

## HUMAN RESOURCES FOR TREATING NEW CANCER CASES IN TRINIDAD AND TOBAGO

### Executive Summary

The purpose of this report is to describe the human resources needed in Trinidad and Tobago to treat new cancer patients. The population of Trinidad and Tobago is approximately 13.5 million (0.654 million men and 0.696 million women) and the estimated number of new cancer cases in Trinidad and Tobago for the year 2012, based on GLOBOCAN data for Trinidad and Tobago as a whole (<http://globocan.iarc.fr/>) was 3194 (1642 in men and 1552 in women) (Table A).

The five most common cancers in Trinidad and Tobago are (1) urological (bladder, kidney, prostate and testis), (2) breast, (3) gynecological (cervix uteri, corpus uteri and ovary), (4) colorectal and (5) hematological malignancies (Hodgkin lymphoma, non-Hodgkin lymphoma, multiple myeloma and leukemia).

Table A: The five most frequently occurring cancers in Trinidad and Tobago for men and women based on 2012 GLOBOCAN data.

Cancer	BOTH SEXES		MEN		WOMEN	
	Incidence	Rank	Incidence	Rank	Incidence	Rank
All cancers excl. non-melanoma skin cancer	3194		1642		1552	
Urological	791	1	761	1	30	8
Breast	487	2			487	1
Gynecological	426	3			426	2
Colorectal	357	4	207	2	150	3
Hematological	224	5	142	3	42	7
Lung	184	6	121	4	103	4
Head and Neck	149	7	104	5	45	5
Pancreas	93	8	49	6	44	6
Stomach	67	9	45	7	22	9
Liver	37	10	18	9	19	10
Brain, nervous system	32	11	20	8	12	11
Melanoma of skin	20	12	12	11	8	13
Gallbladder	17	13	8	12	9	12

Esophagus	14	14	14	10	0	14
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Newly diagnosed cancer patients need pathology, surgery, chemotherapy and/or radiation therapy. The number of oncologists needed is based, therefore, on the number of patients requiring pathology, surgery, chemotherapy and radiation therapy (Table B). This number is estimated from the percentage of patients requiring surgery, chemotherapy and/or radiation therapy for the top ten cancers in both men and women.

For developing countries the International Atomic Energy Agency (IAEA) recommends training Radiation/Clinical Oncologists who can prescribe both radiation and chemotherapy for the common solid cancers, instead of separate medical and radiation oncologists. Hematological malignancies are treated primarily by hematologist-oncologists. The number of specialists needed is based upon the number of cancer patients but each city, in order to ensure coverage if one person leaves or goes on vacation, must have at least 2 surgical oncologists, 2 radiation/clinical oncologists, 2 hematologist oncologists, etc.

Table B: Number of Oncologists needed for Trinidad and Tobago based on 2011 population estimates (<http://citypopulation.de/>) and 2012 GLOBOCAN data for new cancer cases.

	Population	New Cancer Cases	Hematologist Oncologists	Surgical Oncologists	Radiation / Clinical Oncologists	Urologic Oncologists	Gynecologic Oncologists	Pathologists
Trinidad and Tobago (GLOBOCAN2012)	1,350,000	3194	2 <sup>¥</sup>	4	16	2	2 <sup>¥</sup>	7
Trinidad and Tobago (Citypopulation2011)	1,328,019	3142	2 <sup>¥</sup>	4	16	2	2 <sup>¥</sup>	7

<sup>¥</sup>At least 2 are needed in the country.

In addition to oncologists, support staff such as onco-pharmacists, pharmacy technicians, oncology nurses and palliative care specialists is also needed. Many cancer patients require hospitalization for diagnosis, treatment and/or complications, therefore an adequate number of oncology beds will be needed. The number of oncology nurses, onco-pharmacists and pharmacy technicians needed is based upon the number of beds occupied daily by cancer patients while the number of palliative care specialists is based on the number of new cancer cases per year (Table C). The oncology nursing staff for each 24-bed oncology unit (operating 24 hours a day, 7 days a week) comprises of one head nurse and a nurse specialist as well as 13 nurses working 8 hour shifts, 5 days per week.

Table C: Number of Oncology Units, Nursing and Pharmacy Staff needed for Trinidad and Tobago based on 2011 population estimates and 2012 GLOBOCAN data for new cancer cases.

	New Cancer Cases	Maximum # of beds/day	# of 24 bed oncology wards	Onco-Pharmacists	Onco-Pharmacy Technicians	Palliative Care Specialists	Oncology Nursing Staff other than Radiation Oncology Nurses
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Trinidad and Tobago (GLOBOCAN2012)	3194	63	3	12	18	7	45
Trinidad and Tobago (Citypopulation2011)	3142	62	3	12	18	7	45

Since many cancer patients require radiotherapy, appropriately equipped facilities will be needed along with radiation oncology staff (Tables D and E). Radiation oncology staff includes radiation therapy technicians, medical physicists, Linac engineers and radiation oncology nurses in addition to radiation/clinical oncologists. The minimum radiation therapy equipment requirements are at least one of each: Linac, brachytherapy unit, CT simulator, treatment planning computer and dosimetry/quality assurance package.

Table D: Radiation Therapy Staff needed for Trinidad and Tobago based on 2011 population estimates and 2012 GLOBOCAN data for new cancer cases.

	<b>New Cancer Cases</b>	<b>Radiation / Clinical Oncologists</b>	<b>Radiation Therapy Technicians</b>	<b>Medical Physicists</b>	<b>Linac Engineers</b>	<b>Radiation Oncology Nurses</b>
Trinidad and Tobago (GLOBOCAN2012)	3194	16	19	7	2	7
Trinidad and Tobago (Citypopulation2011)	3142	16	19	7	2	7

Table E: Radiation Therapy Equipment needed for Trinidad and Tobago based on 2011 population estimates and 2012 GLOBOCAN data for new cancer cases.

	<b>New Cancer Cases</b>	<b>Linacs / Co 60 Megavolt Units</b>	<b># of Brachytherapy units</b>	<b># CT simulators</b>	<b># of treatment planning computers</b>	<b># of dosimetry/ QA package</b>
Trinidad and Tobago (GLOBOCAN2012)	3194	4	2	2	2	2
Trinidad and Tobago (Citypopulation2011)	3142	4	2	2	2	2

NOTE: Guidelines from the IAEA of the United Nations were used to calculate the radiation therapy equipment and staff needed in the setting of a developing country. Guidelines from the Oncology Nursing Society were used to calculate the number of nurses needed. Several other specialty societies were also

requested to provide guidelines but in most cases there were none, therefore colleagues active in those fields were consulted for estimating the number of staff needed.