

NORTH WEST REGIONAL HEALTH AUTHORITY
SPECIFIC PROCUREMENT NOTICE
REQUEST FOR CURRICULA VITAE
CONSULTANCY FOR CHIEF MEDICAL PHYSICIST

Institution: Inter-American Development Bank
Country: Trinidad and Tobago
Project: Health Services Support Program
Sector: Public Sector
Abstract: Chief Medical Physicist Consultancy
Loan No.: 3411/OC-TT
Deadline: November 8th 2018

The Government of the Republic of Trinidad and Tobago has received financing from the Inter-American Development Bank (IDB) for the Health Services Support Program (HSSP) and intends to apply part of the proceeds towards consultancy services of a Chief Medical Physicist.

The consultancy services ("the Services") include the provision of technical expertise during the implementation of HSSP project activities for:

1. Clinical leadership to ensure effective, efficient and safe operation of all radiation therapy treatment, imaging and dosimetry equipment Updating the Biomedical Engineering Standard Procedures Manual
2. Clinical leadership and management of the Medical Physics Department at the National Radiotherapy Centre (NRC)
3. Quality Assurance and Safety at the facility for patients, staff and visitors with respect to radiation safety and protection
4. Technical expert advice on Radiation Protection and Safety
5. The development of relevant policy and standard operating procedures (SOP) as it relates to medical physics and clinical radiologic applications at the NRC
6. Human resource development, technical skills enhancement and capacity strengthening of the professional staff of the Medical Physics Department.

The North West Regional Health Authority (NWRHA) on behalf of the Ministry of Health now invites eligible individuals ("Consultants") (not firms) to indicate their interest in providing the Services. Interested Consultants should provide their curriculum vitae complete with information demonstrating that they possess the required qualifications and relevant experience to perform the Services.

This consultancy opportunity is open to all eligible bidders as defined in the policies which can be accessed at website: <http://www.iadb.org/procurement>. Consultants will be selected in accordance with the procedures set out in the Inter-American Development Bank: Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank GN-2350- 9 and is open to all eligible bidders as defined in the policies.

The Terms of Reference for this engagement may be viewed at www.health.gov.tt or www.nwrha.co.tt.

Further information can be obtained at the address below during office hours Monday – Friday, 8:00 am to 4:00 pm. Two (2) copies of your Curricula vitae can be deposited in person in the Tender Box located at the address below or by e-mail by 1:00 pm (local time) **November 8th 2018**.

Application for Chief Medical Physicist Consultancy

Attention: Mrs. Ria Ganpath - Ghany - Tenders Manager
Tenders Department, North West Regional Health Authority
Head Office, 39 Dundonald Street, Port of Spain, Trinidad
Tel: 1 (868) 627-2874
E-mail: NWRHA.tenders@nwrha.gov.tt

The deadline date for the submission of Curricula vitae is November 8th 2018.



Government of the Republic of Trinidad and Tobago

Ministry of Health

TERMS OF REFERENCE

INDIVIDUAL CONSULTANT - CHIEF MEDICAL PHYSICIST FOR THE NATIONAL RADIOTHERAPY CENTRE - NORTH WEST REGIONAL HEALTH AUTHORITY GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

1. BACKGROUND

The National Radiotherapy Centre (NRC), located at the St. James Medical Complex, is the first public cancer treatment facility to operate in Trinidad and Tobago. The delivery of services by the Centre currently falls under the purview of the North West Regional Health Authority (NWRHA). At present the NRC is the major cancer treatment centre in the country with over twelve hundred new patients each year. The Centre provides comprehensive cancer treatment, care and support services to all public cancer patients in Trinidad and Tobago, including: Radiation Therapy (RT); Chemotherapy; Oncologic Surgery (Breast and Gynaecological cancers); Palliative Medicine; Pharmacy Services; Diagnostic Imaging; Dietetic and Nutrition; as well as Social Work, Counselling and Support Group services.

The Radiation Therapy Department at the NRC has four (4) treatment vaults housing one (1) Cobalt 60 Teletherapy Unit, a dedicated CT Stimulator (GE Lightspeed RT16), an Orthovoltage Treatment Unit, a High Dose Rate (HDR) Brachytherapy remote afterloader and Digital X-ray Unit.

The Ministry of Health (Client) is in search of a qualified and competent individual consultant to serve in the capacity of Chief Medical Physicist (the Consultant) at the National Radiotherapy Centre (NRC), North West Regional Health Authority (NWRHA) for a period of three (3) years.

