# JOB DESCRIPTION

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|---|---|
| Job Title: | **Biomedical Engineer** |
| Division/Programme | Public Health Division |
| Location | **Funafuti, Tuvalu** |
| Reporting to: | Team Leader, Clinical Services Programme |
| Number of Direct Reports | **0** |
| Purpose of Role: | To lead and provide technical assistance in biomedical services to support patient diagnosis and treatment by installing, testing, calibrating and repairing biomedical equipment; training users; maintaining safe operations, and making recommendations on possible additional equipment |
| Date: | September 2024 |

## Organisational Context and Organisation Chart

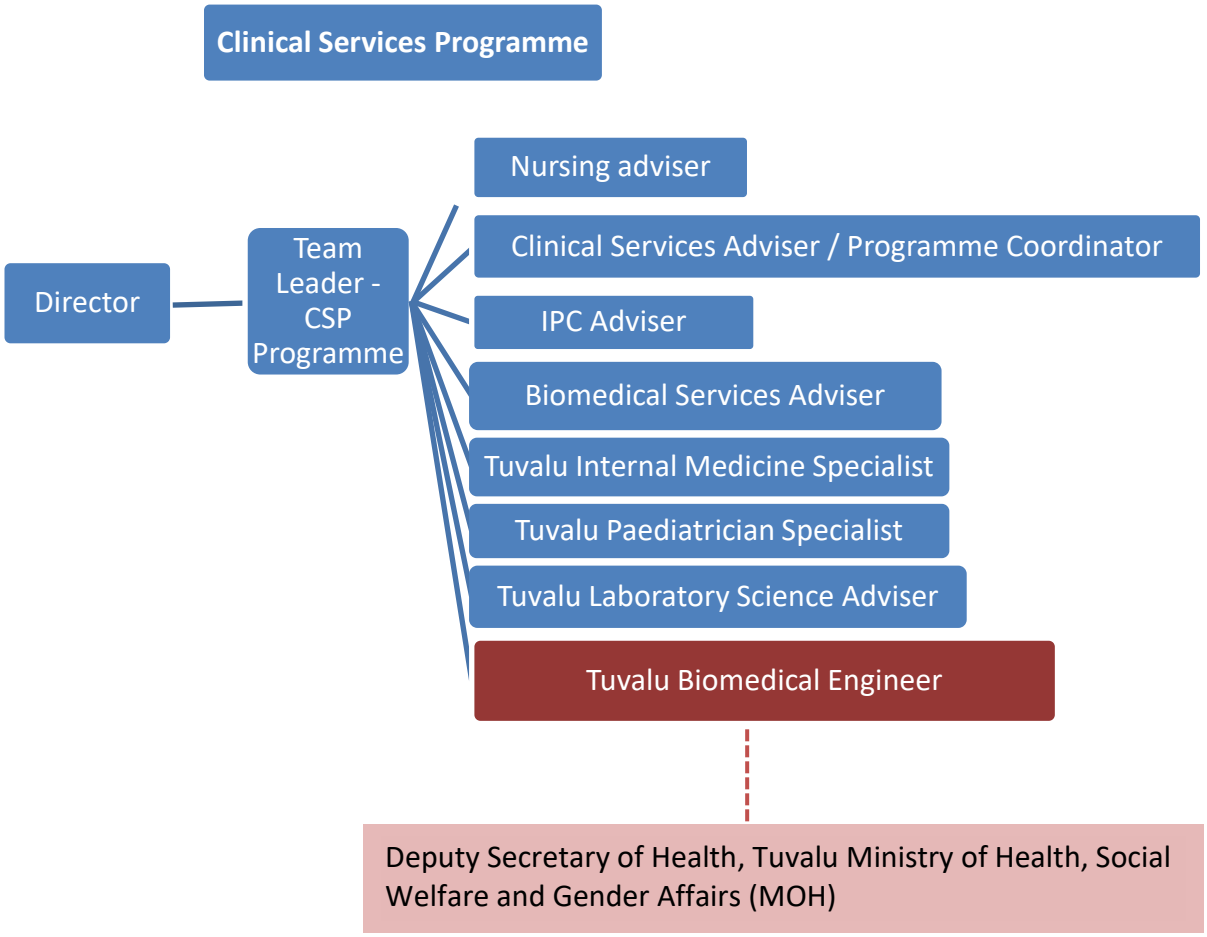
SPC is the principal scientific and technical organisation in the Pacific region, proudly supporting development since 1947. We are an international development organisation owned and governed by our 27 country and territory members. We work for the well-being of Pacific people through the effective and innovative application of science and knowledge, guided by a deep understanding of Pacific Island contexts and cultures. (https://www.spc.int/).

