

Steps Towards Quality Cancer Care Delivery: Lessons from Botswana

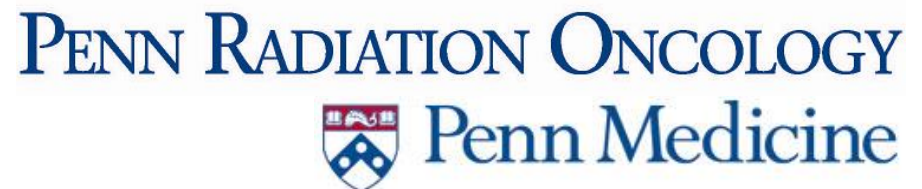
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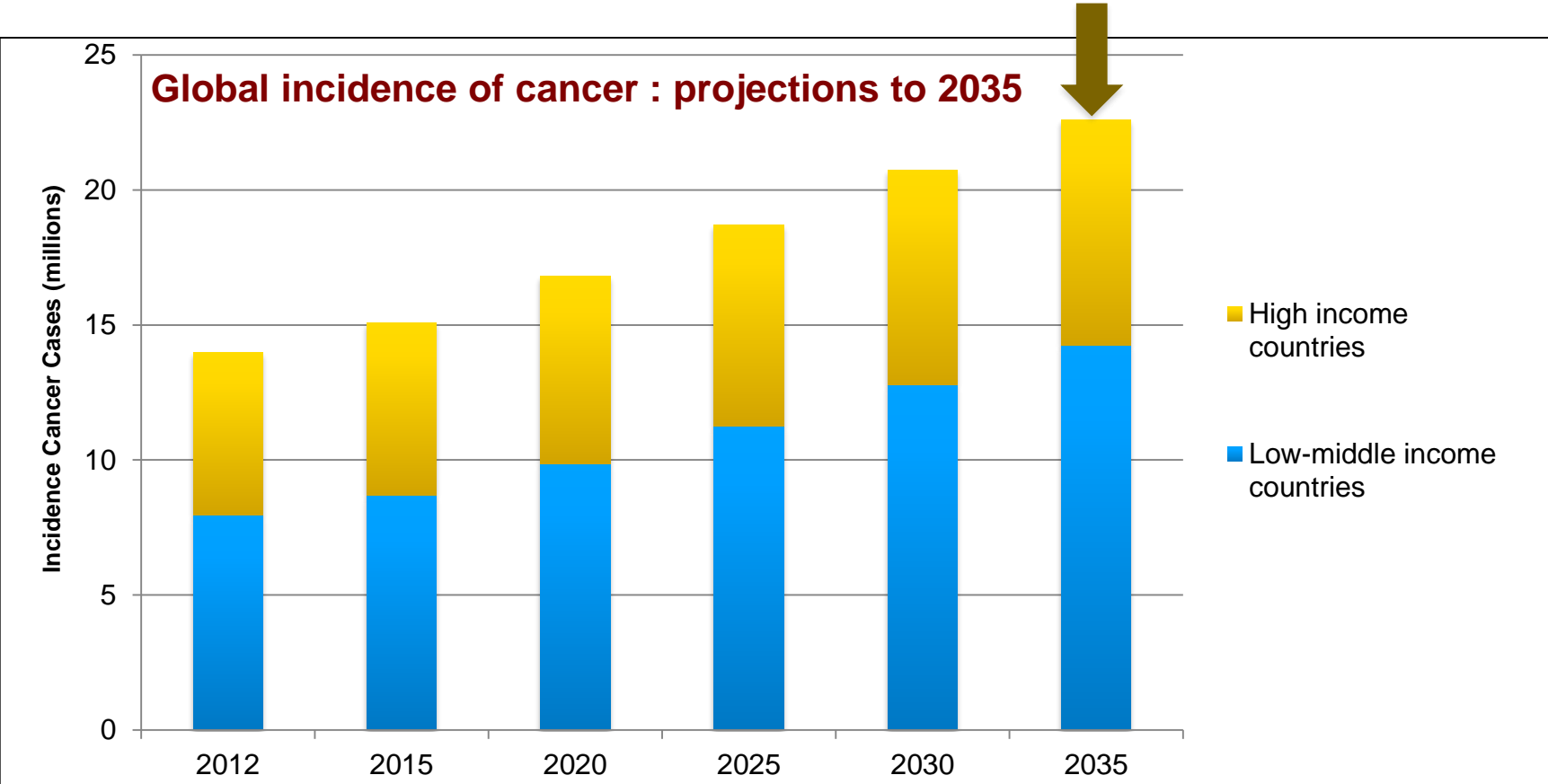
March 2018



Disclosures

- ◆ **None**

Cancer is not just a '1st world problem'



*Raw data for graph provided by Globocan, IARC

Challenges in Radiation in Africa

INFRASTRUCTURE

- ◆ 23 of 54 countries have teletherapy services
- ◆ 20 had high- or low-dose brachytherapy resources
- ◆ 293 radiotherapy machines serving 1 billion individuals
- ◆ 1 machine per 3.6 million people (1 machine per million recommended)

