

IRPA 13 FORUM

THE ASIAN/AUSTRALASIAN PERSPECTIVE ON THE ROLE OF THE MEDICAL PHYSICS EXPERT/QUALIFIED EXPERT/RADIATION PROTECTION ADVISERS IN HOSPITALS



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Introduction

Organisations involved in the survey:

- Asia-Oceania Federation of Organizations of Medical Physicists
- Middle East Federation of Organizations of Medical Physicists
- Southeast Asian Federation of Organizations of Medical Physicists

Countries represented in the survey

1. Australia	10. Malaysia
2. Bangladesh	11. Mongolia
3. India	12. New Zealand
4. Indonesia	13. Pakistan
5. Iran	14. Philippines
6. Iraq	15. Qatar
7. Jordan	16. Singapore
8. Republic of Korea	17. United Arab Emirates
9. Lebanon	18. Vietnam

Survey Form Used

GENERAL INSTRUCTIONS: Kindly mark with an 'X' on the blank which corresponds to your answer. Also add comments which may clarify or further explain your answer.

We would to like to know if:

(No. 1 below refers to pertinent provisions of the new IBSS.)

1. You agree with the indicated provisions of the new IBSS.

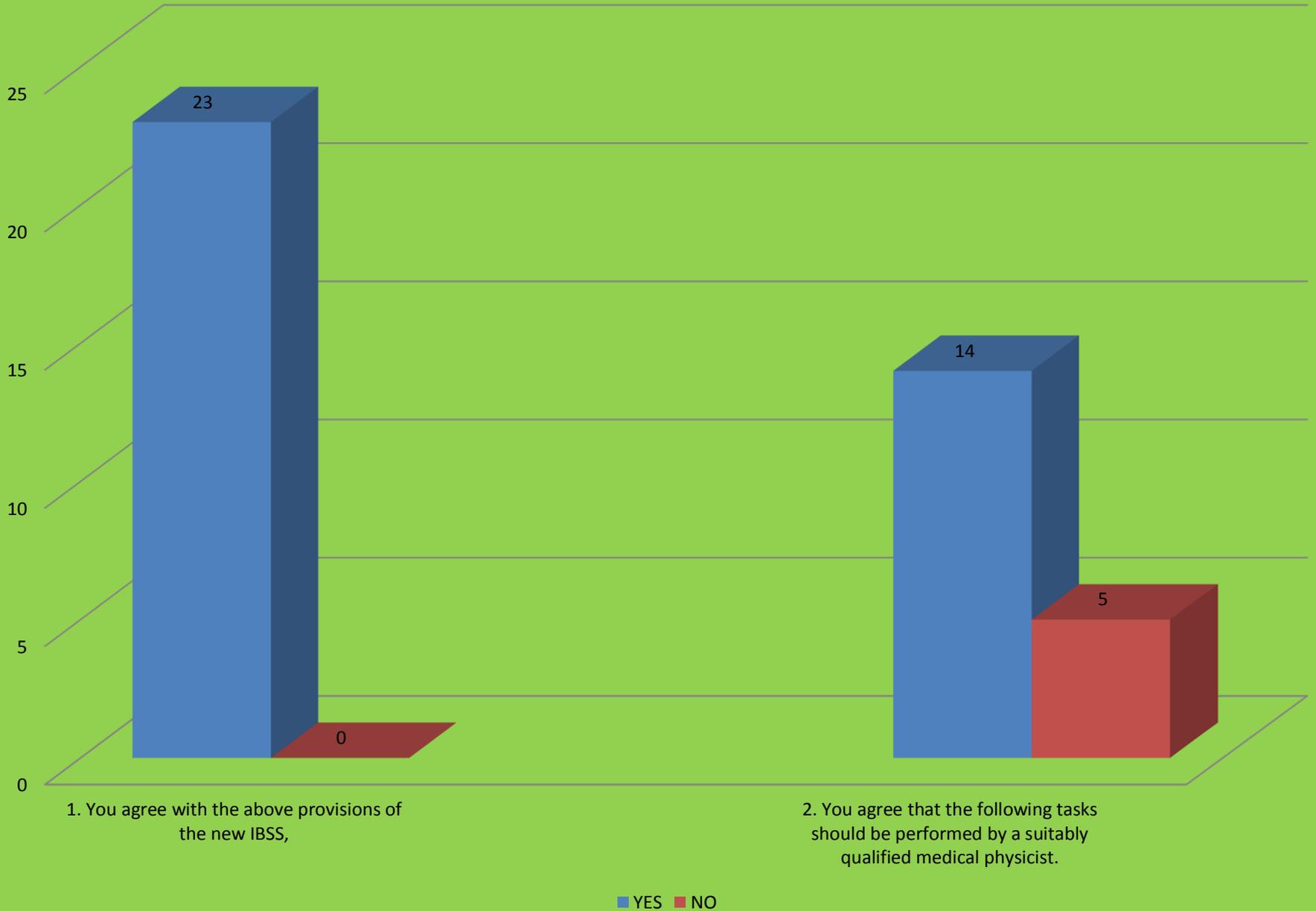
Yes 23 No 0

2. You agree that the following tasks should be performed by a suitably qualified medical physicist. Yes 14 No 5

(No. 3 below and for purposes of this survey, we use the tasks enumerated in the Scope of Practice of the American Association of Physicists in Medicine.)

3. You agree with the following tasks of a medical physicist.

Acceptance of New IBSS



YES	NO	3.1 General
<u>no of res</u> <u>14</u>	<u>pondents</u> <u>5</u>	Serves as the institution's Radiation Safety Officer
<u>22</u>	<u>0</u>	Serves as a member of the institution's Radiation Safety Committee
<u>18</u>	<u>1</u>	Serves on other institution committees including but not limited to Risk Management, Quality Assurance, and Professional staff.
<u>21</u>	<u>0</u>	3.2 For Diagnostic Medical Physics Develop specifications for imaging equipment and diagnostic radiation detectors
<u>20</u>	<u>1</u>	Develop procedures for the initial and continuing evaluation of imaging equipment and diagnostic radiation detectors
<u>20</u>	<u>1</u>	Provide evidence of compliance of imaging equipment with regulatory and accreditation agency rules and recommendations

<u>Yes</u>	<u>No</u>	3.2 For Diagnostic Medical Physics
