

# Scientific Forum on Cancer in Developing Countries: Facing the Challenge

IAEA's Role in Fight against Cancer:

A perspective from Ghana

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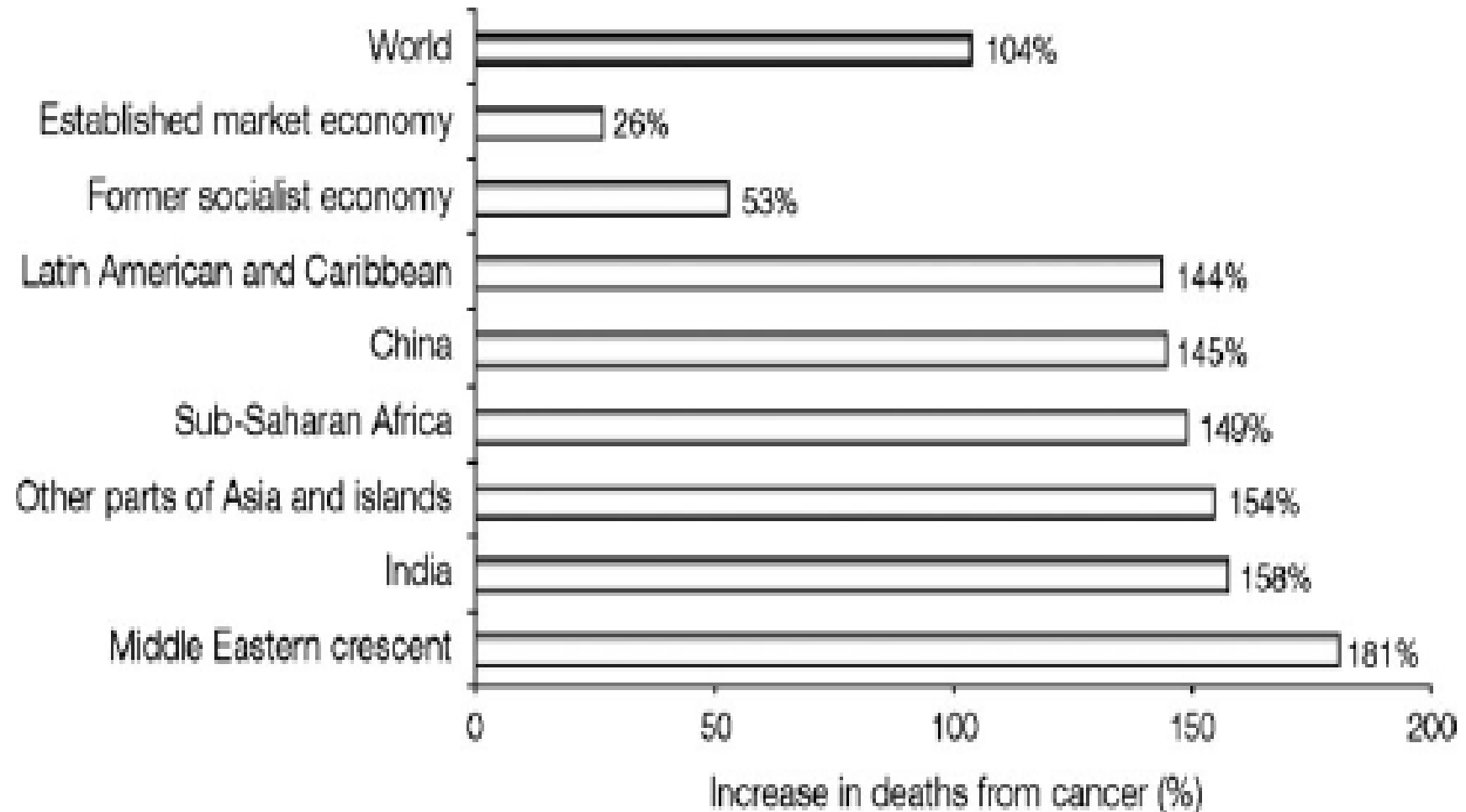
Is Cancer a problem in Ghana/Africa?