HUMAN RESOURCES

- ◆ 12,149 radiation oncologists, 9915 medical physicists, 29,140 RTT needed to meet the gap

Abdel-Waheb et al. Lancet Oncology 2013
Grover et al. Front in Oncology. Jan 2015
Balogun et al. Radiation Oncology Aug 2016

Challenges in Oncology in Botswana

- ◆ **Lack of screening programs**
- ◆ **High patient load (with most patients at advanced stages)**
- ◆ **Human resources (nurses, radiologists)**
- ◆ **Medical records**
- ◆ **Long time for pathology**
- ◆ **Limited radiology capacity**
- ◆ **Chemotherapy Stockouts**
- ◆ **Fragmented care (HIV and oncology)→ treatment delays**
- ◆ **Lack of communication between private and public hospital**
- ◆ **No follow up after treatment**
- ◆ **Lack of data to inform care**
- ◆ **Lack of uniform and relevant treatment guidelines**





Developing Radiation Capacity

EQUIPMENT

- ◆ **Appropriate equipment**
- ◆ **Servicing of equipment**
- ◆ **Supply chains**

PERSONNEL

- ◆ **Training programs**
- ◆ **Adequate human resources**
- ◆ **Staff retention**

Developing Radiation Capacity

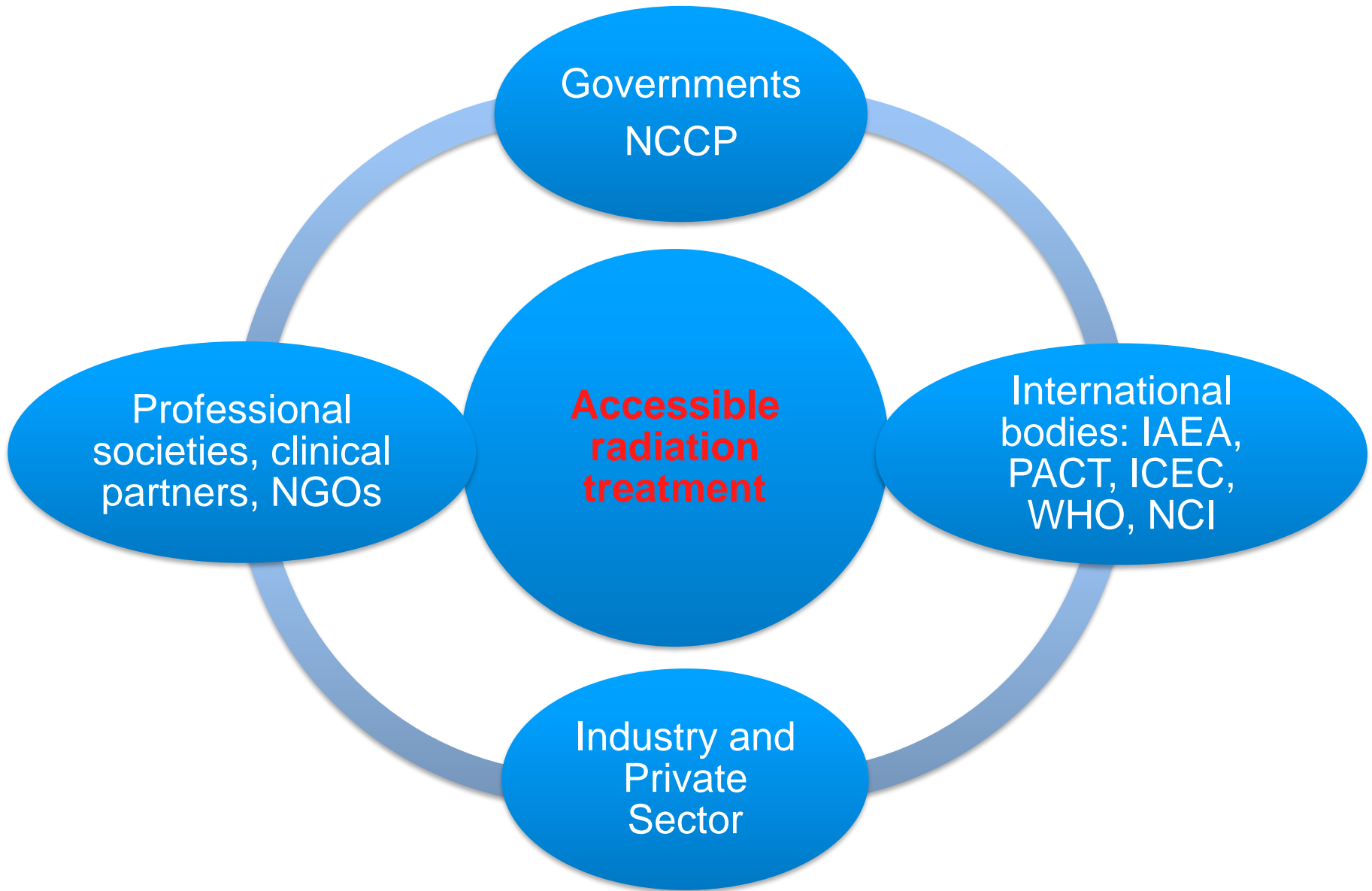
HEALTH SYSTEMS

- ◆ Care pathways
- ◆ Care linkage
- ◆ Guidelines
- ◆ Registries
- ◆ Medical records
- ◆ Patient engagement
- ◆ Follow-up care