<u>23</u>	<u>0</u>	Measure and characterize of medical radiation from imaging equipment prior to clinical utilization
<u>21</u>	<u>0</u>	Perform acceptance testing, evaluation and commissioning of imaging equipment and/or their associated computer systems, algorithms, data, and output
<u>12</u>	<u>11</u>	Develop and/or evaluate of policies and procedures related to the appropriate clinical use of radiation for imaging purposes
<u>19</u>	<u>1</u>	Review diagnostic imaging dosimetry information noted in patient records

<u>Yes</u>	<u>No</u>	3.2 For Diagnostic Medical Physics
<u>17</u>	<u>1</u>	Develop and manage of a comprehensive Quality Management Program that monitors, evaluates, and optimizes imaging processes
<u>17</u>	<u>0</u>	Consult in the development and/or evaluation of a comprehensive clinical radiation safety program in diagnostic imaging
<u>17</u>	<u>0</u>	Consult on patient or personnel radiation dose and associated risks
<u>17</u>	<u>0</u>	Provide diagnostic imaging physics training for medical practitioners and other health-care providers
<u>17</u>	<u>0</u>	Provide consultation to assure an optimized balance between image quality and patient dose
<u>15</u>	<u>6</u>	Provide institutional consultation on program development in diagnostic imaging
<u>16</u>	<u>1</u>	Plan and specify thickness, material, and placement of shielding needed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans
<u>15</u>	<u>2</u>	Assess and evaluate installed shielding designed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans

<u>Yes</u>	<u>No</u>	
<u>12</u>	<u>6</u>	3.2 For Diagnostic Medical Physics
		Participate in informatics development and direction
<u>15</u>	<u>0</u>	Apply other medical applications of physics as appropriate to safely carry out diagnostic radiologic procedures
<u>15</u>	<u>1</u>	Develop and apply Medical Health Physics procedures associated with the practice of Diagnostic Radiology
		3.3 For Nuclear Medical Physics
<u>17</u>	<u>1</u>	Develop nuclear imaging and radioactivity measurement equipment specifications
<u>15</u>	<u>2</u>	Develop procedures for the initial and continuing evaluation of nuclear imaging and radioactivity measurement equipment
<u>16</u>	<u>2</u>	Provide evidence of compliance of nuclear imaging and radioactivity measurement equipment with regulatory, professional and accreditation agency rules and recommendations

