

Challenges of delivering radiation therapy in developing countries

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Kingdom of Thailand

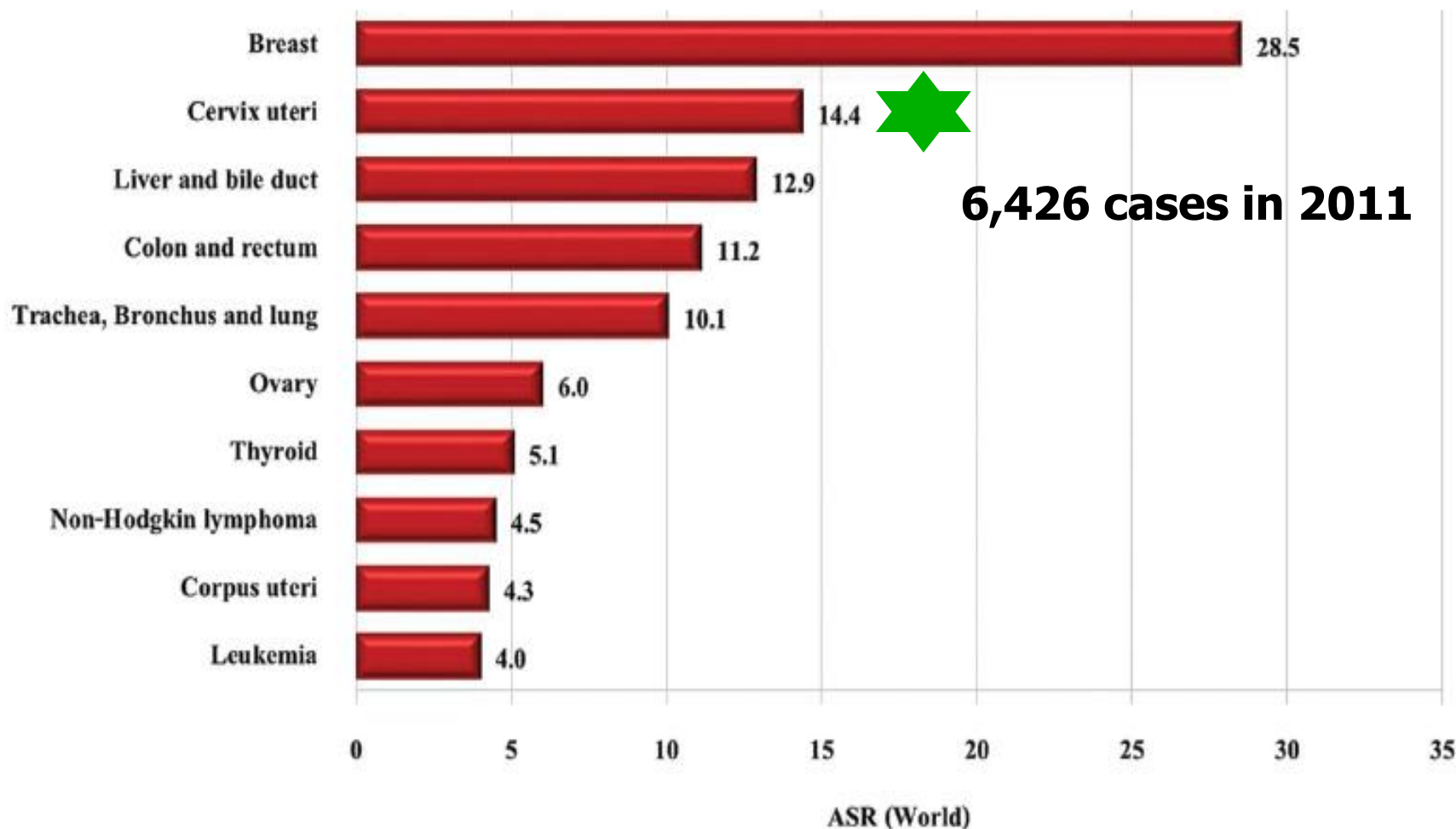


■ Capital	Bangkok
■ Provinces	77
■ Population	67 m
■ Area	513,120 sq.km.
■ Pop Density	132 man/sq.km.
■ GDP	5,779 US\$/Capita

