

# Radiotherapy Audits in Africa

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IAEA Scientific Forum

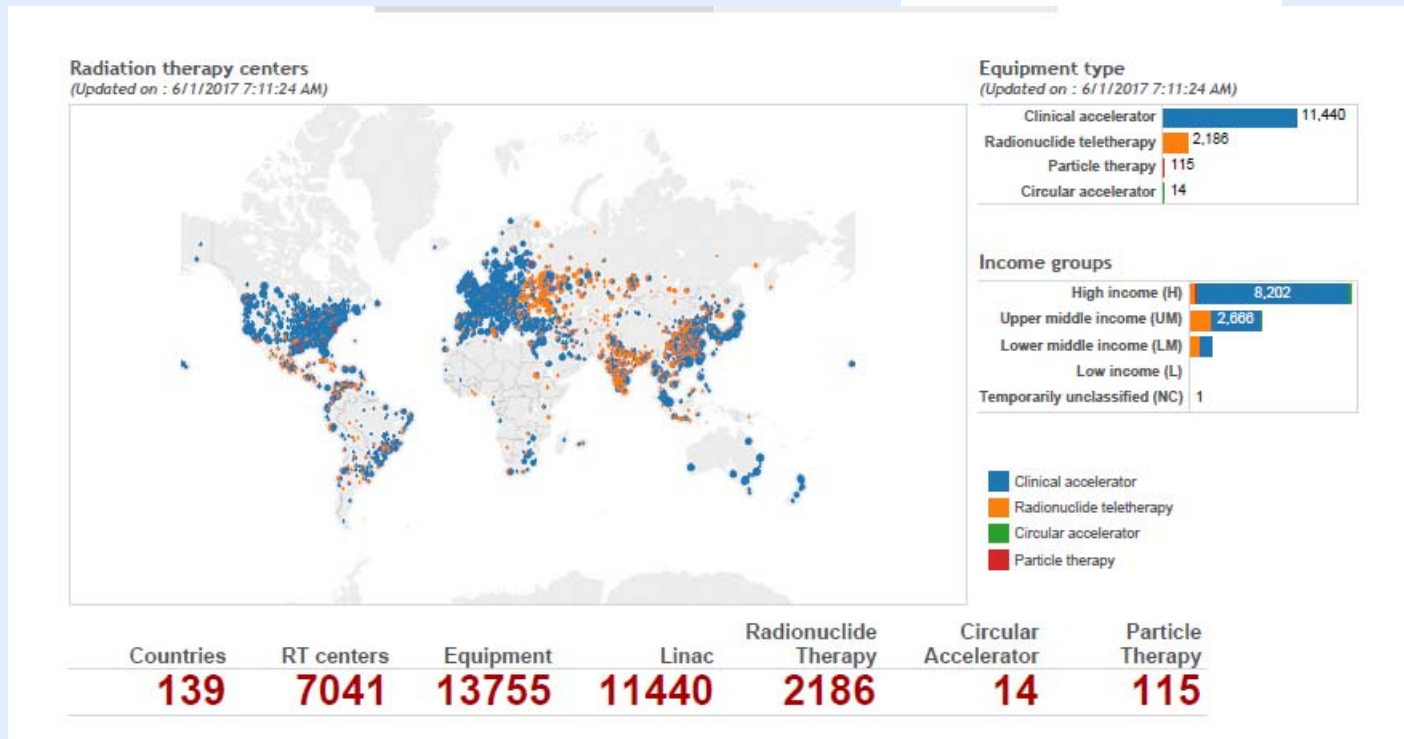
**Nuclear Techniques  
in Human Health**

*Prevention, Diagnosis, Treatment*

CM Johannesburg Academic  
Hospital / University of the  
Witwatersrand



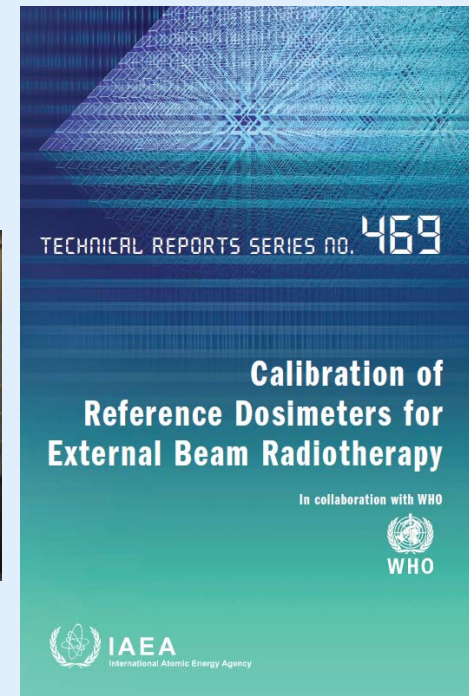
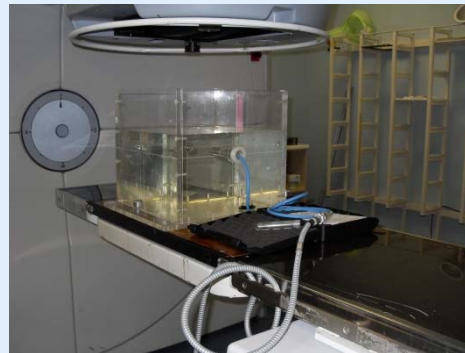
# Worldwide status