<u>Yes</u>	<u>No</u>	3.3 For Nuclear Medical Physics
<u>16</u>	<u>1</u>	Measure and characterize medical radiation from radiopharmaceuticals prior to clinical utilization
<u>18</u>	<u>0</u>	Perform acceptance testing, evaluation and commissioning of nuclear imaging and radioactivity measurement equipment and their associated computer systems, algorithms, data, and output
<u>18</u>	<u>0</u>	Evaluate nuclear imaging and radioactivity measurement procedures prior to clinical use
<u>17</u>	<u>2</u>	Develop and/or evaluate policies and procedures related to the appropriate clinical use of radiation for nuclear imaging, radiopharmaceutical therapy and/or radioactivity measurement purposes
<u>17</u>	<u>1</u>	Review radiopharmaceutical dosimetry information noted in patient records
<u>16</u>	<u>2</u>	Develop and manage of a comprehensive Quality Management Program that monitors, evaluates, and optimizes nuclear imaging, radiopharmaceutical therapy and radioactivity measurement processes
<u>17</u>	<u>1</u>	Develop and/or evaluate a comprehensive clinical radiation safety program in nuclear medicine

<u>Yes</u>	<u>No</u>	3.3 For Nuclear Medical Physics
<u>18</u>	<u>0</u>	Provide consultation on patient or personnel radiation dose and associated risks
<u>13</u>	<u>5</u>	Provide institutional consultation on program development in medical nuclear imaging and radiopharmaceutical therapy
<u>18</u>	<u>1</u>	Provide medical nuclear physics training for medical practitioners and other health-care providers
<u>18</u>	<u>0</u>	Provide consultation to assure an optimized balance between image quality and patient dose
<u>18</u>	<u>0</u>	Plan and specify thickness, material, and placement of shielding needed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans
<u>18</u>	<u>1</u>	Assess and evaluate installed shielding designed to protect patients, workers, and the general public from radiation produced incident to diagnosis or treatment of humans
<u>14</u>	<u>7</u>	Participate in informatics development and direction
<u>19</u>	<u>0</u>	Apply other medical applications of physics as appropriate to safely carry out nuclear medicine procedures
<u>17</u>	<u>0</u>	Develop and apply Medical Health Physics procedures associated with the practice of Nuclear Medicine