	WR	CR	GAR	VR	ER	AR	BAR	NR	UER	UWR	Gha
	Malaria	Malaria	Malaria	Stroke	Malaria	Malaria	Sepsis	malaria	malaria	malaria	mala
	Anaemia	Anaemia	Stroke	Malaria	Anaemia	Neonatal condition	Malaria	anaemia	pneumonia	anaemia	anae
	Pneumonia	Pneumonia	Anaemia	Anaemia	Stroke	Typhoid fever	Pneumonia	pneumonia	anaemia	pneumonia	pneu
	Hepatitis	Stroke	Pneumonia	Pneumonia	Pneumonia	Stroke	Stroke	diarrhoea	meningitis	diarrhoea	strok
	HPTN	HPTN	Cardiopathy	Cardiopathy	HPTN	Anaemia	HIV/AIDS	convulsions	TB	hepatitis	typh Fever
	Stroke	Diarrhoea	HPTN	Sepsis	Diarrhoea	Hepatitis	Hepatitis	typhoid fever	typhoid fever	meningitis	diarr
	Diarrhoea	Neonatal	Typhoid	TB	Cardiopathy	Pneumonia	Anaemia	meningitis	hepatitis	typhoid fever	HPT
	Typhoid fever	Typhoid fever	Diarrhoea	RTA	Diabetes	Diarrhoea	Liver disease	neonatal condition	stroke	convulsions	hepa
	Cardiopathy	Renal disease	Liver disease	Cancer	Sepsis	TB	Cancer	hepatitis	abdominal colic	malnutrition	men
0	Injuries	Sepsis	Typhoid	Anaemia	TB	Liver disease	Cardiopathy	RTA	liver disease	HIV/AIDS	seps

# Role of IAEA in Combating Cancer in Africa

- Does not feature in top 10 causes of death in sentinel sites of most regions of the country in the form it was produced.
- Third commonest cause of death in Teaching Hospital
- GLOBOCAN 2008 figures; 12,700 deaths from cancer
- Few population based cancer registries in Africa

# Predicted changes in cancer mortality by 2020\*



\* Kanavos P. Ann Oncol 2006; 17(suppl 8):viii15-viii23.

# Four year trend for a Radiotherapy Department in Ghana

YEAR	MALE	FEMALE	TOTAL
2009	378	760	1118
2008	306	644	950
2007	221	584	805
2006	218	520	738
TOTAL	1123	2508	3611

# Top ten cancers at the Korle-Bu Cancer Centre 2009

<b>CASES</b>	<b>TOTAL</b>	<b>%</b>
<b>BREAST</b>	<b>288</b>	<b>25.8</b>
<b>CERVIX</b>	<b>207</b>	<b>18.5</b>
<b>HEAD &amp; NECK</b>	<b>165</b>	<b>14.8</b>
<b>PROSTATE</b>	<b>117</b>	<b>10.5</b>
<b>SARCOMA</b>	<b>43</b>	<b>3.9</b>
<b>OVARY</b>	<b>42</b>	<b>3.7</b>
<b>COLON - RECTAL</b>	<b>35</b>	<b>3.1</b>
<b>LUNG</b>	<b>18</b>	<b>1.6</b>
<b>ENDOMETRIUM</b>	<b>16</b>	<b>1.4</b>
<b>WILMS</b>	<b>8</b>	<b>0.8</b>
<b>OTHERS</b>	<b>179</b>	<b>16.0</b>
<b>TOTAL</b>	<b>1118</b>	<b>100.0</b>