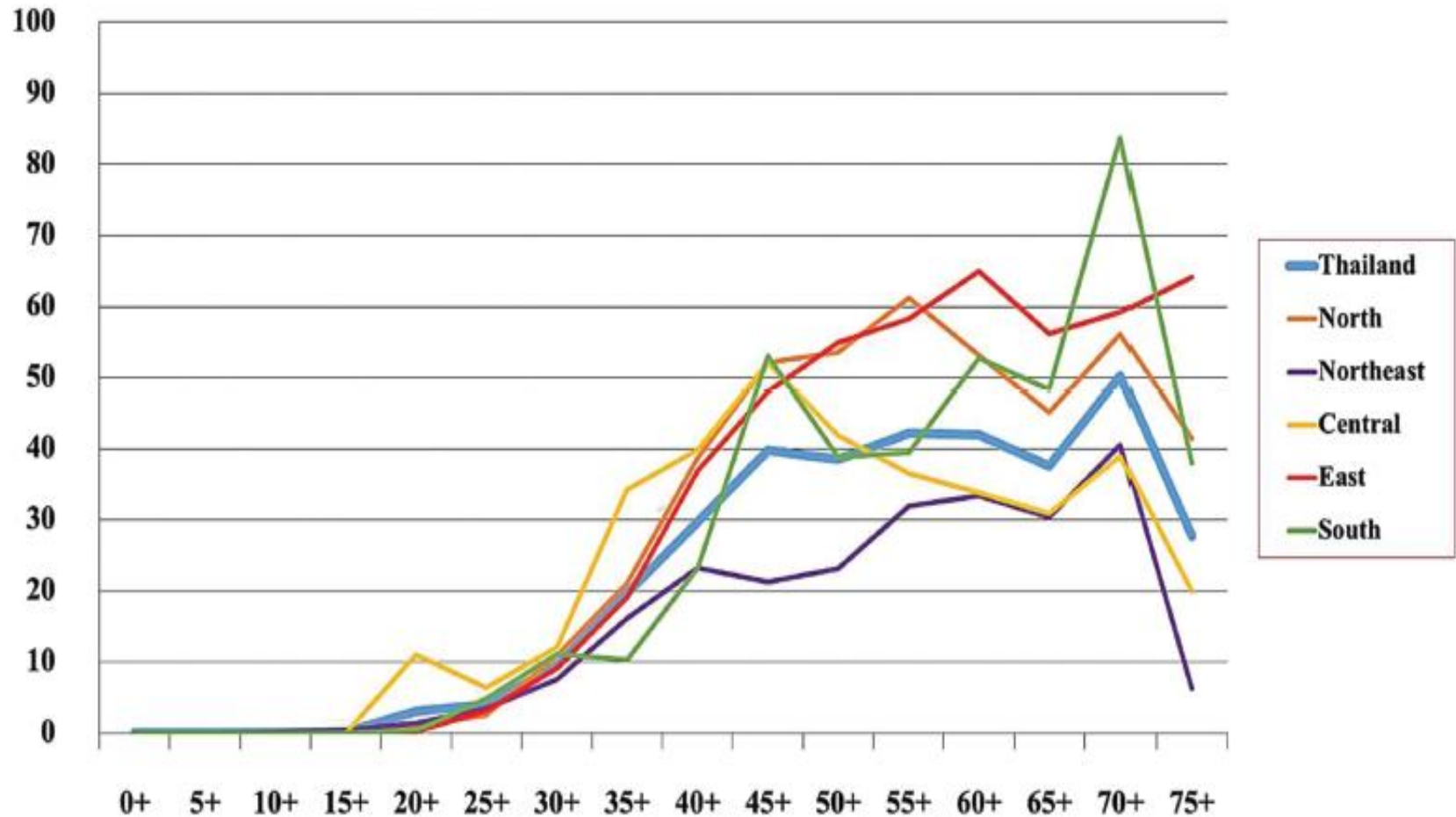
Cancer Statistics



Female leading cancers in Thailand

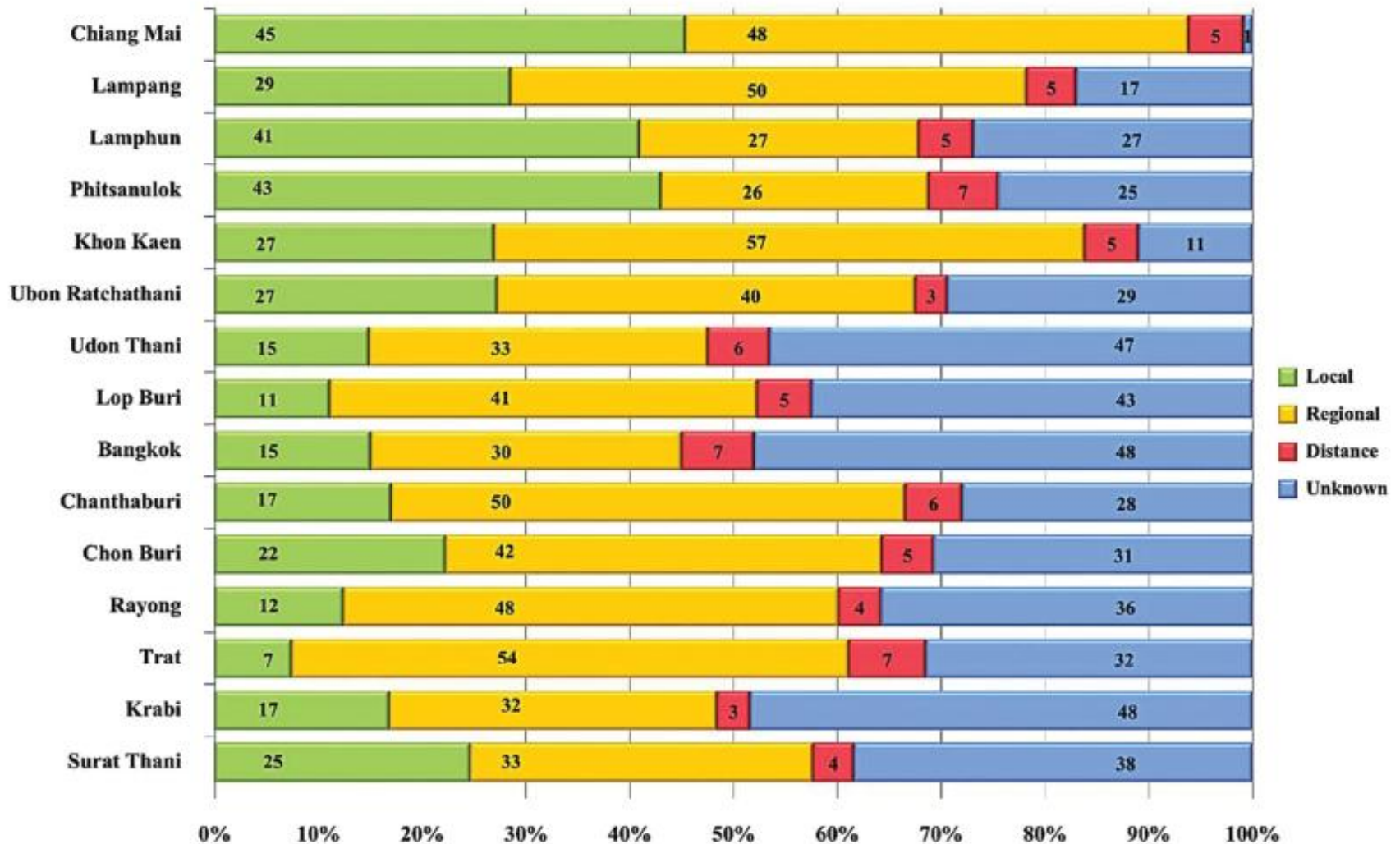


Mean annual ASR of cervical cancer

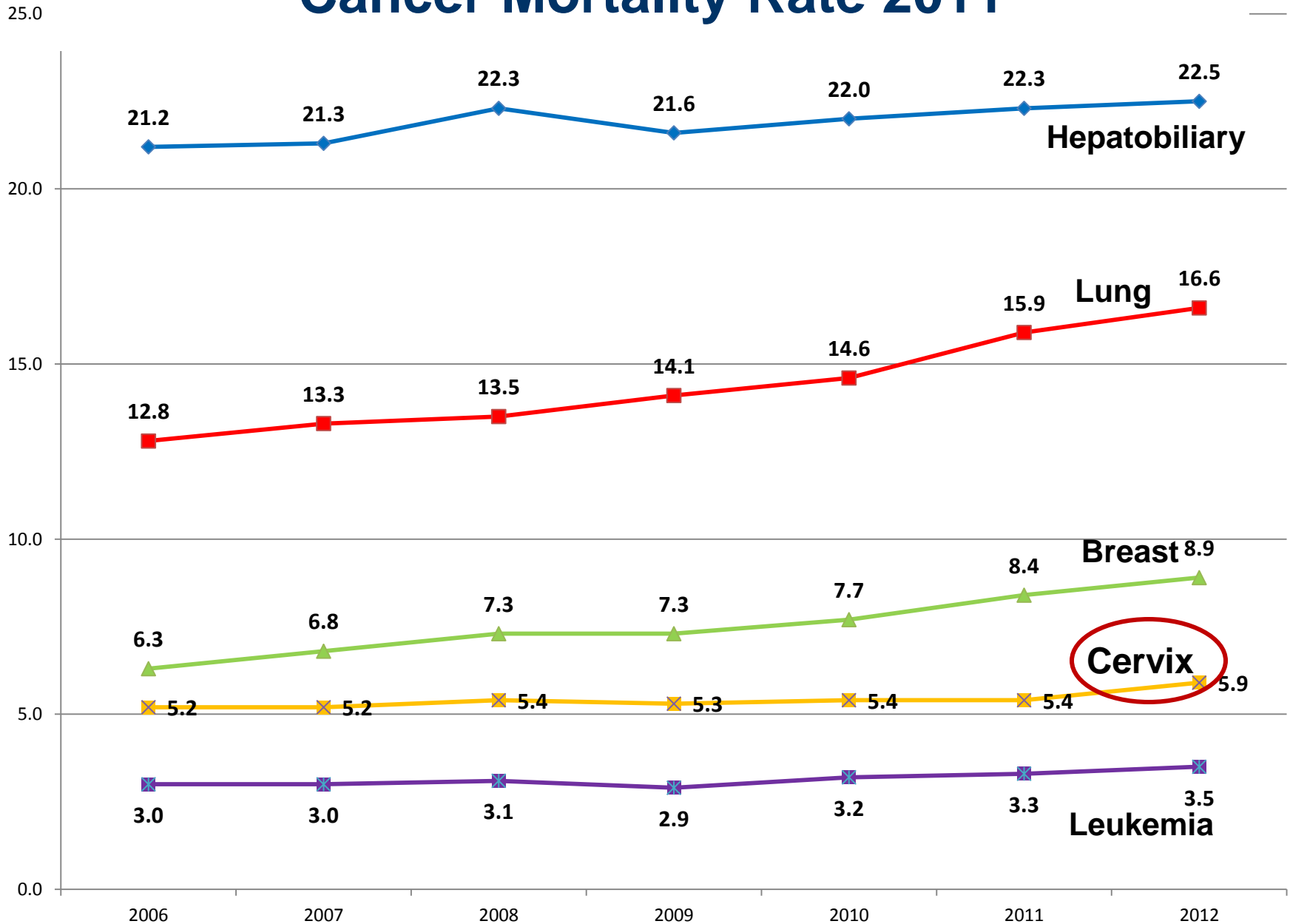


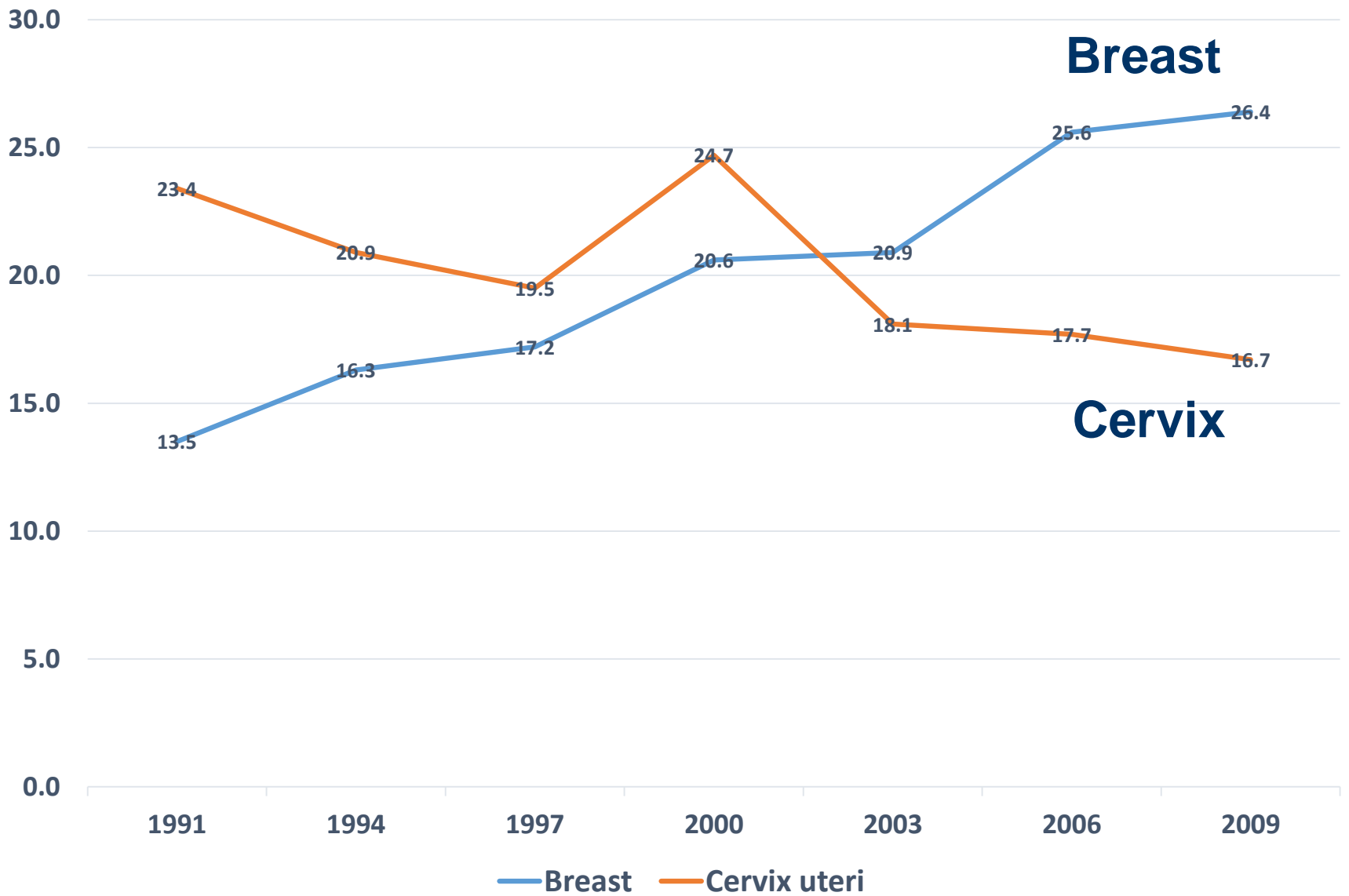
Per 100,000 population

Cervical cancer stage distribution



Cancer Mortality Rate 2011

