

# PACIFIC HEADS OF HEALTH

*Réunion des directeurs de la santé du Pacifique*

SPC/PHD/HOH15

Working paper 10.0

ORIGINAL: ENGLISH

15<sup>th</sup> PACIFIC HEADS OF HEALTH MEETING,  
15-17 April 2024, Apia Samoa

## STRENGTHENING BIOMEDICAL SERVICES IN THE PACIFIC

(Paper presented by the Secretariat)

### At a glance

- Pacific regional biomedical meetings between 2012 and 2023 have highlighted ongoing challenges including inadequate human resources for health, the critical need for service delivery improvements, and equipment maintenance issues.
- Situational analyses conducted in 2014, 2019 and 2023 emphasised the persistence of these challenges, exacerbated by the COVID-19 pandemic's impact on the influx of biomedical equipment without adequate maintenance and repair support.
- The 5<sup>th</sup> Pacific Biomedical Engineering Network (PBEN) convened in May 2023 underscored the neglect of biomedical services, emphasising the urgent need for policy development, IPC support, workforce strengthening, and biomedical waste management.
- Recent progress in biomedical services across the Pacific is evidenced by increased qualifications among staff and notable initiatives in Fiji, Kiribati, Nauru and Samoa, coupled with a significant decade-long increase in the region's biomedical workforce, characterised by a younger demographic and greater female representation.
- Pacific Heads of Health are invited to: - 1) **Ensure** the implementation and enforcement of biomedical policies such as the National Medical Equipment Management Policy and Medical Equipment Donation Policy, to strengthen and control the management of medical equipment in alignment with the needs of health ministries; 2) **Facilitate** training opportunities for biomedical staff, emphasising continuous development programs to keep pace with evolving technology; 3) **Foster** the sharing of biomedical expertise among PICTs to strengthen regional biomedical services, promote capacity building and biomedical training, and retain local biomedical staff; and 4) **Allocate** funding for biomedical test equipment, spare parts, and consumables to strengthen and sustain biomedical services.
- Development partners are invited to: - 1) **Sustain** support for regional biomedical meetings to further strengthen collaboration and partnerships in the Pacific region, both technically and financially; 2) **Provide support** for more certified trainings around the region and 3) **Extend** support for regional biomedical consultancies for PICTs requiring Biomedical Engineering technical assistance.

## CURRENT SITUATION

1. Five Pacific regional biomedical meetings convened between 2012 and 2023 have served as critical platforms for identifying and addressing ongoing challenges within the Pacific healthcare landscape. These convenings have shed light on persistent issues, including the scarcity of human resources for health, particularly in terms of capacity building for biomedical technicians and engineers. Despite concerted efforts, the region continues to grapple with deficiencies in service delivery and the maintenance and repair of biomedical equipment. Situational analyses conducted in 2014, 2019 and 2023 have consistently highlighted these concerns, emphasising the urgent need for intervention and support.
2. The emergence of the COVID-19 pandemic further exacerbated these challenges, triggering a surge in the influx of both donated and procured biomedical equipment to Pacific countries. However, the lack of maintenance and repair service agreements, coupled with insufficient training for the biomedical workforce, has hindered effective management of these resources. Consequently, the region faces heightened pressures to bridge these gaps and ensure the safe and efficient utilisation of vital medical equipment.
3. The 5th Pacific Biomedical Engineering Network (PBEN) meeting convened in May 2023 in Nadi, Fiji, marked a pivotal moment in addressing these issues. Participants from 15 Pacific Island Countries and Territories (PICTs) gathered to collectively tackle the neglect of biomedical services, recognising them as a crucial component of clinical care. Priority recommendations from this convening included the development and implementation of biomedical policies, support for infection, prevention, and control (IPC), workforce strengthening, educational enhancements, and improved biomedical waste disposal practices.
4. Notably, the meeting included a one-day certified training workshop on the Biomedical Electrical Safety Analyzer, which received a lot of positive feedback from participants. In response to its success, it was recommended that similar certified technical training sessions become a regular feature of future PBEN meetings. Building upon these initiatives, the forthcoming 6<sup>th</sup> PBEN scheduled for April 2024 aims to address the recommendations outlined and provide certified training opportunities to further empower the biomed workforce in the Pacific region. Through collaborative efforts and strategic interventions, stakeholders endeavour to enhance healthcare delivery and mitigate the challenges faced in the realm of biomedical engineering across the Pacific.