# Role of IAEA



# ACCESS TO RADIOTHERAPY

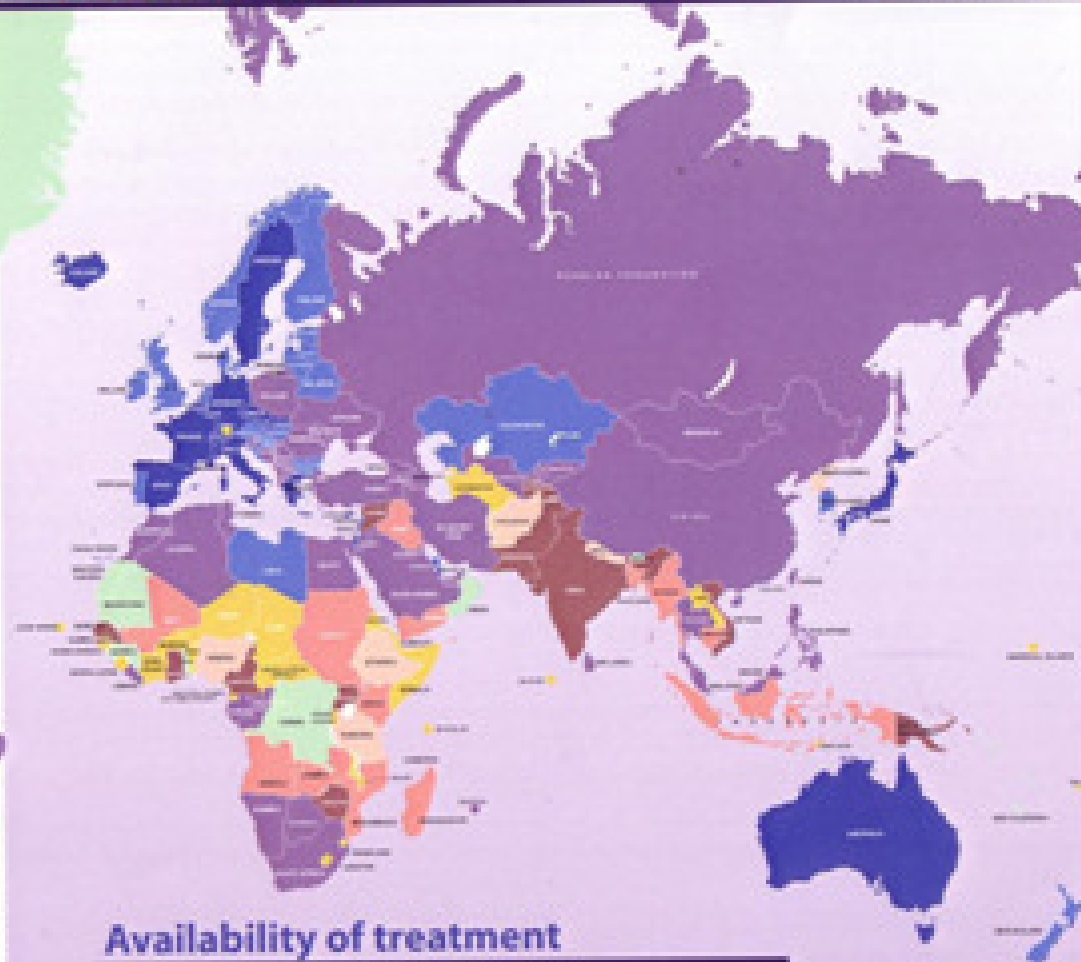
[pact@iaea.org](mailto:pact@iaea.org)

Radiotherapy is an essential part of the treatment of cancer

Over 30 African and Asian countries have no access to radiotherapy

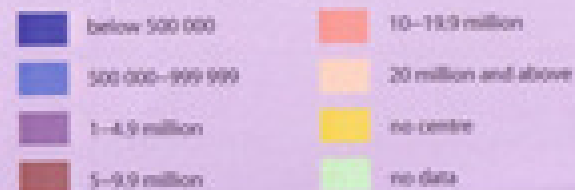
There is a shortfall of over 5000 radiotherapy machines in the developing world

IAEA has initiated PACT to comprehensively address this urgent problem



## Availability of treatment

Number of people served by a single radiotherapy centre (latest available data 1999-2003)



IAEA

Program  
Action for  
Cancer  
Therapy

PACT

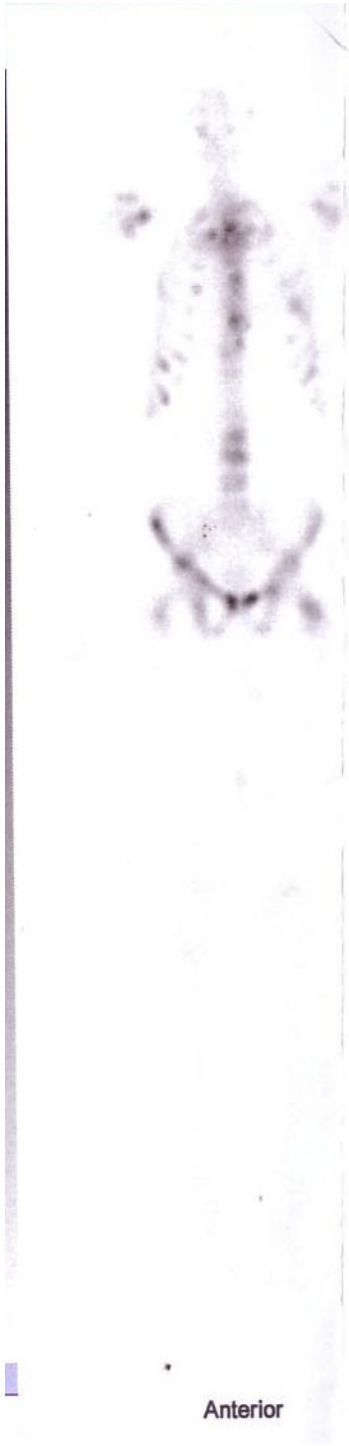
IAEA/WHO Collaborating Centre for Cancer Therapy