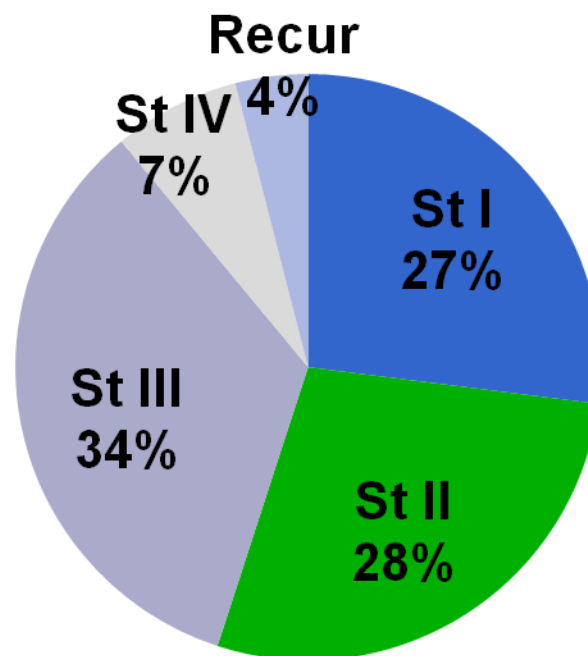




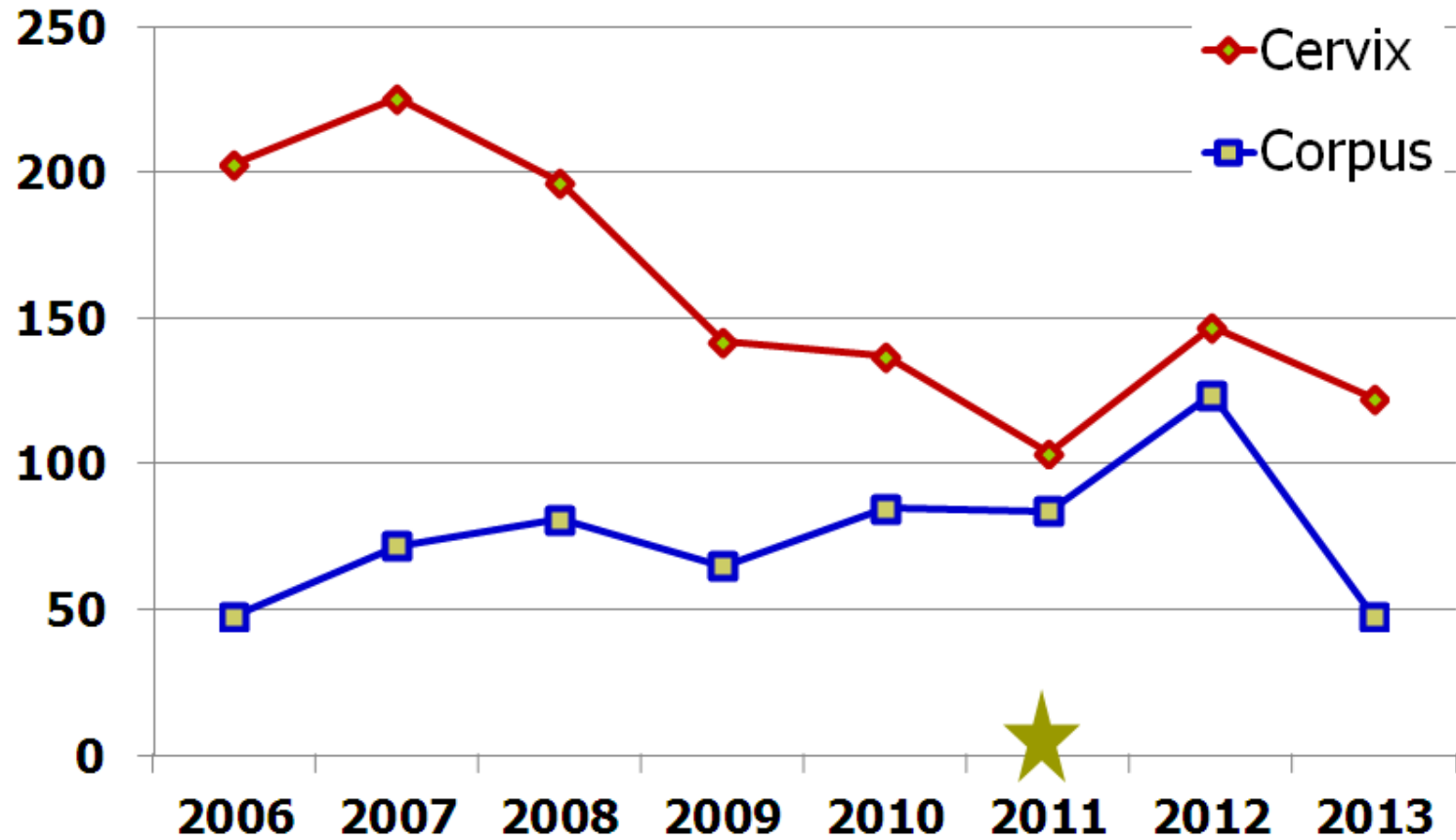
Ramathibodi Hospital 2014

- 3,280 new cancer cases
- Female: Breast 688, thyroid 145, **cervix 138**

- Median age 55 y
- Sq cell CA 80%



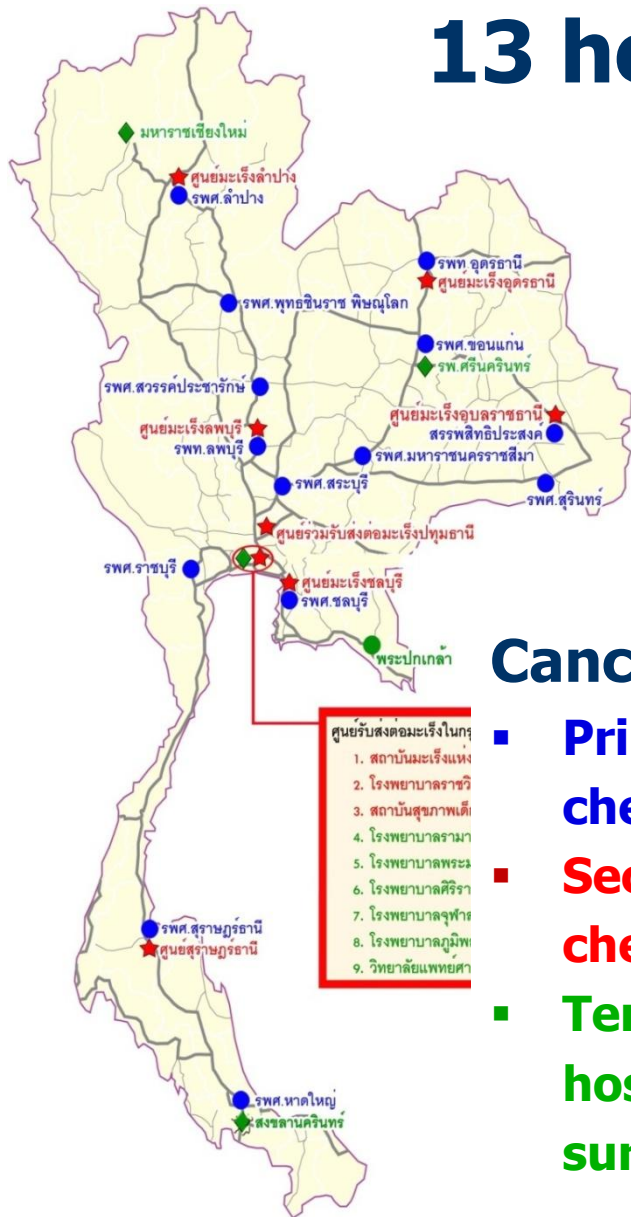
Number of new cases



Health system & Resource



13 health sectors



Cancer care hospital

- **Primary: surgery, chemo**
- **Secondary: surgery, chemo, RT**
- **Tertiary (university hospital): complex surgery, chemo, RT**

- ศูนย์รับส่งต่อมะเร็งในภุ
1. สถาบันมะเร็งแห่ง
 2. โรงพยาบาลราชวิถี
 3. สถาบันสุขภาพเด็ก
 4. โรงพยาบาลรามา
 5. โรงพยาบาลพระ
 6. โรงพยาบาลศิริรา
 7. โรงพยาบาลจุฬาลง
 8. โรงพยาบาลภูมิพล
 9. วิทยาลัยแพทยศา



Man power



■ Radiation oncologist	116
■ Med physicist	93
■ RTT	246

Machine



■ CT simulator	22
■ Co-60	13
■ Linac	62
■ IMRT	25
■ HDR brachy	24
■ LDR brachy	3

Obstacles



PreRT period:

- Waiting time at gyne onco, patho
- Pretreatment evaluation:
 - long-waiting time for CT/MRI
 - PET not covered
- Referral time: reimbursement system

