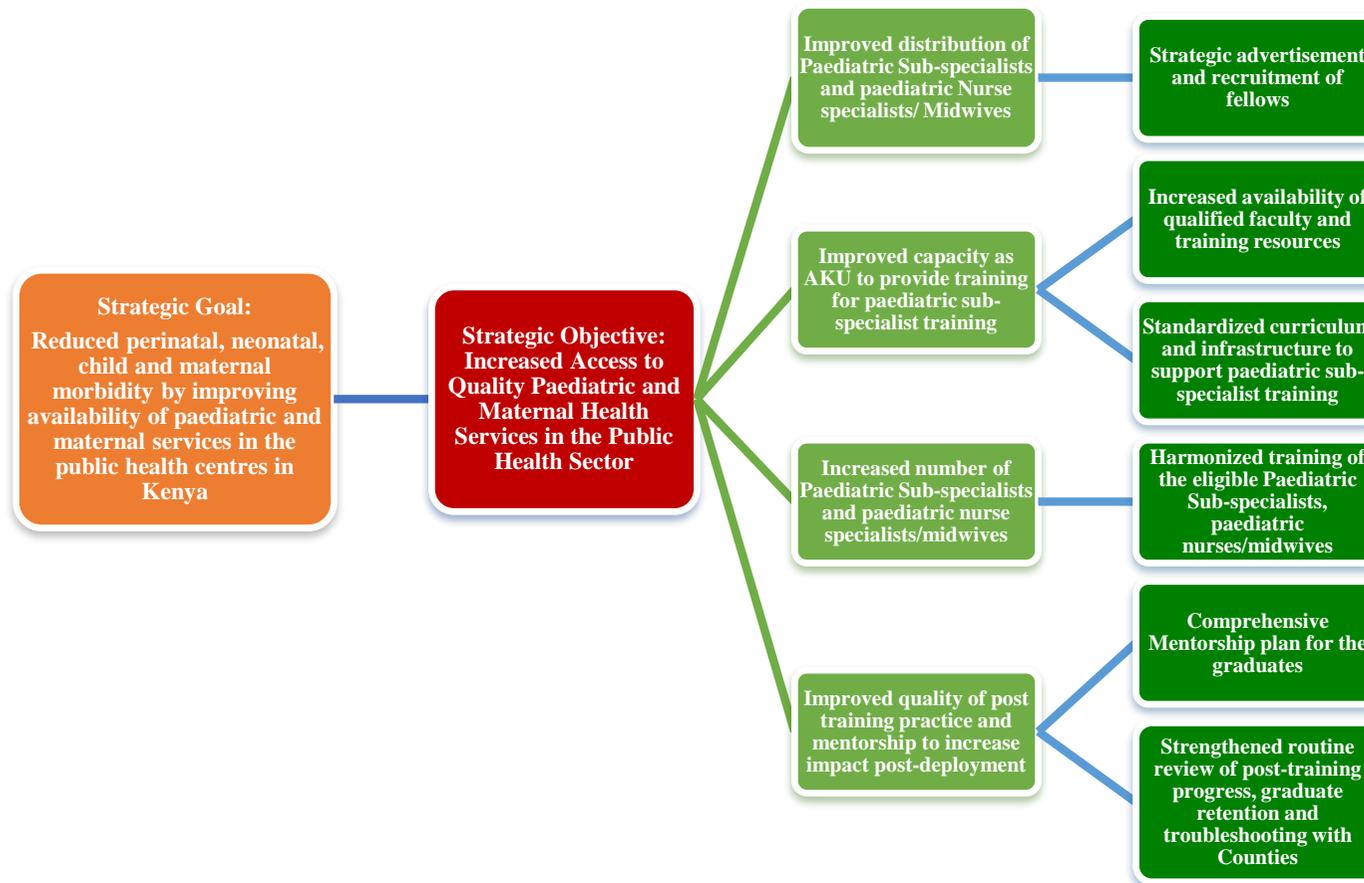
The past year has been phenomenal in terms of achievements and challenges in equal measure. At AKU, we have managed to admit twenty-nine sponsored Bachelor of Science in Nursing Midwifery students five neonatology and four paediatric neurology fellows. Two of the neonatology fellows are supported by the Aga Khan University Hospital and the Kenya defense forces respectively. As a result, we have met the targeted admission of paediatric neurology fellows; with only one slot in midwifery and three slots in neonatology remaining open on the program. Despite the Covid-19 pandemic challenges and restrictions, our programs have remained within the projected timelines. Midwifery students had a smooth transition to online