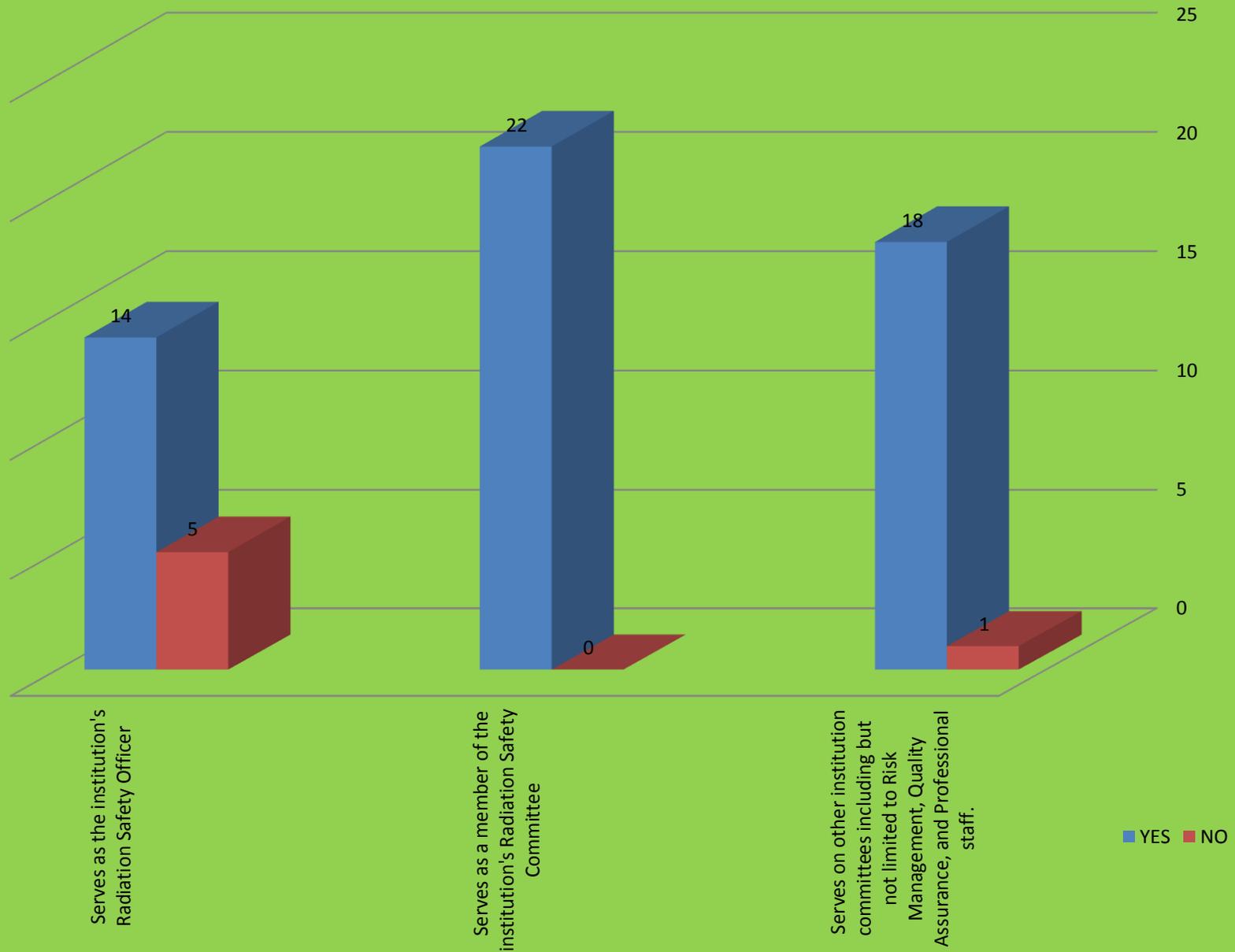
<u>Yes</u>	<u>No</u>	3.4 For Therapeutic Medical Physics
<u>20</u>	<u>1</u>	Develop equipment specifications for radiation therapy treatment, brachytherapy, simulation, and radiation measurement
<u>19</u>	<u>1</u>	Develop procedures for the initial and continuing evaluation of radiation therapy treatment, brachytherapy, simulation, and radiation measurement equipment
<u>20</u>	<u>1</u>	Provide evidence of compliance of equipment for radiation therapy treatment, brachytherapy, simulation, and radiation detection, with regulatory and accreditation agency rules and recommendations
<u>20</u>	<u>0</u>	Measure and characterize medical radiation from radiation therapy treatment, brachytherapy, and simulation equipment prior to clinical utilization
<u>21</u>	<u>0</u>	Perform acceptance testing, evaluation and commissioning of equipment used for external-beam therapy, brachytherapy, simulation, treatment-planning, and radiation detection; acceptance testing and evaluation of their associated computer systems, algorithms, data, and output
<u>18</u>	<u>2</u>	Approve radiation oncology technical procedures prior to clinical use
<u>21</u>	<u>1</u>	Develop and/or evaluate, in conjunction with the medical practitioner, policies and procedures related to the appropriate therapeutic use of radiation