<https://dirac.iaea.org>

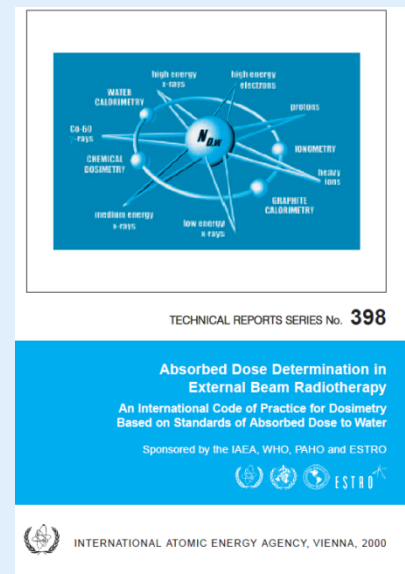
# IAEA/WHO SSDL NETWORK

- Calibration of reference dosimetry equipment
- International standardisation of dose measurements

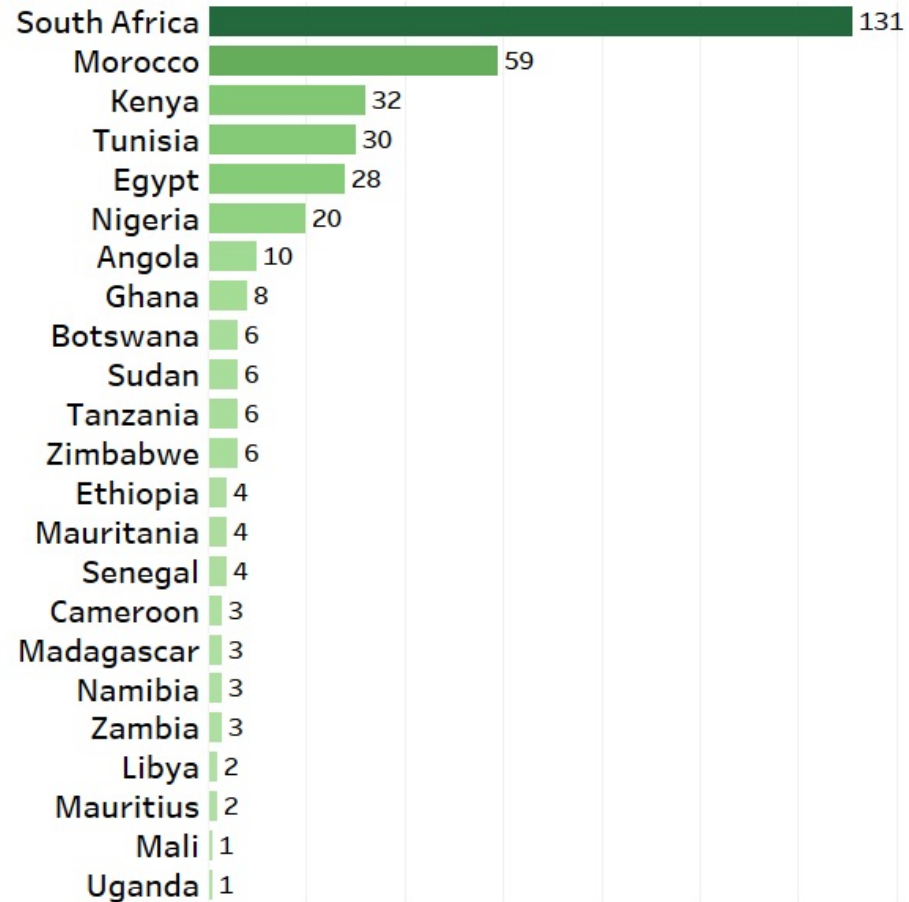
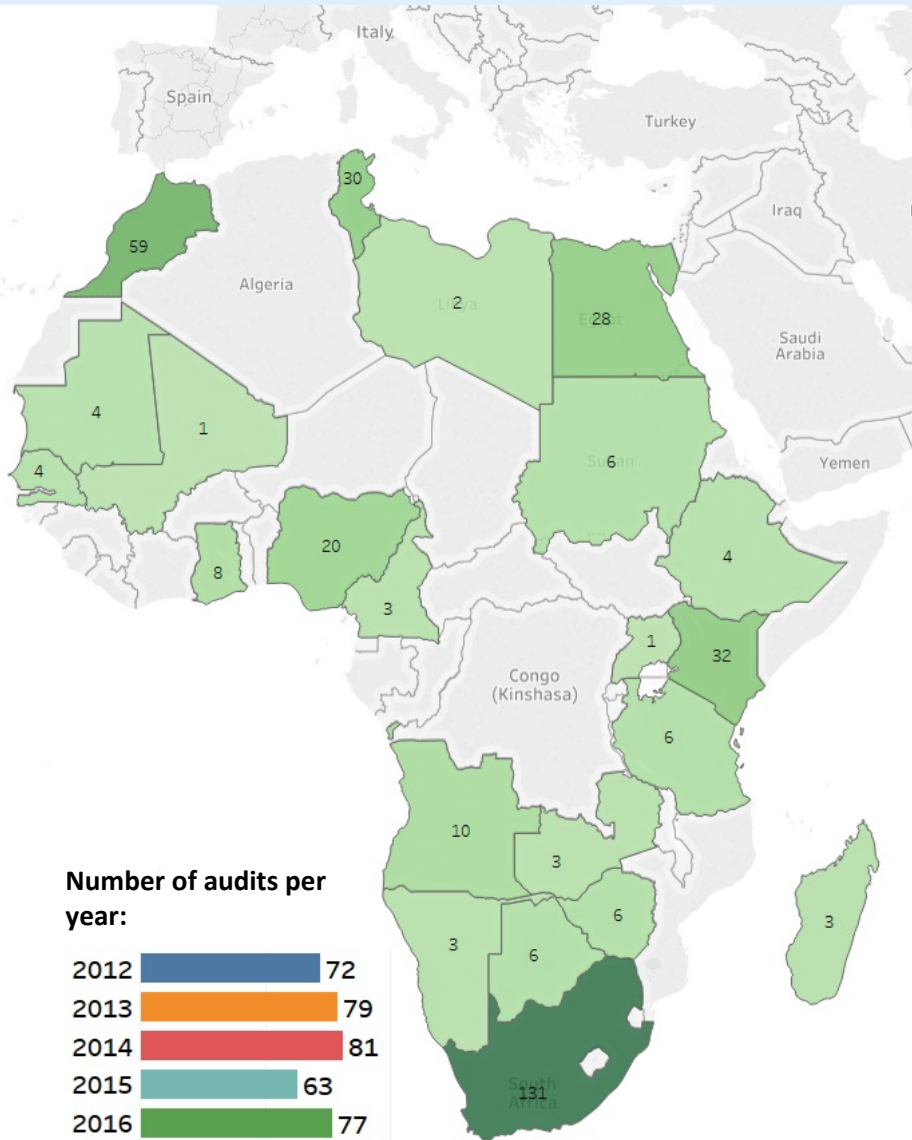


# IAEA/WHO TLD

- Audit of reference dosimetry – a testament to the co-ordinated dissemination and implementation of IAEA TRS No. 398, a dosimetry Code of Practice
- Remote, postal service
- The system is being upgraded
- Expansion to other modalities