learning for their theory classes, while the clinical rotations have continued seamlessly. These changes have led to some savings in our logistics budget lines. The commencement of the fellowship program has had a positive impact on the paediatrics residency program with greater support available for clinical work, increased mentorship and shorter wait times for patients who need ambulatory care.

Having been trained through a similar program - Africa Paediatric Fellowship Program (APFP) over a decade ago, I desire to see fellowships within Aga Khan University equip paediatric healthcare workers of different cadres with the much needed sub-specialty skills and then go on to positively contribute to improvements in health outcomes for children in the East African region in a lasting way. We are confident graduates from our programs shall be well prepared to lead desired change in healthcare delivery in their immediate contexts.

Overall, I am grateful to the AKU leadership and in particular project management faculty, and the finance teams, for their commitment to the success of the project. I am also grateful to the entire KPFP consortium and the donors – ELMA Foundation and the Aga Khan Foundation for providing us with this opportunity to improve health related outcomes for children in East Africa and beyond.

1.0 Our Pathway to Impact



The overall KPFP strategic goal is reduced perinatal, neonatal, child and maternal morbidity by improving the availability of paediatric and maternal services in the public health centres in Kenya. In order to achieve the overall KPFP strategic goal and objective, some of the key targets by AKU include improved distribution of paediatric sub-specialists and paediatric nurse specialists (midwives); improved capacity as AKU to provide training for paediatric sub-specialist training; increased number of Paediatric sub-specialists and midwives and improved quality of post-training practice and mentorship to increase impact post-deployment.

Consequently, some of the results that AKU seeks to achieve include: a) Strategic advertisement and recruitment of fellows; b) increased availability of qualified faculty and training resources; c) standardized curriculum and infrastructure; d) harmonized training of eligible paediatric subspecialists and midwives; e) comprehensive mentorship plan for the graduates, and f) strengthened routine review of post-training progress, graduate retention and trouble-shooting with counties.