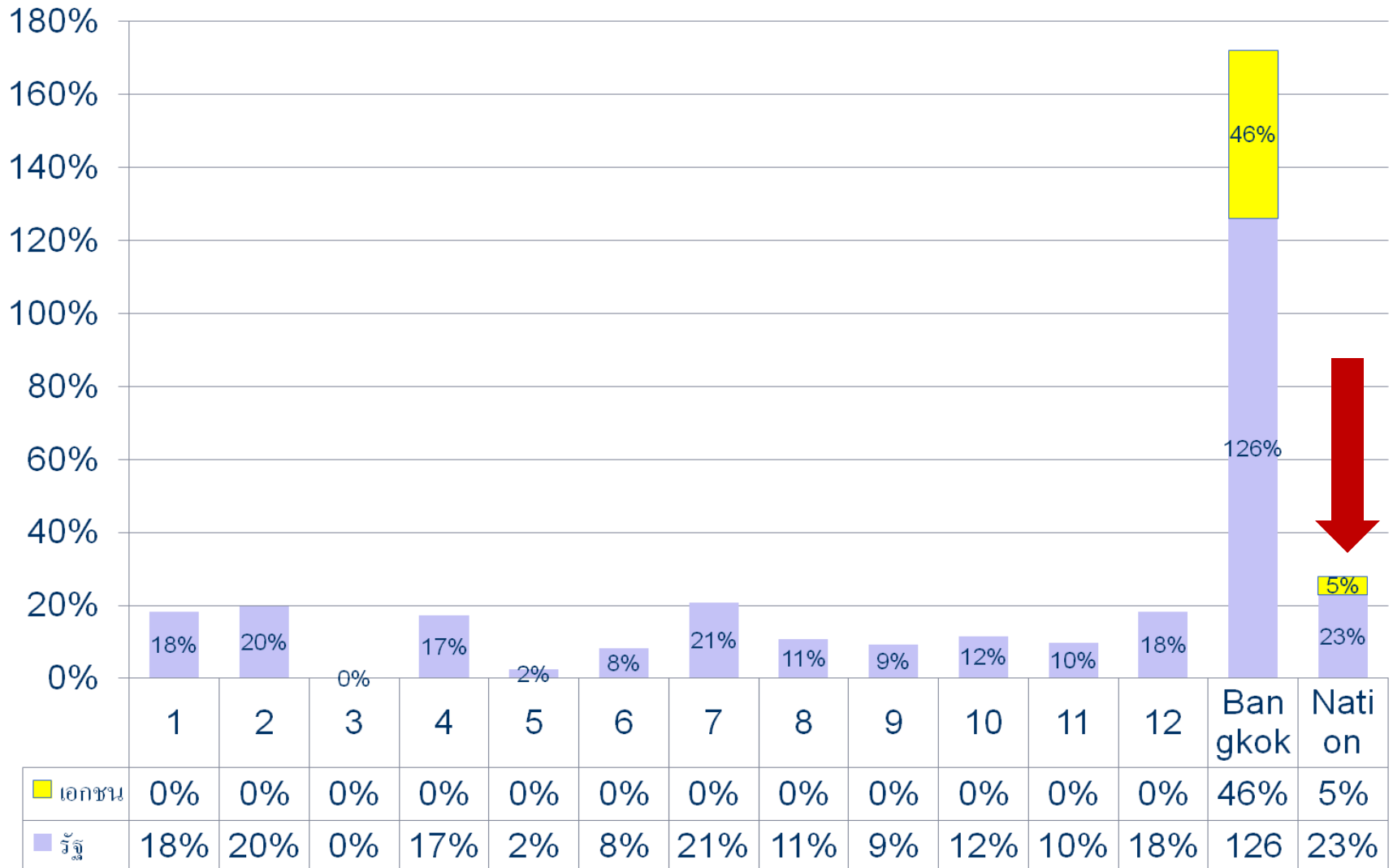
Obstacles



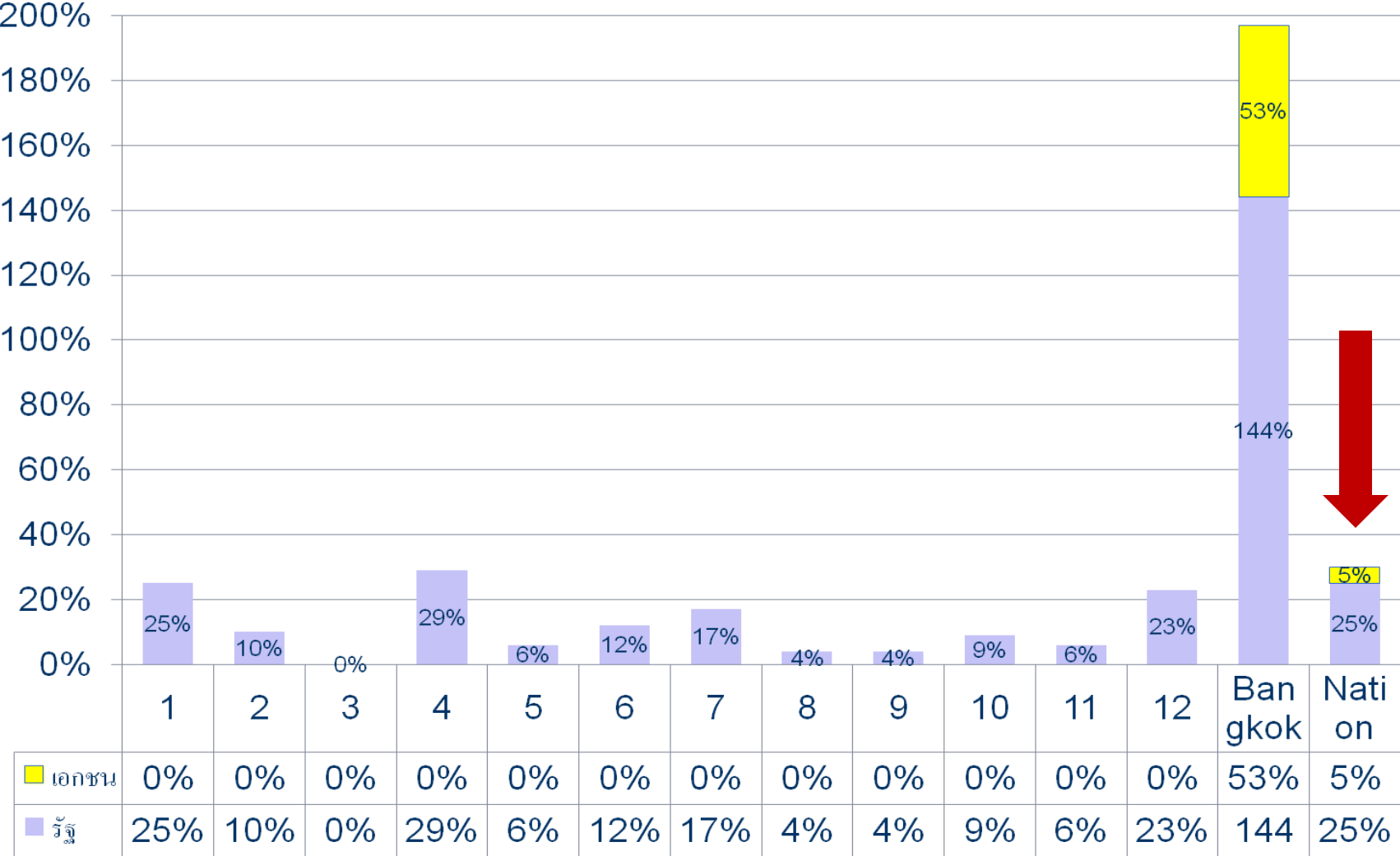
- RT period:** >>inadequate machine (esp LINAC), **shortage of man power**, pt overload
- Waiting time to visit radiation oncologist
 - Waiting time to start RT
 - Hard to perform sophisticated technique: IMRT or even 3D for EBRT, 3D-IGBT (MRI rarely available), no dedicated gyne RT