2. OBJECTIVE OF THE CONSULTANCY

The objective of the consultancy is to provide complementary technical support to advance the technological advancement and cancer treatment modernization process of the National Radiotherapy Centre (NRC), facilitated through installation and commissioning of a new Varian VitalBeam Dual-Energy Linear Accelerator (LINAC). Specifically, the consultancy would:

- a. Manage the operations of the Medical Physics Department of the NRC, including the clinical optimization of the Varian VitalBeam Dual-Energy Linear Accelerator (LINAC).
- b. Improve the quality of care, standards of practice, clinical outcomes to accreditable international standards of practice through policy development and implementation;

- c. Develop the technical capacity of the clinical ancillary staff, specifically, medical physicists, dosimetrists, radiation therapist and radiographers; and
- d. Promote continuous quality improvement (CQI) through improved and strengthened quality assurance and development of policies and standard operating procedures.

3. SCOPE OF SERVICES, TASKS AND EXPECTED DELIVERABLES

The responsibilities for the Chief Medical Physicist (Consultant) will be based on the Scope of Practice for Medical Physicists from the Canadian Organization of Medical Physicists (COMP) – www.comp-ocpm.ca as well as the American Association of Physicists in Medicine (AAPM) – www.aapm.org. The Consultant will be responsible for:

3.1 Commissioning Oversight of the VitalBeam Linear Accelerator

3.1.1 As a one-off activity, the Consultant will be responsible for performing the acceptance testing, evaluation, calibration and overseeing and signing-off, on the commissioning of the newly purchased Varian VitalBeam Linear Accelerator and support equipment, software and operating systems, including: the Eclipse Treatment Planning System; ARIA Radiation Oncology Information Management System; and their associated computer systems, algorithms, data and outputs.

3.1.2 Also, the Consultant will be required to:

- I. Perform a comprehensive radiation survey of the new treatment facility to ensure the safety of patients, staff and the general public;
- II. Develop routine quality assurance programmes for all therapy/imaging equipment as part of the commissioning process;
- III. Coordinate vendors' applications training to ensure staff competency in the use of the equipment at start-up and make recommendations for further clinical/applications training of technical staff; and
- IV. Attend any relevant training offered by the vendor.

3.2 Clinical Physics Programme

The Consultant will be expected to provide clinical leadership to ensure effective, efficient and safe operation of all radiation therapy treatment, imaging and dosimetry equipment. The Consultant will ensure accurate dose delivery to patients as prescribed by the radiation oncologist and will provide the required supervision to the institution's Medical Physicists, Dosimetrists and technical staff to ensure that these objectives are met. The Consultant will work closely with and provide support/direction to the NRC Radiation Oncologists in the technical aspects of treatment planning and treatment delivery; and will provide medical physics expertise and support in the development of new clinical programmes. Also s/he will manage the institution's equipment quality assurance programme, treatment planning

programme and radiation safety programme. The Consultant would also work with the radiation oncologists to review, revise and improve existing treatment techniques.

The essential responsibility of the Consultant's clinical practice is to assure the safe and effective delivery of radiation, to achieve a diagnostic or therapeutic result as prescribed. The Consultant therefore, will be required to perform or supervise the technical aspects of procedures necessary to achieve this objective. This responsibility is consistent with the responsibilities of a medical physicist which include: protection of patients and others from potentially harmful or excessive radiation; establishment of adequate protocols to ensure accurate patient dosimetry; measurement and characterization of radiation; determination of delivered dose; advancement of procedures necessary to ensure image quality; development and direction of quality assurance programs; and assistance to other health care professionals in optimizing the balance between the beneficial and deleterious effects of radiation; and compliance with applicable national regulations.

3.2 Operations Management

The Consultant will be expected to provide Clinical Leadership and Management of the Medical Physics Department at the National Radiotherapy Centre (NRC). Responsibilities will include:

- I. Managing the Radiation Oncology Physics Programme (ROPP) with overall responsibility for treatment planning, equipment quality assurance and patient specific quality assurance;
- II. Overseeing the NRC's radiation safety programme;
- III. Providing support and technical guidance to the radiation oncologists in the adoption of new clinical radiation treatment programmes;
- IV. Managing the preventive maintenance service programme for radiation therapy and imaging equipment;
 - Routine supervision of :
 - Medical Physicists
 - Junior Medical Physicists
 - Radiation Therapists
 - Dosimetrists
 - Trainees and other technical staff
 - Junior staff and support staff
- V. Development and evaluations of the dosimetric component of patients' treatment plans;
- VI. Reviewing radiation oncology dosimetry information noted in patient records;
- VII. Directing the Radiation Oncology Physics Programme (ROPP) to include the technical direction of staff responsible for treatment planning, machine maintenance and repair and other physics support staff;
- VIII. Consult with patients on personal radiation dose and associated risks;
- IX. Providing consultation to assure accurate radiation dose delivery;
- X. Provide institutional consultation on program development in radiation oncology;