2.0 Achievements/Milestones

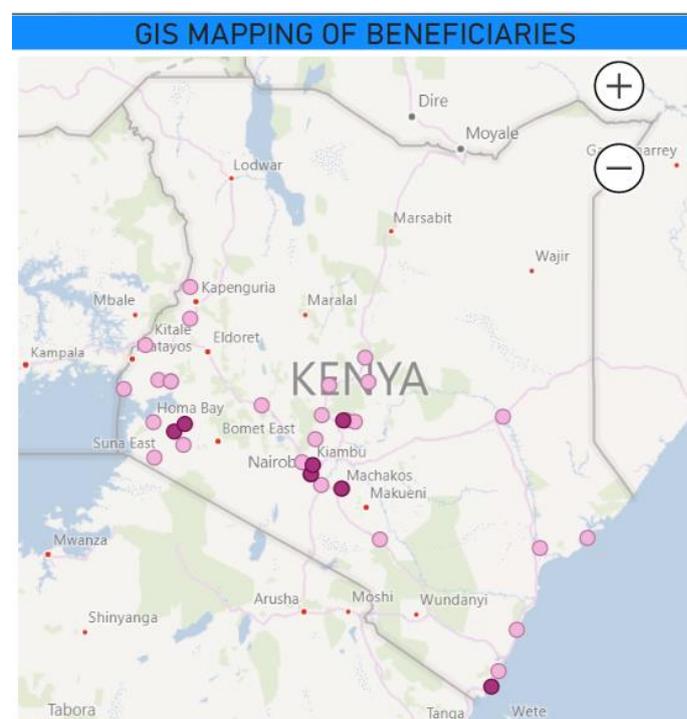
2.1 Program Beneficiaries distribution

Our Program supports three courses namely: Neonatology fellowship, Paediatric Neurology fellowship and Bachelors in Nursing Midwifery. The scholarship program seeks to address the issue of acute shortage and poor distribution of specialised child health care and is implemented in collaboration with the Ministry of Health(MoH), Kenya Paediatric Fellowship Program (KPPF) and other stakeholders.

Out of a target of 40 beneficiaries, AKU has managed to successfully admit 36 distributed as shown below:

Program	Target	Admitted as at June 2021	Deficit
Neonatology	6	3	3
Paediatric Neurology	4	4	0
Nurse Midwifery	30	29	1

One of the objectives of the program is to improve strategic selection and deployment to address inequitable distribution of the child health workforce. In reference to the distribution across counties in Kenya AKU has managed to sponsor sub-specialties distributed across 27 out of 47 counties as shown in figure below:



GIS Mapping of the KPPF beneficiaries at Aga Khan University

2.2 In-training and Mentorship

2.2.1 Paediatric Fellowships

The Paediatric Fellowship program (Paediatric Neurology and the Neonatology) is a two-year competency based sub-specialty program targeting paediatricians.

The first cohort of 5 Paediatric fellows, who joined in April 2020 completed their first year of study in March 2021 and are now in their second year. The second cohort of 2 fellows began their fellowship in January 2021. AKU has also managed to engage two self-sponsored fellows as part of the program.

<i>Paediatric Neurology</i>		
Dr Maureen Njoroge	Kiambu county	<i>KPFP</i>
Dr Nicholas Odera	Nyamira county	<i>KPFP</i>
Dr Peninah Mwangi	Kirinyaga county	<i>KPFP</i>
Dr Dorcas Supa	Machakos county	<i>KPFP</i>
<i>Neonatology</i>		
Dr Christine Manyasi	Nairobi county	<i>KPFP</i>
Dr Edith Mwasi	Kwale county	<i>KPFP</i>
Dr Mourine Ikol	Kisii county	<i>KPFP</i>
Dr Peter Mashep	War Memorial Hospital	<i>Kenya Defence forces</i>
Dr Nikita Jethwa	Aga Khan University Hospital	<i>Aga Khan University Hospital</i>



AKU Neonatology Fellows – From Left to Right – Dr Edith Mwasi, Dr Mourine Ikol, Dr Nikita Jethwa,, Dr Peter Mashep, Dr Christine Manyasi



AKU Paediatric Neurology Fellows - From Left to Right - Dr Nicholas Odero, Dr Maureen Njoroge, Dr Dorcas Supa, Dr Peninah Mwangi

The Neonatology fellows initially conducted their external clinical rotations at Pumwani Maternity Hospital (PMH). However, the exit of the Neonatologist (who was the supervisor) to Kenyatta National Hospital (KNH), necessitated having a Memorandum of Understanding with the University of Nairobi enabling the fellows to practice at KNH. This was actioned and the fellows have successfully begun their rotations at KNH.



Team Visit to Pumwani Maternity Hospital, July 2020

2.2.2 Nursing Midwifery Program

The two-and-a-half-year Bachelor of Science Midwifery programme prepares nurses to provide safe, competent, culturally responsive and quality care at all levels of the health care system, with a focus on reproductive, maternal, new-born and child health for the families and communities by integrating knowledge, skills and attitudes from humanistic, behavioural and natural sciences.

The first cohort of 11 Midwifery program, who started the program in February 2020 are progressing well and have completed their first year. The second cohort of 16 nurses, admitted to the program in October 2020, completed their first semester in February 2021. The third cohort of two nurses joined in February 2021, bringing the total number of midwifery students enrolled in the program to 29. AKU seeks to fill the remaining slot in the next intake.

