

Director of Clinical Services Meeting

Réunion des directeurs des services cliniques

SPC/HEALTH/DCS/Virtual Meeting

Information Paper N° 2

BUILDING A SUSTAINABLE WORKFORCE THROUGH EDUCATION AND LEADERSHIP IN PACIFIC ISLANDS COUNTRIES AND TERRITORIES

16 – 17 August 2023, Time: 12.00-3.00pm FJ Time; virtual meeting

PACIFIC BIOMEDICAL ENGINEERING NETWORK MEETING

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Item N° 8.6

The 5th Pacific Biomedical Network (PBN) meeting was held in May 2023, Fiji with a total of 40 participants including 15 PICT members, partner agencies (DFAT & WHO) and observers attending the 3-day meeting. Day 1 was a certified technical training. The Pacific Community (SPC) presented an updated situational analysis of the biomedical services and workforce over the last 9 years in the Pacific region. Overall, there has been progress in the workforce with increase in biomed numbers including females and more qualified workforce. There are still challenges reported from PICT such as lack of implementation of biomedical policies such as National Medical Equipment Management (NMEM) and donation policy, recognition of biomedical in the clinical services and lack of support for certified professional technical training. Recommendations from the PBN meeting includes more support from government and development partners for the strengthening of the biomedical service and to have more support for biomedical regional meetings and trainings.

1. BACKGROUND

The 5th Pacific Biomedical Network (PBN) meeting was held on the 29th - 31st May 2023 in Nadi, Fiji and attended by 15 participants from Pacific Islands Countries and Territories (PICTs) - American Samoa, Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu. This meeting was facilitated by the Pacific Community (SPC) in collaboration with WHO¹ with funding support from the Australian Department of Foreign Affairs and Trade (DFAT) Vaccine Access and Health Security Initiative (VAHSI) as part of end-to-end support for COVID-19 vaccine roll-out and strengthening routine immunisation programs.

The objectives of this meeting were to provide a platform for member countries to share Biomedical experiences, challenges and strengthen partnerships towards addressing Biomedical priorities in PICTs. There was a one-day certified training workshop on the Biomedical Electrical Safety Analyzer which promoted capacity building for the 24 participants. The two-day meeting which followed had each member country present and discuss specific issues, challenges and possible solutions relating to the Biomedical engineering field in their respective countries.

2. PROGRESS AND ACHIEVEMENTS

2.1. Biomedical Workforce

SPC presented a situational analysis of the Biomed from 16 PICTs after collating responses from the member countries before the PBN meeting. The comparative situational analysis was made with results acquired from previous surveys conducted in 2014 and 2019. The key findings show that there is a significant increase of biomedical staff across the Pacific region with 94% of Pacific Islands nationals. There has also been an increase in female workforce from 8% to 17%, which was also evident with the increase of female participants at the PBN meeting. It was also reported that there is a younger biomedical workforce with 66% below the age of 40 years. Another achievement for the biomed in the Pacific region was an overall shift of biomedical workforce to formal qualifications from 61% to 83% in 16 PICTs, and 21% are those with bachelor's degree qualifications. This aligns with responses from 13 out of 16 PICTs conducting more than 50% of biomedical services in-house rather than outsourcing the biomedical work.

2.2. Biomedical Policies

The situational analysis surveyed on the progress of three biomedical policies introduced in 2014. The National Medical Equipment Management (NMEM) Policy discusses the overall management of medical

¹World Health Organization

equipment lifecycle from procurement stage to the disposal stage. It was recorded that 56% of the countries have progressed with the policy since 2014 but only 24% of PICTs already implementing the NMEM policy. A generic NMEM policy was shared during the PBN meeting to discuss the importance of this policy for the development of biomedical services and to further assist the progression of this policy from planning to the implementation stage for some of the PICTs.

The situational analysis also reported that the National Equipment Committee or equivalent committee exists in only 47% of the PICTs surveyed. This committee is responsible for all medical equipment related matters and refers their recommendations and decisions to the hospital administrators. Only 25% of the PICTs have progressed with having an existing and active committee. The third biomedical policy discussed was the biomedical procedure manual which provides an overview of the standards and procedures that the biomedical unit should follow for their daily biomedical work duties. Overall, 50% of PICTs are progressing through the stages to implementing the procedural manual, with only 35% of PICTs having implemented this procedure manual.