- XI. Optimizing the use of imaging procedures as they pertain to the simulation, treatment planning and treatment delivery in therapeutic radiologic procedures.
- XII. Participating in health informatics development and direction;
- XIII. Oversee the implementation of other medical applications of physics as appropriate, to safely carry out therapeutic radiologic procedures;
- XIV. Provision of evidence of compliance of equipment for radiation therapy treatment, brachytherapy, simulation, and radiation detection, with regulatory and accreditation agency rules and recommendations;
- XV. Development of equipment specifications for radiation treatment, brachytherapy, simulation, and radiation measurement; and
- XVI. Planning and specifying thickness, material, and placement of shielding needed to protect patients, workers, the general public and the environment from ionizing radiation generated from diagnostic and therapy equipment.

3.3 Quality Assurance and Safety

The Consultant will be responsible for Quality Assurance and Safety at the Facility for patients, staff and visitors with respect to radiation safety and protection. Specifically, the Consultant will:

- I. Review and update the Quality Management Programme that monitors, evaluates, and optimizes radiation oncology processes;
- II. Monitor, review and revise as necessary quality assurance programmes for all therapy/imaging equipment;
- III. Develop and manage a comprehensive clinical radiation safety program in radiation oncology; and
- IV. Measure and characterize medical radiation from radiation therapy treatment, brachytherapy, and simulation equipment prior to clinical utilization.

3.4 Policy Development

As a function and prerequisite to effective QA and continuing quality improvement (CQI) the Consultant will be responsible for the development of relevant policy and standard operating procedures (SOP) as it relates to medical physics and clinical radiologic applications at the NRC. Specifically, the Consultant will:

- I. Develop and apply Medical Health Physics procedures associated with the practice of Therapeutic Radiology;
- II. Approve radiation oncology technical procedures prior to clinical use;
- III. Develop and/or evaluate, in conjunction with the medical practitioner, policies and procedures related to the appropriate therapeutic use of radiation;
- IV. Develop and review procedures for the initial and continuing evaluation of radiation treatment, brachytherapy, simulation, and radiation measurement equipment; and

- V. Review and update the NRC's Radiation Safety Policy consistent with international standards and best practice.

3.5 Talent Management

The Consultant will be responsible for human resource development, technical skills enhancement and capacity strengthening of the professional staff of the Medical Physics Department. Specifically the Consultant will:

- I. Conduct initial skill and competency evaluations for Junior Medical Physicists;
- II. Develop individual training plans/programmes for Junior Medical Physicists to promote the skills/competencies in treatment planning, medical dosimetry, quality assurance and radiation safety procedures to facilitate the matriculation of Medical Physicists to the performance level of Senior Medical Physicists;
- III. Provide mentorship and coaching to Medical Physicists and technical staff in the adoption of new treatment strategies;
- IV. Provide leadership in clinical physics training and continuing education of Medical Physicists; and
- V. Work in close collaboration with and provide the necessary support to the Project Counterpart, for the International Atomic Energy Agency (IAEA) Regional Project on Capacity Building for Medical Physicist in the Caribbean Region.

3.6 International Atomic Energy Agency (IAEA) Support

The Consultant will be required to provide technical expert advice on Radiation Protection and Safety to the National Liaison Officer (NLO) in the implementation of the IAEA Basic Safety Standards (BSS). Specifically, the Consultant will: i) advise on Trinidad and Tobago's nominations for IAEA training courses in radiation protection and safety; ii) provide assistance in the review of technical documents from the IAEA; iii) advise on and sign-off on all equipment requests to and importation of equipment from the IAEA; iv) provide the NLO with information and advice to optimize the national technical cooperation programme (TCP); and v) assist the NLO in developing and reviewing the Country Programme Framework (CPF) in the area of medical physics in cancer treatment.