# Role of IAEA in Combating Cancer in Africa

- Played an indispensable role in the **establishment of two Radiotherapy Centres** which became operational in 1997 and 2004, with promise of a third
- Provided **technical support**
- Strong government commitment was a necessary condition
- Over 50% of cancer patients require radiation at some point in the evolution of the disease

# Role of IAEA

- Sponsored **long term training** of Oncologist to fellowship level as well as Radiation Therapy Technologist and Medical Physicist
- Scientific visits lasting about 1-2 weeks
- **Continuing Medical Education** through AFRA projects, organising about three courses a year
- In **diagnostic work up** for cancer it has enabled Nuclear Medicine Departments across Africa to perform **bone scans**



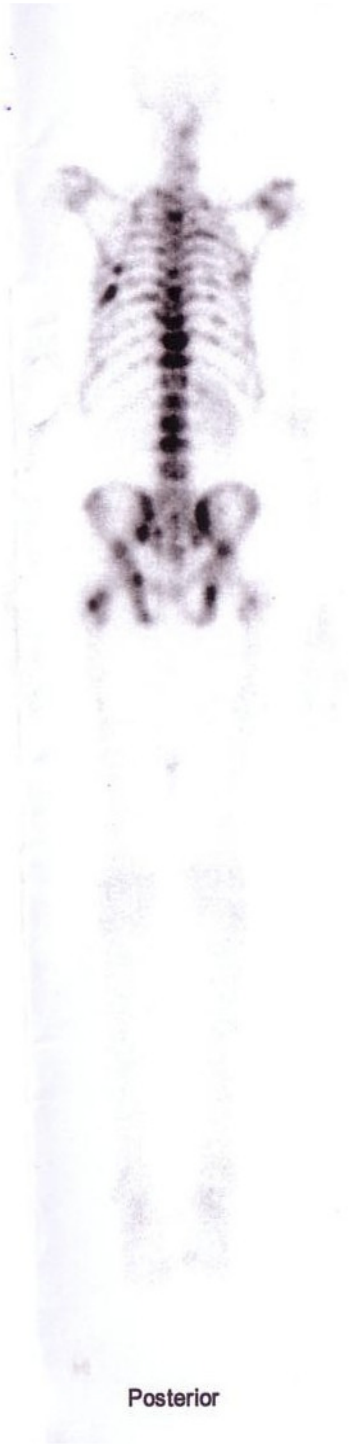
Anterior



Posterior



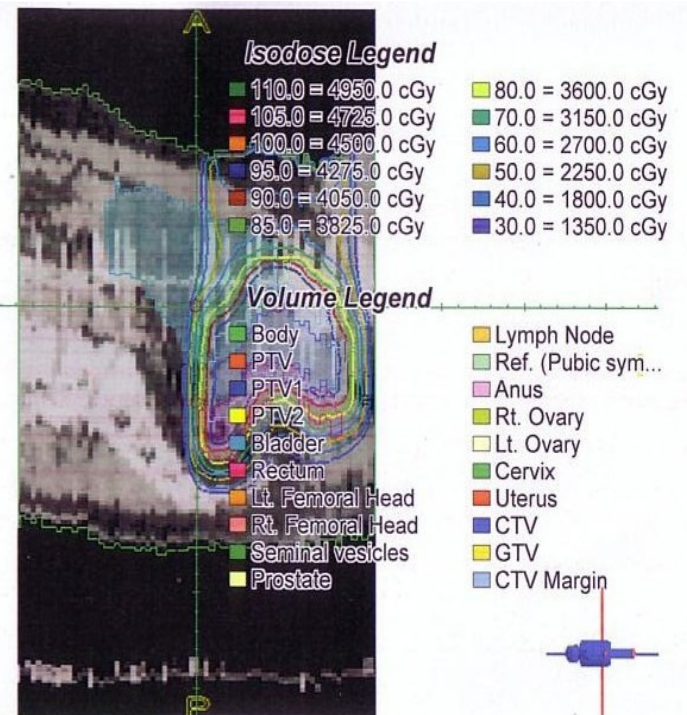
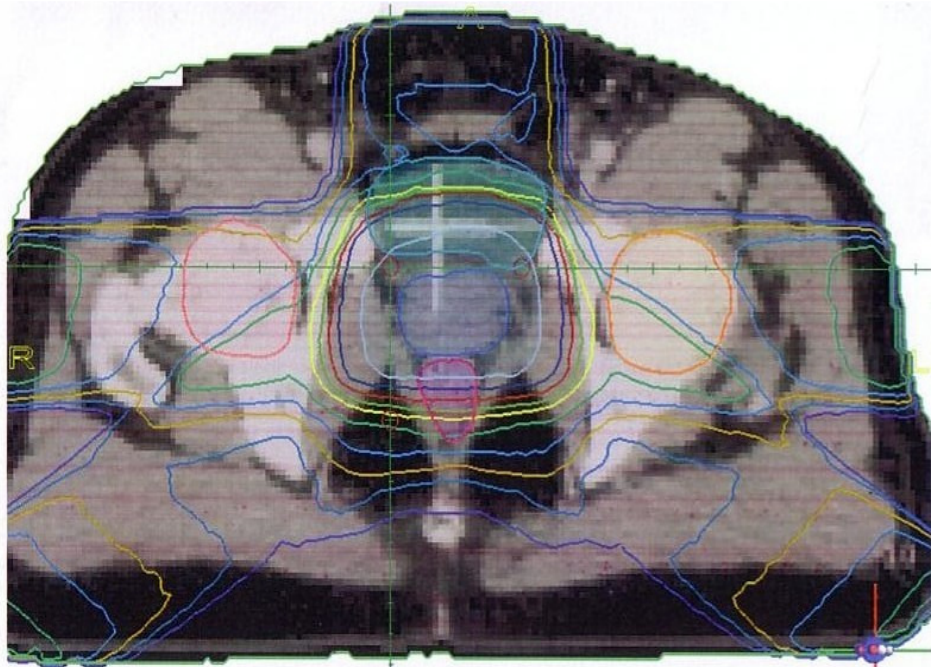
Anterior



Posterior

# Role of IAEA in Combating Cancer in Africa

- Participation in **postal dose audit** service under supervision of IAEA validates **calibration of radiotherapy beams** in Africa
- Introduction of **QUATRO**(Quality Assurance Team for Radiation Oncology) programme enables comprehensive auditing of the whole process radiotherapy
- **Cost sharing** enables acquisition of new equipment like a 3D planning system for Ghana