<u>Yes</u>	<u>No</u>	
<u>21</u>	<u>0</u>	3.4 For Therapeutic Medical Physics
		Develop and/or evaluate, with the medical practitioner, the dosimetric component of patients' treatment plans
<u>19</u>	<u>1</u>	Review radiation oncology dosimetry information noted in patient records
<u>18</u>	<u>2</u>	Develop and manage a comprehensive Quality Management Program that monitors, evaluates, and optimizes radiation oncology processes
<u>20</u>	<u>1</u>	Develop and/or evaluate a comprehensive clinical radiation safety program in radiation oncology
<u>19</u>	<u>1</u>	Direct the Radiation Oncology Physics program to include the technical direction of staff responsible for treatment planning, machine maintenance and repair and other physics support staff.
<u>19</u>	<u>1</u>	Provide consultation on patient or personnel radiation dose and associated risks
<u>21</u>	<u>0</u>	Provide radiation oncology physics and radiation dosimetry training for medical practitioners and other health-care providers
<u>20</u>	<u>1</u>	Provide consultation to assure accurate radiation dose delivery
<u>18</u>	<u>3</u>	Provide institutional consultation on program development in radiation oncology

<u>Yes</u>	<u>No</u>	
<u>20</u>	<u>1</u>	3.4 For Therapeutic Medical Physics
		Plan and specify thickness, material, and placement of shielding needed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans
<u>20</u>	<u>1</u>	Assess and evaluate installed shielding designed to protect patients, workers, and the general public from radiation produced incident to diagnosis or treatment of humans
<u>19</u>	<u>2</u>	Use imaging procedures as they pertain to the simulation, treatment planning and treatment delivery in therapeutic radiologic procedures.
<u>16</u>	<u>5</u>	Involve in informatics development and direction
<u>21</u>	<u>0</u>	Apply other medical applications of physics as appropriate to safely carry out therapeutic radiologic procedures
<u>19</u>	<u>2</u>	Develop and apply Medical Health Physics procedures associated with the practice of Therapeutic Radiology
		3.5 For Medical Health Physics
<u>18</u>	<u>0</u>	Plan and specify thickness, material, and placement of shielding needed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans
<u>18</u>	<u>0</u>	Assess and evaluate installed shielding designed to protect patients, workers, and the general public from radiation produced incident to diagnosis or treatment of humans