It should be noted that the National Liaison Officer (NLO) is the main point of contact for IAEA in the Member State (Trinidad and Tobago) for the technical cooperation programme (TCP) and leader/coordinator for development of the Country Programme Framework (CPF). The role of the NLO also encompasses the coordination/monitoring of payments of National Participation Costs (NPCs) and other financial obligations. S/he coordinates the design of the national projects proposed and supports project Counterparts in project design and implementation.

3.7 Radiation Safety Officer (RSO), MOH Coordination

The Consultant will serve as the Radiation Safety Officer (RSO) coordinator for the Ministry of Health, Trinidad and Tobago and will coordinate the RSO functions among MOH and RHA RSOs,

ensuring compliance with the appropriate National Policy, Legislation and Regulations. Specifically, in this capacity, the Consultant will:

- I. Fulfil the duties and responsibilities of the NRC's Radiation Safety Officer;
- II. Chair the NRC's Radiation Safety Committee;
- III. Serve on other NRC committees, including, but not limited to Risk Management and Quality Assurance;
- IV. Review, and where necessary develop, in consultation with the various end-users, Radiation Safety Policies and Procedures as part of the wider Client Radiation Safety Programme;
- V. Assess and evaluate installed radiation shielding designed to protect patients, workers, and the general public;
- VI. Evaluate the radiation safety programs at MOH and RHA institutions are compliant with national policy;
- VII. Advise on equipment specifications for radiation protection;
- VIII. Advise on policies for the initial and continuing evaluation of radiation protection equipment and procedures;
- IX. Supervise the administration of radiation-protection training for medical practitioners, and other health-care providers; and
- X. Determine the presence of and evaluate and assess any radiological hazard resulting from the use of ionizing radiation or radioactivity for compliance with appropriate regulatory and accreditation agencies.

4. REPORTING REQUIREMENTS AND TIME SCHEDULES FOR DELIVERABLES

| No. | Deliverable/Reports | Proposed Due Date |
|-----|--|---|
| 1. | Final Report advising of the Acceptance Testing, Evaluation, Calibration, Vendor Performance and Commissioning of the Varian VitalBeam Linear Accelerator, Eclipse Treatment Planning System and ARIA Information Management System and their associated computer systems and software. | End of Formal Commissioning and LA acceptance from the Supplier |
| 2 | Annual Work Plan (12 months) | Second month of each Contract Year |
| 3. | Monthly Activity Report covering the identified domains of the Consultancy, viz: <ol style="list-style-type: none"> a) NRC Operations, QA and Policy - 85% b) NRC Staff Talent Management - 10% c) IAEA NLO Advisory Technical Support - 2.5% d) MOH RSO Coordination - 2.5% | First week of each contract Month |

5. CHARACTERISTICS OF THE CONSULTANCY

- 5.1 Type of Consultancy: Individual Consultant
- 5.2 Duration: Three (3) years
- 5.3 Place of Work: Port of Spain, Trinidad and Tobago
- 5.4 Language: English (FLUENT)

5.5 Qualifications, Experience, Skills and Areas of Expertise

5.5.1 Nationality /IDB Eligibility Requirement

An individual is considered to be a national of a member country of the Bank if he or she meets either of the following requirements:

- i. is a citizen of a member country; or
- ii. has established his/her domicile in a member country as a “bona fide” resident and is legally entitled to work in the country of domicile.

5.5.2 Academic Qualification

- a) Minimum of a Master of Science (M.Sc./M.S) in Radiological Physics, Medical Physics or related discipline from an accredited University.
- b) Certification in Therapeutic Radiologic Physics by any one (1) of the following:
 - 1. The American Board of Radiology;
 - 2. The American Board of Medical Physics;
 - 3. The Canadian College of Physicists in Medicine; or
 - 4. Any other equivalent internationally recognized certification body in medical physics.

5.5.3 General Experience

- a) At least fifteen **(15) years'** experience in Clinical Radiation Oncology.

5.5.4 Specific Experience

- a) At least seven **(7) years** in the Management and Quality Assurance (QA) of a Linear Accelerator.

5.5.5 Management Experience

5.5.6 Health Sector Knowledge

Familiarity with the Trinidad and Tobago Health Sector or Health Sector within a similar region

5.5.7 Performance Validation

- Job Performance Validation # 1
- Job Performance Validation # 2

Performance Validation checks will be conducted to evaluate the candidates previous on the job performance. Candidates are required to provide the names, title/positions, contact telephone numbers and email addresses of **two (2) performance validation references**, including as one reference the direct supervisor from your most recent past relevant project and /or place of employment and one other referee. Referees would be contacted directly under **CONFIDENTIAL** cover.