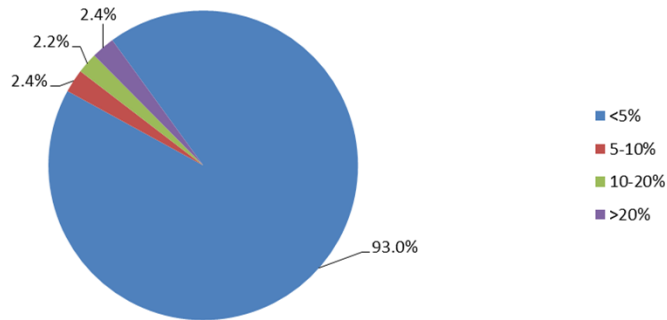
# IAEA/WHO dosimetry audits in Africa



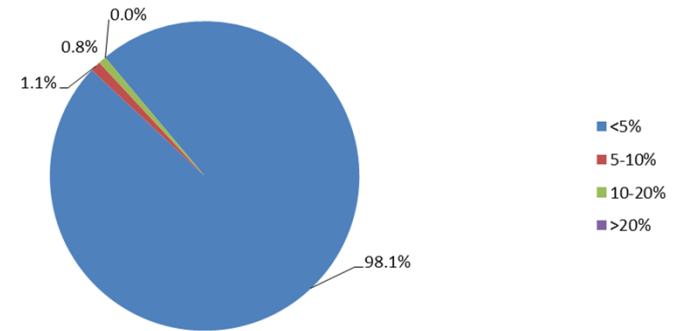
In the last 5 years, 372 dosimetry audits in radiotherapy were performed by the IAEA/WHO in 23 countries in Africa. This constitutes 12% of all audits in the whole world.

# IAEA/WHO dosimetry audit results

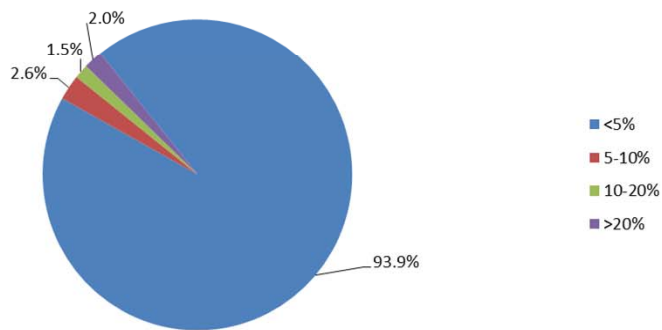
**AFRICA 2012-2016 BEFORE FOLLOW UP**



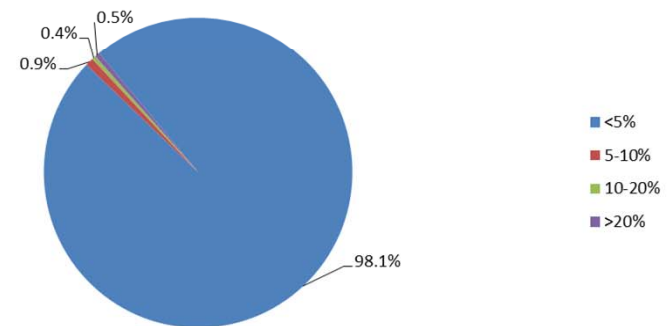
**AFRICA 2012-2016 AFTER FOLLOW UP**



**WORLD 2012-2016 BEFORE FOLLOW UP**



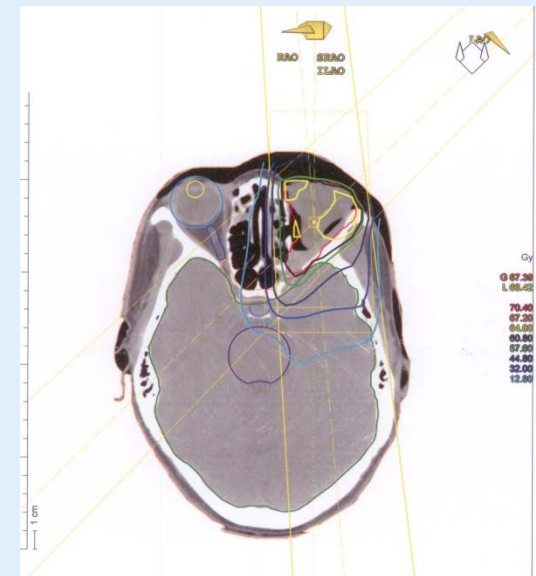
**WORLD 2012-2016 AFTER FOLLOW UP**



The results in Africa are similar to those in the whole world: approx. 2% of poor results remain unexplained due to lack of response to IAEA efforts.

# Audits for quality improvement

- National initiatives using the Technical Cooperation mechanism: ALG, GHA and SAF
- Regional projects (multidisciplinary approach)
- Participation in IAEA Contract Research Projects focussing on quality assurance and audits:
  - Treatment planning systems
  - Small field dosimetry
  - Accuracy requirements



# QUATRO in Africa

- Anglophone and Francophone regional workshops on training auditors
- South Africa: 4 centers audited in 2004
- Zambia 2009
- South Africa 2015
- Morocco 2015 and 2016
- Mauritania 2017
- Serves as an internal audit guide





# Opportunities

- Good Level 1 auditing culture achieved in Medical Physics
- Regional projects encourage QUATRO activities, including training of auditors
- National and sub-regional internal/external auditing can grow with medical physics and dosimetry metrology capacity. There are new TC projects related to auditing.
- IAEA documentation on good practice including education, transitioning and transfer of technology.