The Public Health Division (PHD) employs around 32 staff based in Noumea, New Caledonia and Suva, Fiji. It supports member countries in attaining healthier Pacific Island people and communities by helping in public health surveillance, prevention and control of communicable and non-communicable diseases and support for clinical services. The primary goal for all PHD activities is to promote population health and well-being, prevent disease and injury, restore, and/or maintain health and reduce inequalities in health. The PHD is comprised of three programmes: Surveillance, Preparedness and Response Programme (SPRP), NCD Prevention and Control Programme (NCDPCP) and Clinical Services Programme (CSP).

The position is within the Clinical Services Programme and will be based at the Princess Margaret hospital (PMH), Ministry of Health, Social Welfare and Gender Affairs (MOH), Funafuti, Tuvalu. During COVID-19, this position was critical to assisting with preparing essential biomedical equipment for reopening and managing the outbreak. The Ministry of Health in Tuvalu has sought further extension of this position, to support the Princess Margaret Hospital strengthen maintenance of its biomedical equipment and train local biomedical technicians.

The main responsibilities for the Biomedical Engineer, Tuvalu will be to work within and across the Tuvalu Ministry of Health Princess Margaret Hospital Biomedical Team, in partnership with the lead Biomedical Technician to support patient diagnosis and treatment by installing, testing, calibrating and repairing

biomedical equipment; training users; maintaining safe operations, and making recommendations on possible additional equipment that could be helpful to meet the host government's intended clinical service level standard.




**Key Result Areas (KRAs):**

The position encompasses the following major functions or Key Result Areas (KRAs):

- Training and Capacity Building
- Improve biomedical quality and standards
- Strengthened staffing and budgeting in work unit
- Data and evidence
- Programme planning and Management

***The requirements in the above Key Result Areas (KRAs) are broadly identified below.***

| **Jobholder is accountable for** | ***Jobholder is successful when*** |
|---|---|
| **KRA 1. Strengthen Capacity Building and Training (30%)** | |
| • Develop training plans for each biomedical team staff member tailored to individual needs<br>• Provide on-the-job training and mentoring to meet identified training needs and record training provided (including competencies achieved)<br>  ○ Identify candidates and opportunities for | • Training plans developed and aligned to staff needs<br>• Training needs are met for on the job training and mentoring<br>• Candidates for biomedical opportunities are identified and mentored<br>• Healthcare staff users are equipped and have the |

| Jobholder is accountable for | *Jobholder is successful when* |
|---|---|
| further formal biomedical technical or academic training.<br>• Provide demonstrations to users (healthcare staff) in use and care of equipment and answer questions where possible, or seek external assistance e.g. supplier, SPC.<br>  ○ Establish and setup regular times for refresher training for doctors and nurses twice a month on equipment operation, care and maintenance and also in systems for management of equipment.<br>  ○ Implement training options for staff who may not attending regular training opportunities.<br>• Promote awareness and interest in the field of biomedical engineer career through attending Tuvalu career fair and seek teaching opportunity at the two high schools (Funafuti and Vaitupu) and one middle school in Tuvalu or other opportunities. | knowledge in the use and care of biomedical equipment<br>• Refresher trainings conducted for operation of equipment, care and maintenance, and systems management.<br>• Training options provided for staff that need regular follow up<br>• Career seeking opportunities undertaken with high schools in Tuvalu to promote awareness and interest in biomedical engineering |
| **KRA 2. Improve Biomedical Quality and Standards (20%)** | |
| • Develop, maintain, and upgrade the medical equipment asset registry from excel to a simple database at the national level for each specific hospital: Princess Margaret hospital (tertiary hospital) and 9 health clinics (Niutao, Nui, Nukulaelae, Nukufetau, Vaitupu, Nanumea, Nanumaga, Nukulakita).<br>• Make recommendations about test equipment resources required for the biomedical maintenance and repair team which is essential for acceptance testing and APM.<br>  ○ Utilise procurement channels and regional resources (e.g. SPC) to meet these needs.<br>  ○ Develop appropriate procedures and protocols for verification and maintenance of medical equipment when required testing equipment is not available.<br>• Introduce the acceptance policy and monitor and encourage full implementation of procedures for accepting, installing and recording to ensure equipment meets safety standards and clinical requirements.<br>• Develop and implement a medical equipment Management Plan to manage all the equipment at the possession of the MOH Tuvalu.<br>• Develop additional Policies that may be required, such as decommissioning of medical equipment at end of life.<br>• Identify and establish a pool of medical equipment suppliers for easy access to spare parts and important consumables. | • Medical equipment asset registry is updated at PMH and in all health facilities<br>• Recommendation developed for test equipment resources<br>• Procurement processes followed and aligned to equipment resources needs.<br>• Appropriate procedures and protocols developed and reviewed as required for testing equipment.<br>• Acceptance policy is introduced, user monitored and procedures implemented to accepting, installing and recording to ensure equipment meets safety standards and clinical requirements.<br>• Medical equipment Management Plan is developed and implemented to manage all the equipment at the possession of the MOH Tuvalu.<br>• Additional Policies are developed as needed such as decommissioning of medical equipment at end of life.<br>• A pool of medical equipment suppliers is established for easy access to spare parts and important consumables.<br>• There is scheduled maintenance of equipment with a contracted external provider service recommended where relevant including recommendations for any new service contracts and evaluation of current service contracts.<br>• There is review and follow up with suppliers/vendors (where agreed by the Ministry of Health) on any faults/discrepancies that occur during the warranty period.<br>• Equipment performance is improved, and in |