3. CHALLENGES

3.1. Implementation of Biomedical Policy & Biomedical Waste Management

A common challenge faced across the PICTs was the lack of endorsement and implementation of the NMEM policy and the Medical Equipment Donation Policy. One of the major issues arising from the lack of implementation of these two main policies was the build-up of obsolete, underutilised and non-essential donated medical equipment from donors on the islands. It not only has a negative financial impact on maintenance but also poses an environmental risk for the PICTs. A generic medical equipment donation policy was disseminated and further discussed in the PBN meeting for each member country to discuss with their health administrators on way forward in implementing this important policy.

3.2. Recognition of Biomedical Engineers & Technicians as a Healthcare Professional

The PBN meeting also highlighted that Biomed is not recognized as an essential professional in the clinical services. It was reported that most PICTs do not have Biomed as stakeholders in relevant committees and, more often, not part of the decision making with healthcare technology matters. The healthcare technology needs to interact and balance with medical and surgical procedures, consumable supplies, facilities, and infrastructure; where the complex whole enables the provision of health services required.

3.3. Continuous professional certified biomedical training

One of the challenges discussed in the PBN meeting was the lack of certified biomedical training available for PICTs. This would encourage continuous professional development among the local technicians and help upskill and retain biomedical personnel in the Pacific region. Furthermore, this would be more economical in the long run to conduct repairs in-house rather than sending equipment back to manufacturers or outsourcing to overseas visiting engineers.

The biomedical engineering role is crucial in realising the strategic objective of the biomedical services in overseeing the management of the biomedical equipment management program in the public sector which includes procurement, commissioning, repair, and service maintenance and decommissioning of the biomedical equipment.

3.4. Budget allocation for Medical Equipment Spare Parts and Accessories

One of the main obstacles faced by PICTs is the policies and procedures that lead to challenges in obtaining budget and equipment in a timely and efficient manner for procurement of essential medical equipment, spare parts, servicing and supplies. This has a negative impact on the effectiveness of the biomedical service which causes an interruption to the overall the healthcare service provision.

4. FUTURE DIRECTIONS

4.1. Recommendations for governments:

1. There is a need for engagement and support from political leaders to ensure that relevant policies are in place and enforced such as National Medical Equipment Management (NMEM) Policy and Donation Policy, to strengthen and control the management of medical equipment that aligns to the needs of health ministries.
2. For PICTs governments to have awareness programmes within their countries of the biomedical engineering field and have biomedical units take part in career expositions, high school or tertiary information days.
3. PICTs governments to support training opportunities for biomedical staff and can be regionalized to allow maximum benefit to all. To accommodate for constantly changing technology, these trainings

need to be adapted as continuous development programs for effective quality healthcare service provision.

4. Encourage memorandum of understanding (MOUs) between governments to allow sharing of biomedical expertise, resources and information between PICTs. This will allow utilising biomedical professional expertise and developing other biomedical services within the region while retaining their local biomedical staff. This will also promote capacity building and biomedical training in other island countries.
5. To have sufficient budget allocation for biomedical test equipment, spare parts and consumables to strengthen the biomedical services.

4.2. Recommendations for development partners:

1. Financially support more biomed regional meetings which will further strengthen collaboration and partnerships of biomed in the Pacific region.
2. Recommend to fund more certified and continuous training program for the biomed staff in the Pacific region, either short-term or long-term training, in-house or overseas. Advocate for governments to support biomedical engineers and technicians to attend these training sponsored by development partners.
3. Support governments to fund locums and consultants for PICTs requiring Biomedical Engineering assistance.

ANNEX

FINAL PBN KEY POINTS & RECOMMENDATIONS

Session 2:

Network

- Use of Regional Biomedical network to gain advocacy, advice and technical assistance in below areas:

Procurement

- Policies and procedures lead to challenges in obtaining budget and equipment in a timely and efficient manner for procurement of equipment, servicing and supplies.
- Biomedical staff and clinicians to collaborate on, and better inform, the planning and specifications for equipment for sustainable procurement.
- Service contracts and consumables for equipment should be incorporated into national budgets for sustainability.

Biomedical Waste Disposal

- Collaboration with stakeholders including government agencies (Environment and Finance); regional organisations (SPREP), and private sector (waste and transport companies) to ensure disposal is done in cost-effective ways that reduce carbon footprint and environmental impact.
- Need for legal frameworks and procurement policies which enforce greater responsibility of suppliers for ongoing servicing, support, and disposal (linked to procurement processes above).