<i>Bachelor of Science in Midwifery (BScM) – Class of June 2022</i>	
Antony Gitahi	<i>Kiambu county</i>
Consolata Wambui	<i>Nyeri county</i>
Farhiya Hassan Osman	<i>Garissa county</i>
Jackline Muthoni Kiguru	<i>Nakuru county</i>
Kennedy Odhiambo Miyare	<i>Homa Bay county</i>
Lennox Mupe Taura	<i>Kilifi county</i>
Marianna Mwendu	<i>Nairobi county</i>
Moses Kilonzo	<i>Machakos County</i>
Naomi Mwangeli Mutuku	<i>Tana River County</i>
Tabitha Wangui Ruo	<i>Makueni County</i>
Zablon Nyakaru Nyamwea	<i>Kisii County</i>
<i>Bachelor of Science in Midwifery (BScM) – Class of December 2022</i>	
Anne Kavere Kiluma	<i>Vihiga county</i>
Ben Olang’Onoka	<i>Migori county</i>
Benjamin Long’orio Loripo	<i>Isiolo county</i>
Bridgit Nabutilu Wafula	<i>Trans-Nzoia county</i>
Gabriel Silas Okapes	<i>Busia county</i>
Gladys Ayoma Abwao	<i>Siaya county</i>
Glory Mwendwa Kaberia	<i>Meru county</i>
Isaac Ngotho Maina	<i>Murang’a county</i>
Jackline Mongina Mose	<i>Lamu County</i>
Jemimah Wanjiru Karanja	<i>Kirinyaga County</i>
Keziah Wakio Njeru	<i>Embu County</i>
Linda Naliaka Pepela	<i>Kwale County</i>
Mary Chepoghon Tudonyang	<i>West Pokot County</i>
Maureen Labinah Kwatamba	<i>Vihiga County</i>
Michael Muturi Kinga	<i>Laikipia County</i>
Nixton Otieno Osumba	<i>Siaya County</i>
<i>Bachelor of Science in Midwifery (BScM) – Class of June 2023</i>	
Janeth Nyaboke Nyang’au	<i>Kajiado county</i>
Hannah Wanjiru Muchora	<i>Kajiado county</i>



School of Nursing and Midwifery KPFP scholarship recipients



Bsc Midwifery students, Class of June 2022 with one faculty



Bsc. Midwifery students, Class of December 2022 with two faculty



Two Midwifery students, Class of June 2023 with three faculty

3.0 Spotlight on fellows and midwifery students

AKU conducted an evaluation of the Paediatric fellows to understand their motivation, challenges and achievements from the program. Generally, most of them expressed great interest and passion in the sub-specialization. Additionally, it emerged that the county hospitals poor infrastructure and under-resourced county facilities as a main motivation in joining the program. Thankfully, the theory and clinical exposure in the Paediatric fellowship has provided a great learning opportunity so far, and the fellows are enthusiastic of improved skills for greater impact post-deployment.



“My motivation to join the program was born out of my interest in the field of neurology; the conditions, management and outcomes. It also stemmed from the need in my county, given the large numbers we were seeing and the need for knowledge to manage them appropriately.”

(Dr Maureen Njoroge, Paediatric Neurology Fellow, Kiambu county)



“My interest in neurology has developed over time and I was especially motivated to pursue the program since it is being offered locally and fully sponsored. I have a passion in childhood disability and most children with neurological disorders fall under this category.”

(Dr Dorcas Supa, Paediatric Neurology Fellow, Machakos county)



“Approximately 30% of the paediatric patients I attended to had neurological conditions and this inspired me to further my studies in this area. There were gaps in investigation and management of this children due to limited resources. There was no paediatric neurologist in Mt Kenya region making referral of complicated cases challenging.”