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|---|---|
| • Complete scheduled maintenance or recommend a contracted external provider service where relevant. Make recommendations for any new service contracts and evaluate current service contracts.<br>• Review and follow up with suppliers/vendors (where agreed by the Ministry of Health) on any faults/discrepancies that occur during the warranty period.<br>• Improve equipment performance, conferring with equipment users, developing small modifications that do not affect the designed parameters or performance of the equipment. Collaborate with manufacturers on recall defect notices and actions.<br>• Assist with maintaining supplies of consumables for biomedical equipment by making an inventory, checking stock, anticipating needs, making recommendations to procurement teams about ordering stock, and verifying receipt.<br>• Develop a standardized list of medical equipment suitable for each area of the hospital and for health clinics in Tuvalu. | conferment with equipment users, in development of small modifications that do not affect the designed parameters or performance of the equipment.<br>• there is collaboration with manufacturers on recall defect notices and actions.<br>• Inventory is developed to assist with maintaining supplies of consumables for biomedical equipment, anticipating needs, making recommendations to procurement teams about ordering stock, and verifying receipt.<br>• A standardized list of medical equipment suitable for each area of the hospital and for health clinics in Tuvalu is developed. |
| **KRA 3. Strengthened staffing and budgeting in work unit (20%)** | |
| • Develop and implement a medical equipment replacement plan policy for Tuvalu and to assist in the budget proposal.<br>• Follow up the TOR for Medical Equipment Committee that has been developed to be endorsed by management level and ensure that this meeting is held once every quarter.<br>• Make recommendations about any proposed procurements and assist the Ministry towards achieving sound financial management of its medical assets and progressing towards developing a Capital Expenditure (CAPEX) budget each financial year for the replacement of old and required new equipment.<br>• Encourage the recruitment of new biomedical engineering technician and assist in identifying and selecting candidates. | • Medical equipment replacement plan policy for Tuvalu is developed and implemented to assist in the budget proposal.<br>• TOR for Medical Equipment Committee is endorsed by management level, with meetings held once every quarter.<br>• Proposed procurements to assist the Ministry towards achieving sound financial management of its medical assets and progressing towards developing a Capital Expenditure (CAPEX) budget each financial year for the replacement of old and required new equipment is successful and recommendations are implemented.<br>• There is recruitment of new biomedical engineering technician, with assistance provided in identifying and selecting candidates. |
| **KRA 4: Data and Evidence (20%)** | |
| • Develop methods to extract and analyse data from the asset register to show progress such as:<br>o Timeliness and completeness of APM<br>o Time taken to inspect and resolve equipment faults.<br>o Understand frequent faults and feedback to training where relevant<br>• Extract data from the staff training and competencies database to show progress and enable the planning of future training. | • Data is analysed and extracted<br>• Progress data is demonstrated in equipment maintenance, and repair<br>• Data is analysed to demonstrate and to show evidence of progress of biomedical staff training and knowledge and identify gaps for future training. |
| **KRA 5: Programme Planning and Management (10%)** | |

| Jobholder is accountable for | *Jobholder is successful when* |
|---|---|
| • Facilitate annual workplan and budget in biomedical services delivery<br>• Prepare and submit monthly biomedical reports to Tuvalu MOH and SPC, including trip reports and workshop report<br>• Perform any other tasks as required by in country supervisor and SPC. | • Biomedical annual workplan and budget completed<br>• Monthly biomedical reports compiled and reported, including trip reports and workshop report<br>• Other tasks performed as required by in country supervisor and SPC. |

**Note**

The above performance standards are provided as a guide only. The precise performance measures for this position will need further discussion between the jobholder and supervisor as part of the performance development process.

