



60 Years

IAEA

Atoms for Peace and Development

IAEA DIRECTORY OF RADIOTHERAPY CENTRES (DIRAC)

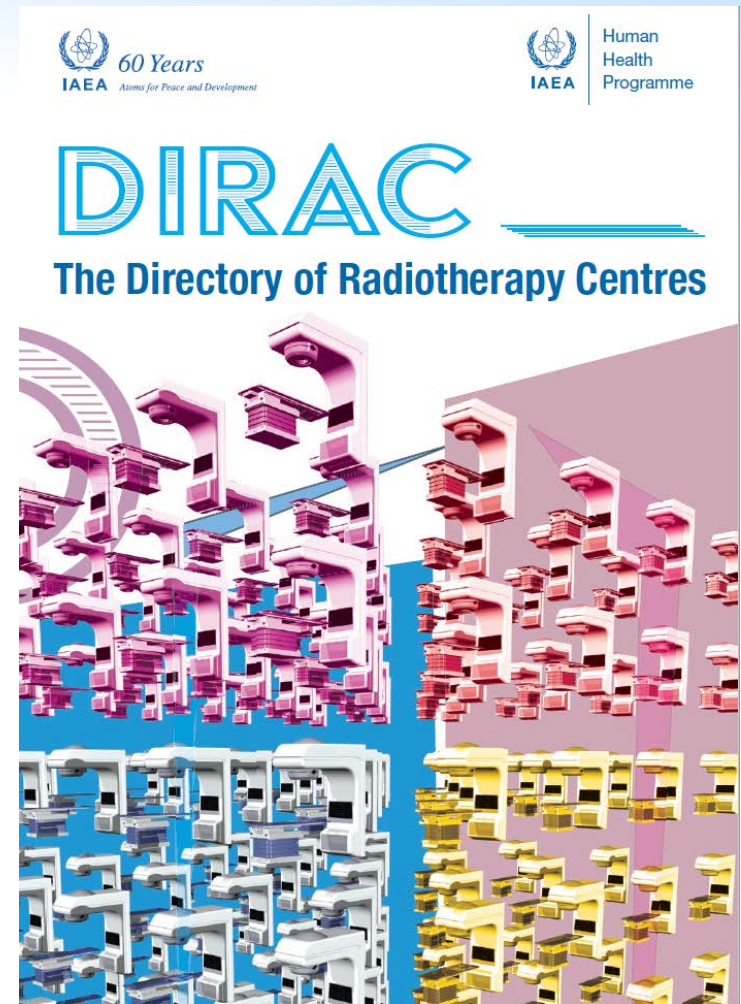
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What is DIRAC?

- DIRAC is the only database of radiotherapy resources worldwide available today.
- DIRAC contains data on radiotherapy machines, radiation sources and related devices, and staff at radiotherapy centres.
- DIRAC is updated regularly based on voluntary data submission by radiotherapy centres.



DIRAC milestones

- 1959 IAEA starts registering radiotherapy centres
- 1968 first edition of the “Directory of High-Energy Radiotherapy Centres”
- 1976 2nd edition of the directory
- 1995 IAEA launches the DIRAC project
- 2000 DIRAC available on CD ROM
- 2004 DIRAC available online
- 2006 online data entry by users
- 2016 IAEA launches a new and enhanced DIRAC platform with interactive maps

Data collection for DIRAC

- Individual radiotherapy centres
- Participants in the IAEA/WHO postal dose quality audits for radiotherapy centres
- IROC-Houston QA Centre
- National databases
- Participants in IAEA sponsored training
- Professional societies
- National coordinators officially nominated by governments
- Manufacturers of radiotherapy equipment
- IAEA field missions.