(Dr Peninah Mwangi, Paediatric Neurology Fellow, Kirinyaga county)



“Some of the motivating factors to join the programme were to help reduce neonatal mortality at the Kisii County Teaching and Referral Hospital and lack of a neonatologist in the whole of Nyanza region. Additionally, I look forward to mentoring upcoming doctors in the field of paediatrics, pass knowledge in handling neonatal morbidity, and to help in running the upcoming Mother and Baby Unit at the Kisii Teaching and referral hospital.

*(Dr Ikol Mourine, Neonatology Fellow,
Kisii county)*



“I was delighted that finally a local institution is offering this course that is so much needed in our country given the high prevailing burden of neonatal morbidity and mortality. I was recently posted to our National Military Referral Hospital as Chief Paediatrician and we are currently setting up a new facility for new-born care. This is in-keeping with the large number of new-borns we see at the facility and those transferred from our regional facilities for care. This poses new challenges since we do not have a neonatologist and heavily depend on private practitioners who may not be readily available.

*(Dr Peter Mashep, Neonatology Fellow,
Sponsored by the Kenya Defense forces)*



“I have sharpened and gained more skills in neonatal resuscitation, feeding of the newborn which includes total and partial parenteral nutrition; Ventilatory support of the new-born -including choice of ventilation and different modes, follow up on progress and weaning off to other non-invasive forms of ventilation. I have learnt how to minimize complications associated with different ventilatory modes and how to manage the complications if they do happen. I am more conversant with managing the preterm neonate including the extreme preterm. I have learnt and sharpened my knowledge and skills in managing different neonatal conditions in different systemsThis knowledge is invaluable upon re-deployment to my county.”

(Dr Edith Mwasi, Neonatology Fellow, Kwale County)



“My motivation to join the programme was to build my capacity to provide care for children with neurological problems and train other doctors/clinicians in paediatric neurology. So far, I have acquired knowledge on diagnosis and management of paediatric neurological problems; Improved clinical skills in neurology and ability to perform and interpret neuro-diagnostic tests such as EEG; Improved neuroradiology knowledge and as well as Research skills.”

(Dr Nicholas Odera, Paediatric Neurology Fellow, Nyamira County)



“Experiencing and participating in new-born care has helped me recognize some of the aetiologies that increase our early new-born mortality. I am more empowered in making decisions pertaining to appropriate and targeted investigations and appropriate interventions. I have learnt that most of our adverse outcomes can be avoided with correct resource application and timely care I have appreciated the key role played by investigative capacity in any facility, and the role of multidisciplinary approach in long term care of high risk new-borns.”

(Dr Christine Manyasi, Neonatology Fellow, Nairobi County)



“The pathology that I was exposed to at KNH was really great, they have a good number of neonates with different congenital anomalies. There were some challenges faced in terms of the number of ventilators that were available/neonatal ratio and the CPAP machines available/neonatal ratio. The laboratory results took at least 24 hours unlike here we get results in a few hours. Overall, my rotation was well supervised by the neonatologists and was a good learning experience.”

(Dr Nikita Jethwa, Neonatology Fellow, Sponsored by Aga Khan University Hospital)

Two Bsc Midwifery students, Kennedy Miyare and Farhiya Osman from Homabay and Garissa county respectively are positive that the skills gained from the programme will be highly beneficial in reducing the high perinatal, neonatal, child and maternal mortality rates in their counties.



“In Homabay county, there is a high mortality rate girls are being married off when they are very young, some as early as 12. So, when they go to deliver, they get challenges because they are so young, and this contributes to the high mortality rate. I hope to learn how to deal with this challenge scientifically during my studies at AKU so that i can help the young girls in Homa Bay.

(Kennedy Miyare, Bsc Midwifery Student, Homa Bay County)



“I am from Garissa but I represent the entire Northern Frontier because there are no degree-qualified midwives from the other districts. Because of the insecurity, most of our hospitals do not have staff. Most of the people who are not from the Northern Frontier become the target for terrorists, therefore they leave for their safety. Somalis rarely venture into healthcare; therefore, it is very difficult for people in the Northern Frontier to get adequate healthcare.”