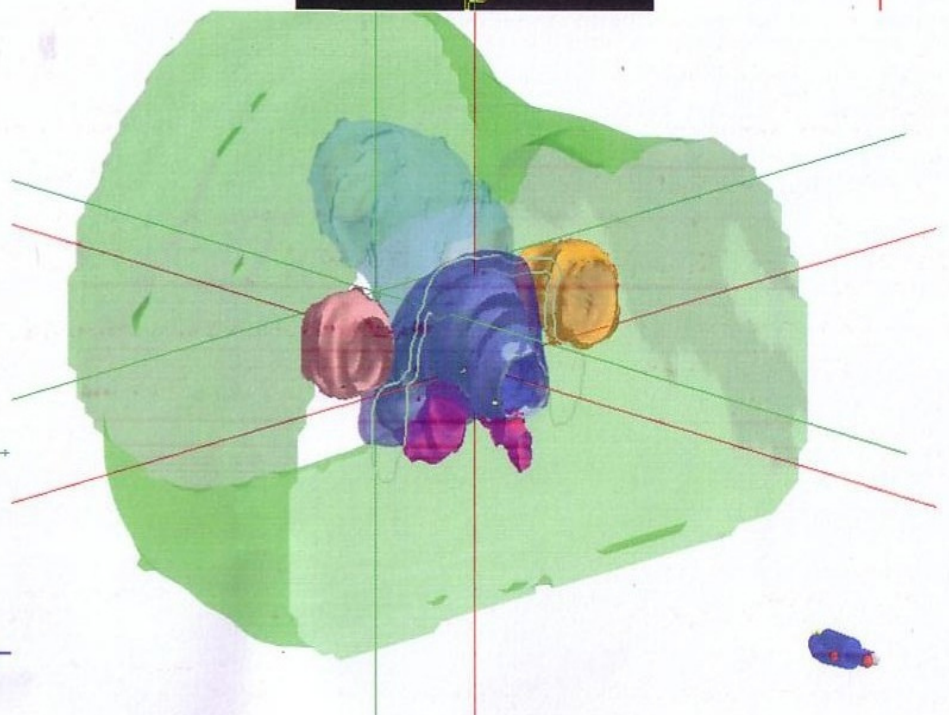
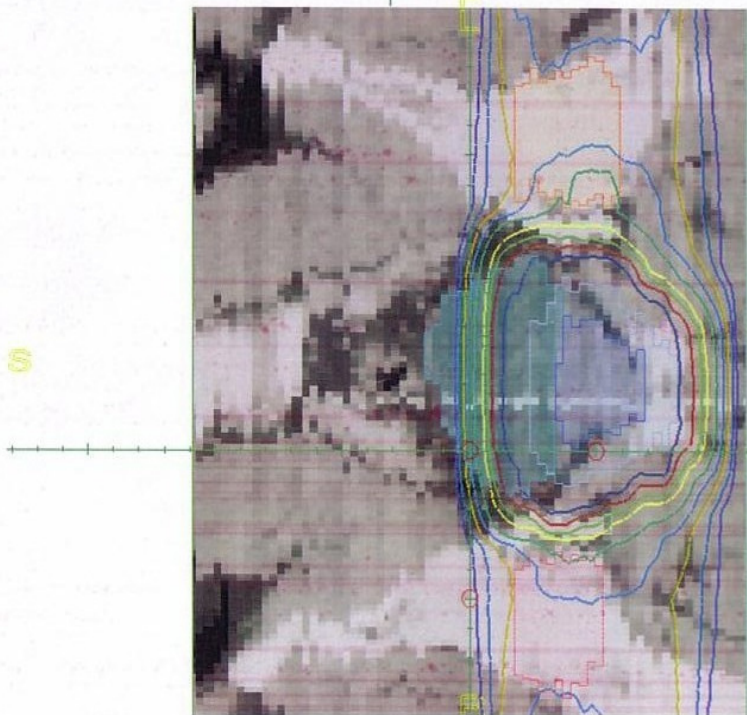


**Isodose Legend**

- 110.0 = 4950.0 cGy
- 105.0 = 4725.0 cGy
- 100.0 = 4500.0 cGy
- 95.0 = 4275.0 cGy
- 90.0 = 4050.0 cGy
- 85.0 = 3825.0 cGy
- 80.0 = 3600.0 cGy
- 70.0 = 3150.0 cGy
- 60.0 = 2700.0 cGy
- 50.0 = 2250.0 cGy
- 40.0 = 1800.0 cGy
- 30.0 = 1350.0 cGy

**Volume Legend**

- Body
- PTV
- PTV1
- PTV2
- Bladder
- Rectum
- Lt. Femoral Head
- Rt. Femoral Head
- Seminal vesicles
- Prostate
- Lymph Node
- Ref. (Pubic sym...)
- Anus
- Rt. Ovary
- Lt. Ovary
- Cervix
- Uterus
- CTV
- GTV
- CTV Margin





**Project GHA/6/015**

**Report on meeting to review workplan and implementation arrangements for expansion of  
radiotherapy and nuclear medicine services in Ghana**

**Vienna; 17 to 19 November 2008**

# Role of IAEA in Combating Cancer in Africa

- IAEA in 2005 and PACT after carrying out an imPACT mission **assisted Ghana to develop a bankable project**
- The result is a loan of US\$13.5 million from OFID/BADEA to strengthen radiotherapy and nuclear medicine services in Ghana
- A portion of the amount will be devoted to cancer control activities under the supervision of WHO.



# Role of IAEA in Combating Cancer in Africa

- **Radiation Protection** Institutes are assisted with
  - Equipment
  - Training
  - Technical expertise
  - Development of legal instruments
  - To ensure safety of staff and public

# Role of IAEA in Combating Cancer in Africa

Finally through its Contract **Research** Project, African countries are enabled to participate in prospective multi-centre randomised controlled trial on important topics in cancer, institutional capacity is improved through such experience.

# Conclusion

IAEA continues to play a vital role in the diagnosis and management of cancer in Africa and needs to be commended. Donor agents and other development partners are encouraged to contribute to cancer care in Africa through the PACT programme of IAEA