Donation Policy

- Engagement and support from political leaders to ensure that donation policies and procedures are followed so that procurement and disposal aligns to needs of MoH.
- Biomed involvement should be from the beginning of the donation process and have priority list of medical equipment needs (standardization)
- Build-up of donated medical equipment causing workspace and storage issue in many PICT

Session 3

Capacity building:

- Increased professional development opportunities – regionalisation of training, education and capacity-building including development of regional plan.
- Importance of face-to-face **certified** training (like The Medical Room) and building capacity for maintenance and servicing at a national level, supported by SPC, development partners and training organisations.
- COVID-19 and Capacity-Building: Maximise on the online and remote support developed during COVID-19 pandemic to provide more consistent and timely support to technicians in-country.
- Research Dissemination: Sharing of learnings and recommendations for information of other PICTs.

Session 4

Professional Development & On-going Training:

- Introduction of Fiji National University's Certificate in Biomedical Engineering (Level 4) – 2-year programme.
 - First year with 4 quarters of 8 weeks of teaching and the second year of industry attachment (either in Fiji or home country)
 - Suggestion for re-evaluation of theoretical aspects of the courses against the practical skills required in biomedical sector.
 - Recommendations for building the biomedical career pathway i.e., suggestion for offering Diploma level Biomedical Engineering Programme
 - Great support and interest shown by the Pacific into the Fiji National University's Certificate in Biomedical Engineering (Level 4) Programme.
- Documentation of Biomed Work for sustainability:
 - Asset registry and management systems as essential.
 - Continuous professional development within the biomed unit
- Acquiring bachelor's degree in electrical and application to biomed work back in PICT.
- Exchange partnership programs between PICTs for training, mentoring and workforce coverage.
- Attachment with Australian Hospitals
- Recommends to SPC and countries to explore the opportunity to draft legislations specifically for Biomedical Engineering and BMEQ pertaining to the training, development, career pathways, safeguard, protection, certification, and registration of the profession in the region and within country context.
- With WHO/SPC/DFAT and other partners, these will be of interest. Explores pooled procurement/leasing of like high-end BMEQ for Digital radiology, laboratory, endoscopy

Session 5

Situational Analysis of Biomedical Services in the Pacific

Workforce:

- Increasing number of biomedical staff across the region
- 94% of local biomedical staff working in country, 4% Expats from PICT and only 2% of Expat (other – (Philippines & Australia).
- Higher representation of women (from 8% in 2014 to 17% in 2023)
- Younger workforce - (66% currently employed are <40 years)
- Major shift of workforce from no formal qualifications to certificate/diploma level qualifications
- Higher number of those with Bachelor's degree qualifications (increase to 62%)

Overall Biomedical Situation

- Overall gradual development of national policies and systems
- Dependent on availability and capacity of national staff

In 2023 - Largest attendance group with new countries attending from American Samoa, Niue & PNG (16 countries response but FSM could not attend because of the Typhoon)

Research

- Endorsement to publish regional biomedical data analyses and research.
- Results and findings of to be shared amongst the network and distributed more widely (including research publication and dissemination in forums where appropriate and beneficial), to better

understand regional and country-specific status of biomedical services and apply learnings and recommendations that address the specific needs and challenges of the region.

Session 6

Biomedical Policies

- National Medical Equipment Policy & Donation Policy are important and PICT countries are encouraged to approve and implement these policies to further progress and assist their biomed unit.
- Many PICTs raised concerns that the delay of the endorsement and implementation is at administrators' level and request for SPC to assist in progressing it along
- The two generic policies were discussed in group work and suggestions made will be incorporated into the final draft before dissemination for each country to use. One of these was to include IPC as it should be a key component in the biomed work.

Session 7

Maintenance & On-going Support

- Preventative maintenance is essential in prolonging the lifespan of the medical equipment. However, most of the PICTs do not have test equipment like the electrical safety analyzer. Recommend for countries to procure this essential test equipment
- General consensus is that biomed is responsible for more work outside of the scope of their job description which delays the progression of biomed unit. Discussion of responsibilities lines of demarcations should be made with other stakeholders in the hospital for the biomed to solely focus on medical equipment related matters

Session 8

Terms of Reference

- Name change– Pacific Biomedical Engineering Network
 - To differentiate from the biomedical scientist however, this network includes biomedical engineers and technicians.
 - Discussed the responsibilities and agreed to have a meeting every 2 years.
 - Further discussions will be made within the group to have a biomedical technical committee.
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