## FUTURE VISION

6. Over the next decade, our vision for biomedical engineering in the Pacific is one of transformative progress, bolstered by strategic initiatives and collaborative efforts. We envision PICTs embracing and implementing essential biomedical policies, including the National Medical Equipment Management (NMEM) Policy and Medical Equipment Donation (MED) Policy. These policies will not only address current challenges in medical equipment lifecycle management but also ensure genuine and prioritised medical equipment donations, strengthening national biomedical documentation and enabling informed decision-making.
7. Furthermore, we anticipate a surge in the number of qualified biomedical engineers and technicians leading and managing biomedical departments across the region. Governments are poised to incentivise the retention of this specialised workforce through appropriate remuneration, fostering a sustainable and skilled workforce dedicated to advancing healthcare delivery.

8. Central to our vision, is the expansion of certified technical training programs throughout the Pacific, enabling biomedical professionals to continuously enhance their technical skills and adapt to evolving health technology trends globally. By nurturing a trained workforce capable of providing in-house biomedical servicing, we aim to enhance cost-effectiveness and sustainability in healthcare delivery.

9. This vision aligns with broader global and regional goals, including the Sustainable Development Goals. By prioritising the strengthening of biomedical infrastructure and workforce capacity, we aim to contribute significantly to achieving universal health coverage and improving health outcomes for all Pacific communities.

#### EXAMPLES OF RECENT PROGRESS

10. Progress across the Pacific in biomedical workforce qualifications and policies is evident. Notably, there has been a significant rise in formal qualifications among biomedical staff, coupled with a demographic shift towards a younger workforce and a commendable increase in female representation. While challenges persist, such as the need for stronger policy implementation and medical equipment waste management, following the PBEN 2023 meeting and the one-day certified training on the Biomedical Electrical Safety Analyzer, several countries showcase commendable progress:

- a) **Fiji:** Contracted the Medical Room company to facilitate the certified technical training on electrical safety analyzer, extending the opportunity to biomedical staff unable to attend the 2023 PBEN meeting. This initiative aimed to strengthen the capacity of all biomedical personnel in fundamental biomedical test equipment, thereby enhancing the safety of clinical staff and patients using the medical equipment. Additionally, Fiji conducted certified technical training encompassing all biomedical modules in The Medical Room curriculum, benefitting most of its biomedical staff.
- b) **Kiribati:** Acquired an electrical safety analyzer and is now conducting electrical safety tests as an integral component of the acceptance and commissioning process for all new equipment before their deployment for service. The Head of Kiribati Biomed, who attended the 5<sup>th</sup> PBEN, leveraged the training materials received and upskilled all her biomedical staff on this essential test equipment. This exemplifies a “train the trainer” approach and underscores the commitment to in-house continuous professional development within the biomedical team.
- c) **Nauru:** Recognised the biomedical engineering services as an allied health specialty within the medical services department. It was recommended and subsequently approved that the biomedical engineering unit, previously under the Health Operations & Infrastructure section, be under the responsibility of the Director of Medical Services. This restructuring has greatly improved the efficiency of biomedical workflow. Additionally, prior to the PBEN meeting, Nauru lacked specific biomedical policies. However, they have since adapted generic policies provided and are currently in the process of drafting NMEM and MED policies.