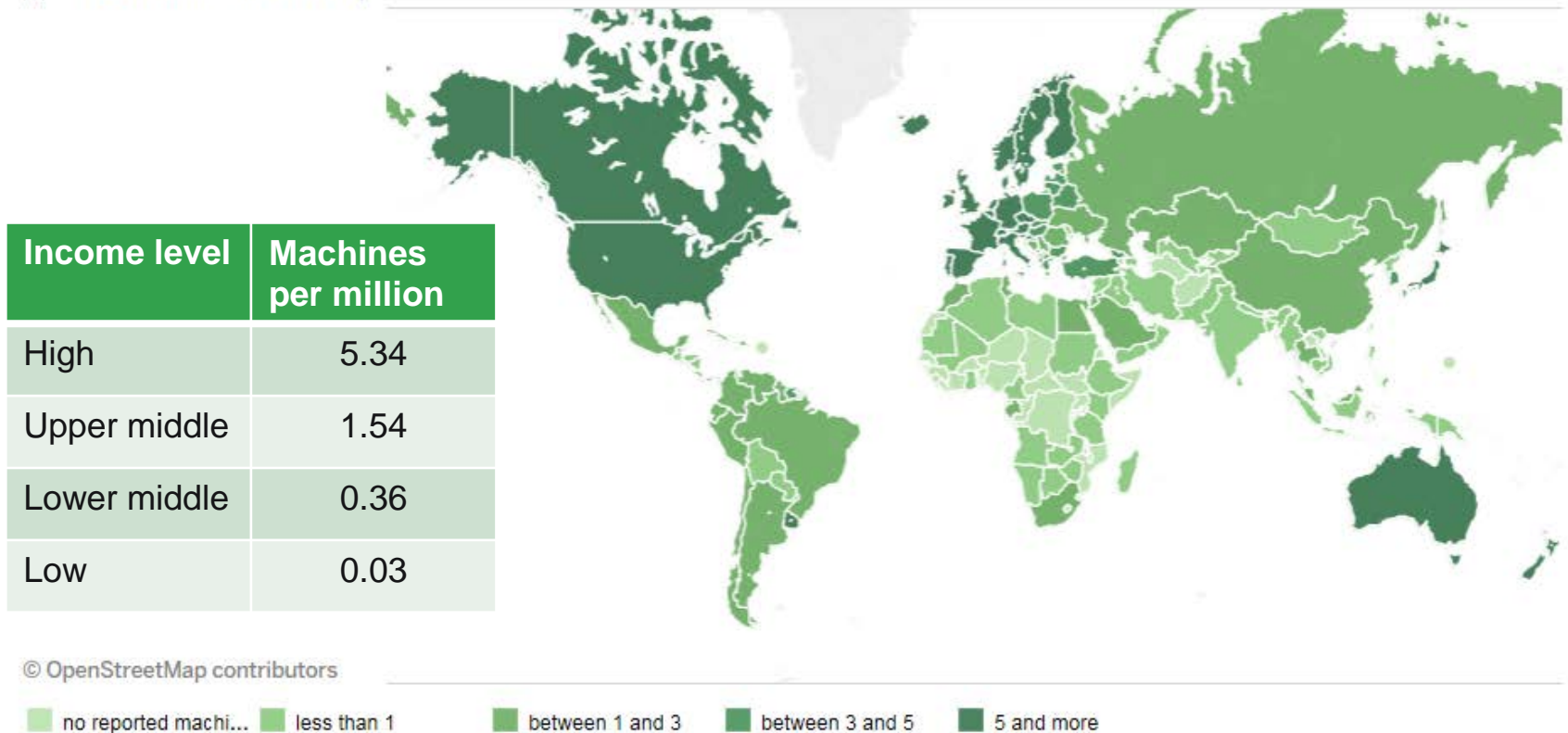
Current status of DIRAC data

- Data on over 7000 operational radiotherapy centers in 139 countries organized in 15 geographical regions
- Approx. 14000 operational teletherapy machines (~11500 linacs, ~2200 Co-60 units, >100 particle accelerators)
- More than 2500 brachytherapy units
- Approx. 6700 treatment planning systems, 3700 simulators, 3600 computed tomography systems
- Approx. 69000 staff (23600 radiation oncologists, 10700 medical physicists, 34700 radiation therapists)

Availability of radiation therapy

Number of Radiotherapy Machines Per Million People

(Updated on : 01/06/2017 07:17:12)