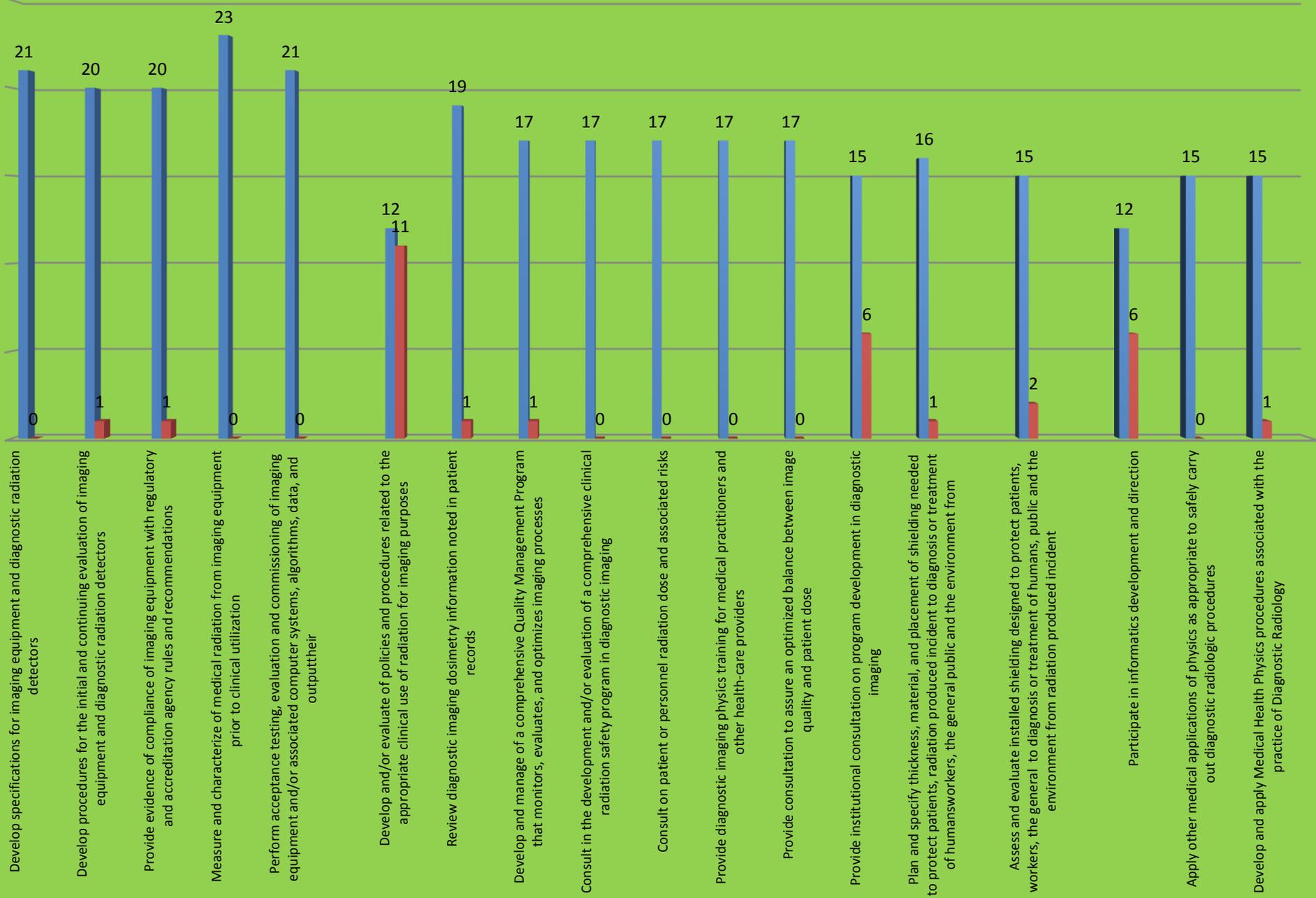
<u>Yes</u>	<u>No</u>	
<u>18</u>	<u>0</u>	3.5 For Medical Health Physics
		Develop radiation protection equipment specifications
<u>16</u>	<u>2</u>	Develop procedures for the initial and continuing evaluation of radiation protection equipment and procedures
<u>18</u>	<u>1</u>	Monitor compliance with radiation protection, policies and procedures, regulations, accreditation organization(s) standards, and national recommendations
<u>18</u>	<u>0</u>	Perform acceptance testing and commissioning of radiation protection equipment and devices and commissioning of facilities
<u>17</u>	<u>1</u>	Perform acceptance testing and evaluation of radiation protection computer systems, their algorithms, data, and output Evaluate radiation safety procedures prior to use
<u>17</u>	<u>1</u>	Development, manage and/or evaluate a radiation safety program
<u>18</u>	<u>1</u>	Provide radiation-protection training for medical practitioners, and other health-care providers
<u>19</u>	<u>0</u>	Determine presence, evaluate and assess any radiological hazard resulting from the use of ionizing radiation or radioactivity for compliance with appropriate regulatory and accreditation agencies
<u>18</u>	<u>0</u>	Fulfill the duties and responsibilities of a medical Radiation Safety Office/Protection Supervisor.

The Medical Physicist as RSO



Duties for Diagnostic Radiology Medical Physicists

■ YES ■ NO



Duties for Nuclear Medicine Physicists



Duties for Therapeutic Medical Physicists

YES NO



Duties of Medical Health Physicists

■ YES ■ NO



Comments regarding the medical health physics tasks

Philippines: Agrees with all these tasks. “However, a big hospital must employ a separate medical physicist who shall act as the full time radiation safety officer. He/she must not be assigned the tasks of a clinical medical physicist. This will ensure that there is a check-and-balance mechanism in radiation protection. This will also free the clinical medical physicist from many administrative tasks.”



Comments of Dr. Brian Thomas, Australia re : **Medical Health Physics**

**“The role of a
medical health
physicist is part of
the duties of either
ROMPs, DRMPs or
NMPs.”**



Comments of Prof. Djarwani Suharso of Indonesia

Under Diagnostic Health Physics:
Develop and apply Medical
Health Physics procedures
associated with the practice
of Diagnostic Radiology

“The role of Medical Health
Physics in Diagnostic
Radiology is still
questionable.”