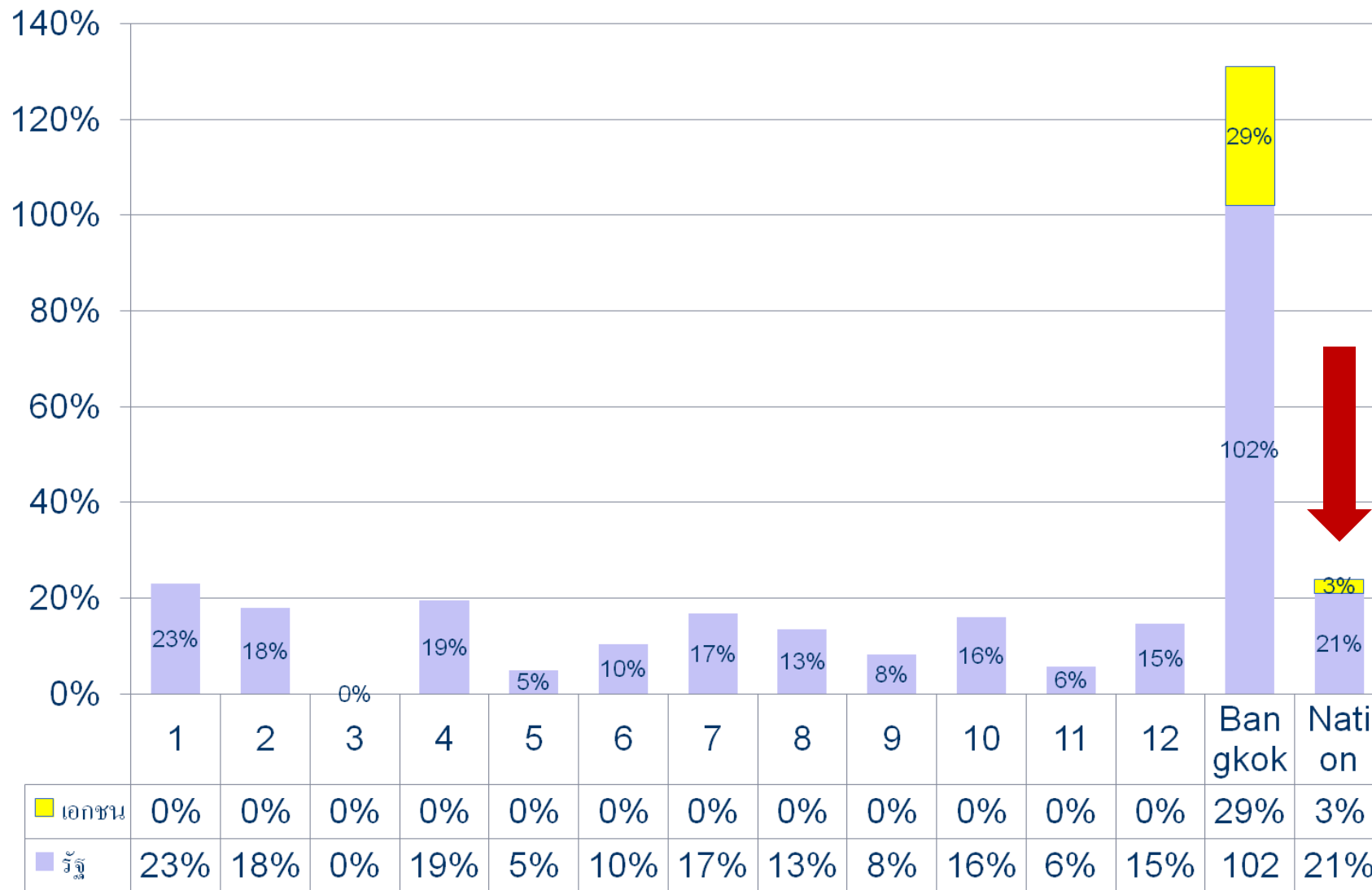
Radiation Oncologist



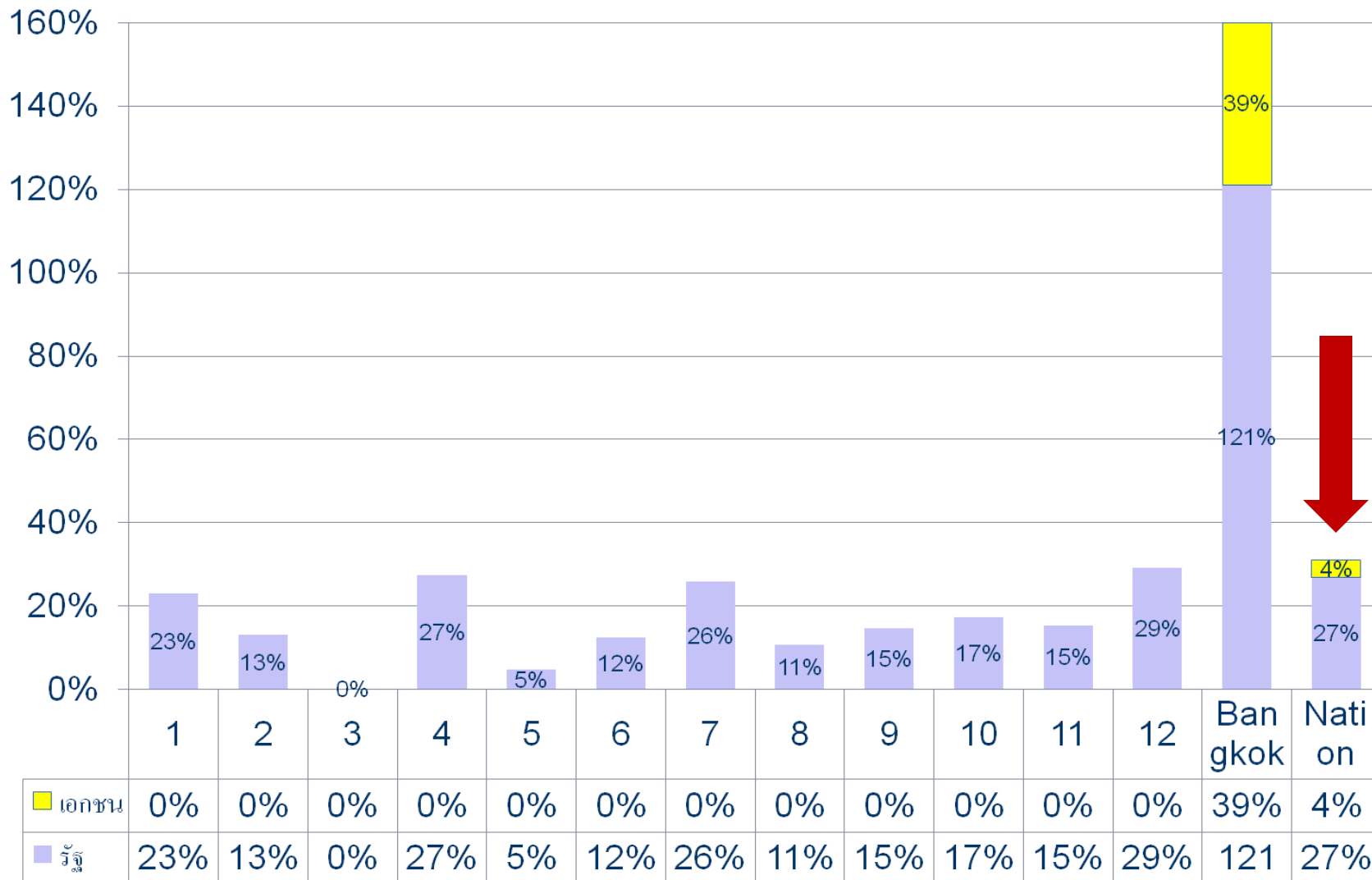
Radiation Physicist



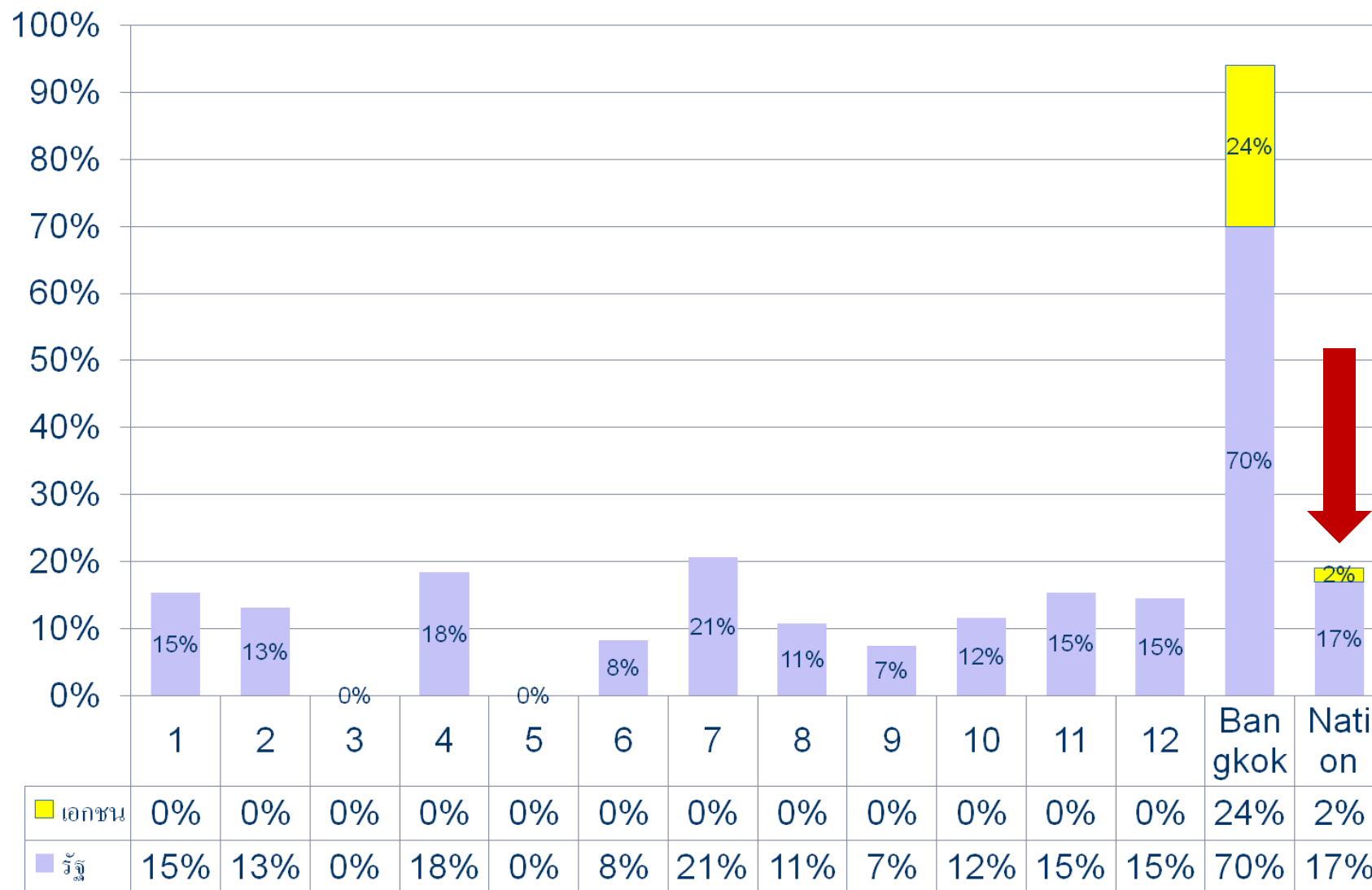
Radiation Therapy Technologists



Megavoltage Machines



HDR unit



Waiting time



	Dx – fist visit with rad onc (day)	Visit with rad onc – start RT (day)
Medical school	0-45 (10)	5-62 (24)
Public general hospital	0-150 (29)	1-32 (14)
Public cancer hospital	0-33 (13)	2-45 (20)

CHALLENGES OF MAKING RADIOTHERAPY ACCESSIBLE IN DEVELOPING COUNTRIES



MASSOUD SAMIEI¹, INDEPENDENT INTERNATIONAL EXPERT

COLLABORATING WITH THE IAEA, WHO, IARC, UICC, OXFORD UNIVERSITY AND INCTR

Following the adoption of the UN resolution on Prevention and Control of Noncommunicable Diseases (NCDs) in 2011, and the targets set by the World Health Assembly in 2012, health authorities in low- and middle-income countries (LMIC) have embarked on strengthening and integrating NCD policies and programmes into national health-planning processes. In this context, providing equitable and affordable access to cancer care for all who need it, and making the essential medicine, health technologies and specialists available, is a high priority for cancer control, where radiotherapy remains a vital and cost-effective intervention. However, planners and investors in LMIC face major obstacles in the delivery of radiotherapy services, including a shortage of 5,000 megavoltage units; accessibility and affordability of treatment; lack of a workforce of clinicians, nurses and support staff needed to run radiotherapy clinics, and their education and training; the choice of technologies and suppliers; and maintenance of equipment, among others. These challenges are discussed in this paper along with brief references to the IAEA's efforts to address the problem and its PACT initiative.

Thank you