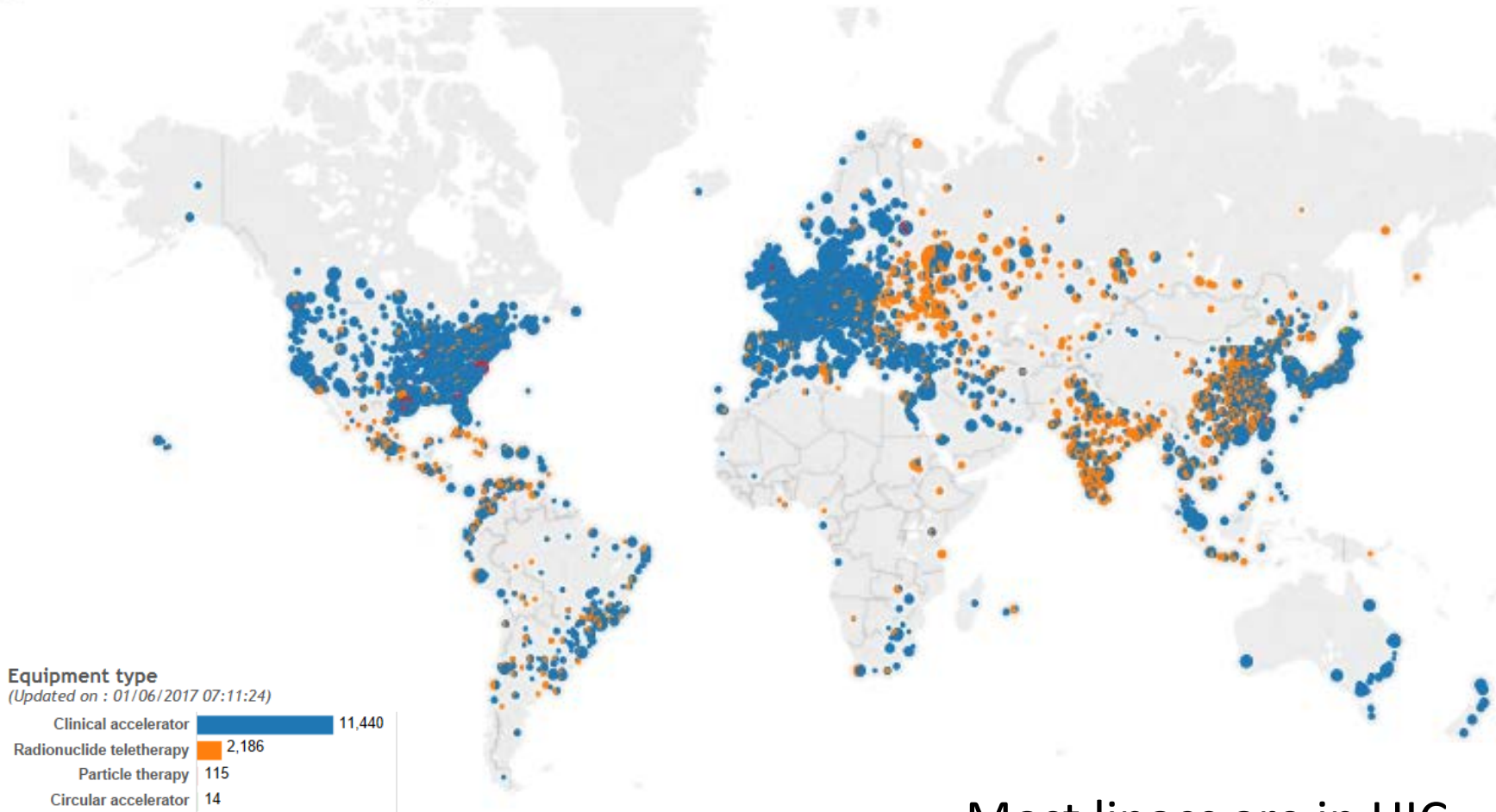


Of the 55 African countries registered in DIRAC, only 24 operate radiotherapy services with 342 radiotherapy machines serving 1.2 billion population.

Co-60 units vs linacs

Radiation therapy centers

(Updated on : 01/06/2017 07:11:24)



Most linacs are in HIC.

Most Co-60 units are in Eastern Europe and Asia.

Equipment age

Equipment age

(Updated on : 01/06/2017 07:11:24)



Most new installations are linacs.

Approx. 370 RT machines still in use are >30 years old.

DIRAC important facts

- DIRAC contains information on 196 countries and territories of more than 100,000 population; of these, 139 countries operate radiotherapy services.
- There is no radiotherapy in 36 countries and no information in DIRAC about further countries.
- LIC and LMIC have less than 10% of teletherapy machines which serve almost 50% of the world population, whereas HIC have over 60% of all teletherapy machines and 16% of the world population.
- There is a similar disparity trend regarding cancer incidence.

Summary

- The results of DIRAC data analysis highlight disparities across geographical areas and economy levels, and indicate deficit of radiotherapy equipment needed for cancer treatment in low and middle income countries.
- Efforts are being made to keep DIRAC data at a level of quality that it can be used for various radiotherapy data analyses.

Thank you

DIRAC can be accessed at the IAEA website at
<https://dirac.iaea.org>