Comments of Ms. Kamila Afroj, Bangladesh

1. (4.3.2) for diagnostic Medical Physics
2. (4.3.3) For Nuclear Medical Physics
3. (4.3.4) For therapeutic Medical Physics
4. (4.3.5) for Medical Health Physics

Comments Proper:

1. Response to No.1 on the basis of our consideration of the topic as Diagnostic Radiology. We did not fill it up because no physicist works in this discipline in our country
2. Response No. 2 is on the basis of our consideration of the topic as Nuclear Medicine. Only one yellow marked question is “No”.
3. Response to no. 3 is on the basis of our consideration of the topic as Therapeutic Medical Physics/Radiation Oncology Physics.
4. Response no. 4 is on the basis of our consideration of the topic as Medical Health Physics. Again only one yellow marked question is “No”

Comments of Ms. Emily Voon of Brunei

3.2. for Diagnostic Medical Physics

Answer Yes Develop specifications for imaging equipment and diagnostic radiation detectors

Comment : Sometimes biomedical engineers chip in here.

Answer Yes Perform acceptance testing, evaluation and commissioning of equipment used for external-beam therapy, brachytherapy, simulation, treatment- planning, and radiation detection; acceptance testing and evaluation of their associated computer systems, algorithms, data, and output

Comment : Some centers use private companies to do it.

Answer No Develop and/or evaluate of policies and procedures related to the appropriate clinical use of radiation for imaging purposes

Comment : Regulatory task?

Answer Yes Assess and evaluate installed shielding designed to protect patients, workers, the general public and the environment from radiation produced incident to diagnosis or treatment of humans

Comment: Submit to regulatory?

Answer yes Participate in informatics development and direction

Comment: : Sometimes biomedical engineers chip in here .

Comments of Ms. Emily Voon of Brunei

3.3. For Nuclear Medical Physics

Answer yes Develop nuclear imaging and radioactivity measurement equipment specifications

Comment: Biomedical engineers chip in here .

Answer Yes Develop and/or evaluate a comprehensive clinical radiation safety program in nuclear medicine.

Comment : Submit to regulatory?

Comments of Dr. Blair Steer of New Zealand

3.4. For Therapeutic Medical Physics

- Answer yes Develop and/or evaluate, with the medical practitioner, the dosimetric component of patients' treatment plans
Comment : *also with the radiation therapist*
- Answer yes Develop and manage a comprehensive Quality Management Program that monitors, evaluates, and optimizes radiation oncology processes
Comment : *with other RO professionals*
- Answer yes Use imaging procedures as they pertain to the simulation, treatment planning and treatment delivery in therapeutic radiologic procedures.
Comment : *Not sure what this means – we don't use them clinically but will be involved in commissioning, QA, etc*

Thank you to the following colleagues who responded to our survey.

Name	Country	Name	Country
1. Dr. Brian Thomas	Australia	14. Dr. Ibrahim Duhaini	Lebanon
2. Dr. Nataalka Suchowerska	Australia	15. Dr. Noriah Jamal	Malaysia
3. Dr. Kamila Afroj Quadir	Bangladesh	16. Ms. L. Meelashini	Malaysia
4. Dr. Siddique-e Rabbani	Bangladesh	17. Ms. L. Meelashini	Malaysia
5. Ms. Emily Voon Oi Ling	Brunei	18. Prof. Fong Shu Yee	Malaysia
6. Prof. Thayalan Kuppusamy	India	19. Dr. Enkhtsetseg Vanchinbazar	Mongolia
7. Dr. Freddy Haryanto	Indonesia	20. Dr. Blair Steer	New Zealand
8. Prof. Djarwani Suharso	Indonesia	21. Dr. Shafqat Faaruq	Pakistan
9. Dr. Ghondowiardo	Indonesia	22. Mr. Norberto Abella	Philippines
10. Dr. Seied Rabi Mahdavi	Iran	23. Dr. Huda Al Naemi	Qatar
11. Dr. Nabaa Naji	Iraq	24. Ms. S. Somanesan	Singapore
12. Dr. Shada Ramahi	Jordan	25. Dr. Jamila S. Alsuwaidi	UAE
13. Prof. Dong Han Lee	Republic of Korea	26. Dr. Phan Syan	Vietnam

THANK YOU! SALAMAT PO!