- d) **Samoa:** The utilisation of the electrical safety analyzer has been reinforced throughout the full lifecycle of medical equipment, particularly during the corrective maintenance phase. Initially employed for testing new equipment and conducting preventative maintenance, the analyzer is now also used for testing equipment repairs. Additionally, regular documentation audits are in place to verify the quality of the work recorded and updated with the status of medical equipment in service. Furthermore, the biomedical unit has been relocated to a larger workshop, which has greatly improved the workflow efficiency. Each biomedical technician now has a designated workspace, facilitating improved work conduct and organisation efficiency.

#### WHY URGENT ACTION IS NEEDED NOW?

11. Ensuring significant progress on biomedical policies and waste management remains imperative, even amidst the challenges posed by the COVID-19 pandemic, due to its profound implications across the Pacific. The failure to endorse and implement critical policies such as the NMEM and MED policies exacerbates existing challenges. The accumulation of obsolete, underutilised and non-essential donated medical equipment from donors not only strains financial resources for maintenance but also poses significant environmental risks for PICTs. Urgent action is required to address the escalating issue of biomedical waste, which threatens public health and the fragile ecosystems of PICTs.
12. Likewise, the recognition of Biomedical Engineers and Technicians as essential healthcare professionals within clinical services is paramount for enhancing healthcare delivery and resilience. Their expertise in managing biomedical equipment programs, encompassing procurement, commissioning, repair, and service maintenance and decommissioning of biomedical equipment, plays a pivotal role in ensuring the quality and efficiency of healthcare services. However, the lack of formal recognition of Biomed as an essential specialised professional in the clinical services, hampers their involvement in decision-making processes on healthcare technology matters and undermines their contributions to the healthcare sector, particularly during times of crisis such as the pandemic.
13. development of local technicians and exacerbates the loss of skilled personnel in the Pacific region. Investing in certified training programs not only enhances local capacity but also promotes sustainability by reducing reliance on external repair services. By harnessing lessons learned from the COVID-19 pandemic, such as the importance of local expertise and resource optimisation, the Pacific region can develop sustainable solutions to address these pressing challenges in the biomedical field. Emphasising the urgency of action now is crucial to mitigate the adverse consequences of inaction and build a resilient healthcare system that serves the needs of Pacific communities effectively.

## RECOMMENDATIONS TO BE CONSIDERED BY THE HEADS OF HEALTH

14. Considering the pressing need to strengthen biomedical services and infrastructure across the region, the following recommendations outline urgent actions to address critical challenges such as the implementation of biomedical policies, capacity building for biomedical staff, and fostering collaboration among PICTs.

### PACIFIC HEADS OF HEALTH ARE URGED TO PRIORITISE THE FOLLOWING RECOMMENDATIONS:

- 1) **Ensure the implementation and enforcement** of biomedical policies such as the NMEM Policy and MED Policy, to strengthen and control the management of medical equipment in alignment with the needs of health ministries.
- 2) **Facilitate continuous professional development opportunities** for biomedical staff, emphasising continuous development programs to keep pace with evolving technology. This investment is crucial for ensuring the delivery of quality healthcare services.
- 3) **Foster the sharing of biomedical expertise** to PICTs to strengthen regional biomedical services, **promote capacity building** and **biomedical training**, and **retain local biomedical staff**. Contribution in this regard is not only beneficial for knowledge exchange but also contributes to cost effectiveness.
- 4) **Ensure adequate funding** in Ministry of Health's annual workplan for biomedical test equipment, spare parts, and consumables to **strengthen** and **sustain** biomedical services.

## RECOMMENDATIONS TO BE CONSIDERED BY DEVELOPMENT PARTNERS

**Development Partners are encouraged to:**

- 1) **Sustain support** for future biomedical regional activities to further **strengthen collaboration** and **partnerships** in the Pacific region, both technically and financially. These meetings serve as crucial platforms for sharing best practices and fostering cooperation among stakeholders.
  - 2) **Provide support** for continuous professional development (CPD) opportunities for PICTs' biomedical personnel.
  - 3) **Extend support** for biomedical consultancies to member countries requiring Biomedical Engineering technical assistance.
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