## Most Challenging Duties Typically Undertaken (Complexity):

- Ability to lead, manage and facilitate in country biomedical service delivery including biomedical meetings, trainings, capacity building of local staff
- Ability to provide policy advice and guidance in relation to development and strengthening of biomedical services for Tuvalu.
- Possess strong communication skills for briefings, presentations, training and workshops.
- Has strong writing and analytical skills for development of reports, biomedical briefing papers and strategic communications, including annual work planning and budgeting activities.
- Developing a good working relationship with in-country counterparts and ensuring participation of countries in biomedical regional programmes.
- Implementing activities as and when required by in country supervisor and SPC – Director PHD, CSP Team Leader

## Functional Relationships & Relationship Skills:

| Key internal and/or external contacts | Nature of the contact most typical |
|---|---|
| **External** | |
| • Tuvalu MOH Minister of Health, Secretary of Health, Deputy Secretary of Health, (Acting) Medical Superintendent<br>• In country biomedical stakeholders e.g. government procurement, local suppliers, NGOs<br>• PICT MOHs, technical working groups, counterparts and key implementing partners<br>• Regional bodies and technical working groups<br>• General public | • Requesting and providing information, providing training and advice, resolving conflicts, explaining, gaining cooperation<br>• Coordination of communication and activities with relevant bodies/Ministries etc |
| **Internal** | |
| • PHD Director, Deputy Director, Team Leaders and Advisers and PHD staff<br>• Colleagues and Teams across SPC technical divisions<br>• Crosscutting and taskforce teams<br>• Section's Managers and staff of the Operations and Management Division, especially in ICT, translation, interpretation and publication services | • Facilitating, giving and receiving information, resolving minor conflicts, advising, explaining, gaining cooperation and cooperating<br>• Coordination |

## Level of Delegation:

Routine Expenditure Budget: *0 EUR*

Budget Sign off Authority without requiring approval from direct supervisor: *0 EUR*

## Personal Specification:

*This section is designed to capture the expertise required for the role at the 100% fully effective level. (This does not necessarily reflect what the current position holder has.) This may be a combination of knowledge / experience, qualifications or equivalent level of learning through experience or key skills, attributes or job specific competencies.*

**Qualifications**

| Essential: | Desirable: |
|---|---|
| • Degree in Biomedical Engineering or health related discipline | • Master in Engineering or related discipline |

**Knowledge / Experience**

| Essential: | Desirable: |
|---|---|
| • At least 8 years of work experience in biomedical services in the Pacific.<br>• Significant experience in managing and/or leading biomedical services and knowledge of health systems strengthening.<br>  ○ Quality assurance of equipment<br>  ○ Standardisation of equipment<br>• Significant experience in procurement and donation policies<br>• Advanced written and oral communication skills in English<br>• Demonstrated extensive work experience in biomedical services planning and development, policies and programming.<br>• Demonstrated ability to implement a sector-wide response to biomedical services issues<br>• Willingness to travel and conduct biomedical services to outer islands | • Understanding of Pacific cultures<br>• Experience in working in the Pacific Region Familiarity with government and NGO systems among PICTs<br>• Leadership and managerial experience in biomedical services |

**Key Skills /Attributes / Job Specific Competencies**

The position would typically need to have the following levels in relation to the skills/attributes/competencies listed in the table below to be considered 100% 'fully effective'.

| Levels | Skills/attributes/competencies |
|---|---|
| Expert level | • Professional skills – developing and implementing appropriate biomedical services programs at different levels (regional, national and community levels)<br>• Assessment of biomedical services programmes and determination of in-country needs |

| | |
|---|---|
| | • Mentoring skills – effective mentoring to provide technical support to multi-sectoral stakeholders<br>• Written and spoken English<br>• Developing and evaluating biomedical services policies and programmes<br>• Setting priorities with minimal supervision |
| Advanced level | • Advocacy skills – strong advocacy skills to engage effectively at different level<br>• Ability to promote evidence based best practice for biomedical clinical Services<br>• Interpersonal skills – ability to work with a diverse team |
| Working Knowledge | • Project management<br>• Principles of development effectiveness<br>• Development of funding applications and research protocols |
| Awareness | • SPC Regulations and Policies<br>• Goals and mandates of member countries, partner agencies and organizations |

**Key Behaviours**

*All employees are measured against the following **Key Behaviours** as part of Performance Development:*

- Change and Innovation
- Interpersonal Skills
- Teamwork
- Promotion of Equity and Equality
- Judgement
- Building Individual Capacity

**Personal Attributes**

- Ability to engage and motivate people
- Clear and effective communicator
- Ability to think creatively and solve problems
- Ability to sum up the situation and make decisions quickly if required
- Able to handle high pressure, high workload environments

**Change to Job Description:**

From time to time it may be necessary to consider changes in the job description in response to the changing nature of our work environment – including technological requirements or statutory changes. Such change may be initiated as necessary by SPC. This Job Description may be reviewed as part of the preparation for performance planning for the annual performance cycle.