Appendix 1 – Evaluation Criteria Matrix

Appendix 2 – Job Performance Reference Check Form

NOTE: Submissions that do not meet the National Eligibility requirement (5.5.1) and Academic Qualification (5.5.2) will not be considered for further evaluation.

Approved: 

Date: 2 Oct 2018

Name: Stewart Smith
Position: Senior Health Systems Adviser
Organization: Ministry of Health

| No. | EVALUATION CRITERIA | MAXIMUM POINTS |
|---------------------------------|---|----------------|
| 1. | General Experience | 60 |
| | Management experience in Health Physics and Radiation Protection | 10 |
| | Experience in the management of equipment service contracts, including liaising with service managers, supervision of service engineers | 10 |
| | Experience in the development/management of a comprehensive equipment Quality Assurance programme | 10 |
| | Experience in the development/implementation of clinical programmes in radiation therapy | 10 |
| | Experience in formal or in-house teaching of Medical Physicists, Dosimetrists, Radiation Therapists | 10 |
| | Radiation therapy equipment commissioning experience | 10 |
| 2. | Specific Clinical Experience | 40 |
| | A minimum of seven (7) years' experience working with Varian Linear Accelerators | 10 |
| | A minimum of seven (7) years' Clinical experience with Eclipse Treatment Planning | 5 |
| | A minimum of seven (7) years' experience in formal or in-house teaching of Medical Physicists, Dosimetrists, Radiation Therapists in the Varian software and programs | 10 |
| | A minimum of seven (7) years' experience with ARIA Oncology Information Management System | 5 |
| | A minimum of seven (7) years' Brachytherapy experience including clinical experience with GammaMed Plus and BrachyVision | 5 |
| | A minimum of seven (7) years' Experience in external beam planning, HDR brachytherapy, equipment quality assurance and radiation safety | 5 |
| 3. | Management Experience | 20 |
| | A minimum of seven (7) years' experience with direct management of a Medical Physics Department | 10 |
| | A minimum of seven (7) years' experience in the development of national, state or provincial radiation protection legislation, regulations and codes of practice | 5 |
| | A minimum of seven (7) years' experience working with health sector professionals at the national, state or provincial level | 5 |
| 4. | Health Sector Knowledge | 20 |
| | Knowledge of the Trinidad and Tobago Health Sector | |
| 5. | Performance Validation/Reference Checks | 20 |
| | Job Performance Validation Reference Check # 1 | 10 |
| | Job Performance Validation Reference Check # 2 | 10 |
| Total Points | | 160 |
| Minimum Qualifying Score | | 145 |



**Reference Check
Chief Medical Physicist**

Section 1: General Information

(Kindly provide short responses to the questions in this section, elaborating where relevant)

1. How long have you known the candidate and in what capacity was the reporting relationship?
2. How would you describe your overall experience working with the Candidate?
3. What would you say are his/her most remarkable personal attributes?

Section 2: Performance- Technical and Managerial

(Kindly rate the candidate on a scale of 1 -5, where 5 = exceeds expectations and 1 = does not meet expectations)

4. General evaluation criteria:
 - a. Quality of work
 - b. Job skills and knowledge
 - c. Sense of responsibility
5. The candidate's ability to:
 - a. Effectively manage/supervise staff towards accomplishing work/organizational goals
 - b. Direct staff during the execution of work tasks
 - c. Motivate staff in the planning and execution of work
 - d. Manage work place conflict
 - e. Communicate effectively with others
 - f. Collaborate with others
 - g. Make decisions based on facts, objective analysis and rational thought
 - h. Achieve their work deliverables/ organizational goals
 - i. Adjust to new ideas and changing circumstances

Section 3: Additional Information

(Kindly provide short responses to the questions in this section)

6. Have you ever had reason to question the candidate's technical competence and ability? If yes, kindly elaborate
7. Have you ever had reason to question the candidate's integrity? If yes, kindly elaborate.
8. Have you ever witnessed any breach of patient confidentiality by the candidate or any other ethical patient violation? If yes, kindly elaborate.
9. Would you work with/hire the candidate again?
10. Is there anything else that you will like to share with us about the candidate?



Government of the Republic of Trinidad and Tobago

Ministry of Health

Thank you for your time and feedback.

| | |
|-------------------------|-------------------------|
| Name of Referee: | Contact Details: |
| Position: | Date: |