(Farhiya Osman, Bsc Midwifery Student, Garissa County)



Midwifery students revising for their exams

In addition to the skill development, two Neurology fellows, Dr Maureen Njoroge and Dr Nicholas Odero have contributed to the body of knowledge in two instances: a) Contribution to the case modules at the [ILAE](#) academy website, and b) Contribution to a [study](#) on *Magnetic Resonance Imaging findings in Childhood Epilepsy at a Tertiary hospital in Kenya*, conducted at the paediatric neurology department of Aga Khan University.



Neurology fellows - Dr Nicholas Odero and Dr Maureen Njoroge with Prof Pauline Samia on their first day at work



The Paediatric Neurology Team - From Left to Right - Prof Pauline Samia, Dr Dorcas Supa, Dr Peninah Mwangi, Dr Nicholas Odero, Dr Maureen Njoroge, Dr Kate Oyieke

Dr Dorcas Supa, a Neurology fellow examining a patient



Neonatology fellows in the Neonatal Intensive Care Unit (NICU)

A successfully treated Neurology patient on the last clinic day



4.0 Impact of Covid-19

With the first Covid-19 case reported in Kenya in March 2020, rapid prevention measures were enacted to minimize the spread of the virus. All training institutions were closed and students were not able to do clinical practice until hospitals were permitted to allow learners in January 2021.

AKU was however determined to ensure that learning continued with Covid-19 protocols in place, the midwifery trainees remained enrolled in the program, and completed their theoretical training on an online platform. Clinical rotations resumed, however, the interruption of normal learning calendar called for adjustments and the first semester of 2020/2021 academic year ended on February 19, 2021 to allow students to cover all the required clinical placements.

The Paediatric neurology and neonatology fellows on the other hand did not face a significant change in their program, and continued with training as scheduled, however due to the high Covid-19 infection rates in Pakistan, the external clinical rotations at Aga Khan University Hospital, Karachi have been put on hold to date.

5.0 What Next?

5.1 Monitoring and Evaluation

The AKU-wide Centre of Excellence in Women and Child Health (CoEWCH) based in Kenya, has been an important resource in providing the Monitoring, Evaluation, Research and Learning (MERL) for the project. The CoEWCH under the leadership of the Director - Prof Marleen Temmerman has been holding collaborative meetings with the Clinton Health Access Initiative (CHAI) and the Kenya Paediatric Association (KPA) to identify the monitoring variables; the fellows in-training and post-training mentorship plans and the overall monitoring and evaluation of the program.

Additionally, the Kenya Paediatric Association and the Clinton Health Access Initiative have been leading the county preparedness assessment exercise across the country to identify the county-preparedness for the re-deployment of the fellows post training. Some of the assessment indicators include the county human-resource, Hospital staffing, department functionality and equipment availability.

5.2 Expansion of AKU target beneficiaries

AKU has done two re-advertisements so far in 2021, in February and May, with no applications in response to the neonatology program. This has resulted in a target-based approach to encourage uptake such as calls to the Paediatricians and informing them of the program and the application process.

Additionally, the Aga Khan University had a successful meeting with Elma Foundation on the 10th May 2021, which led to an agreement on expanding the AKU catchment for recruitment into the paediatric fellowship program. This will now include Paediatricians from academic institutions and faith based facilities in addition to the county employees. Paediatricians practicing in these settings predominantly serve the Kenyan public sector. The proposal stems from challenges of recruitment currently being faced in filling the three remaining neonatology slots. In the long-run, this strategy may also lead to multiple impacts across board and achieve diversity.

6.0 Acknowledgments

The Aga Khan University acknowledges the support accorded to us by the Elma Foundation, the Aga Khan Foundation, the Kenya Paediatric Association and the Clinton Health Access Initiative. Beyond financing, we appreciate the opportunity to consult on a need-basis.



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