POLITICAL COMMITMENT

- ◆ Government commitment
- ◆ Management
- ◆ Training
- ◆ Retention of staff

Multifaceted Approach



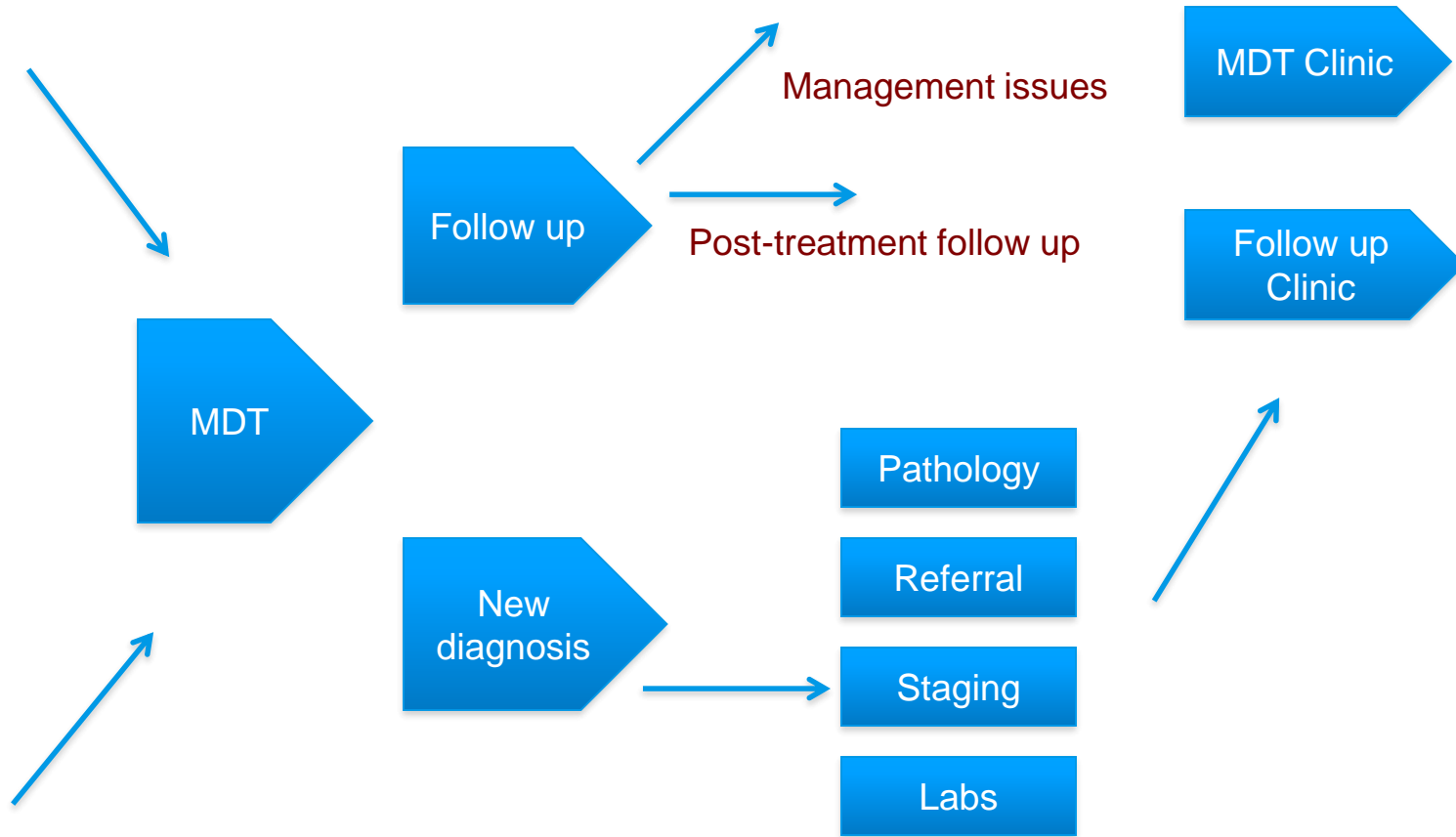
Implementation of Radiation Therapy

- ◆ **Purchase of equipment** (MOH/IAEA/PACT)
- ◆ **Hiring of staff** (MOH/MPWB)
- ◆ **Commissioning and Quality Assurance** (IAEA, MPWB, clinical partners, industry)
- ◆ **Training** (IAEA, ICEC industry, professional societies, clinical partners)
- ◆ **Clinical implementation** (Professional societies, ICEC, clinical partners)
 - ***Workflow***
 - ***Clinical protocols***

Implementation of Radiation Therapy

- ◆ **Continued training and improvement** (Industry, ICEC, clinical partners)
- ◆ **Data collection to demonstrate improved outcomes** (NCI, clinical partners, MOH)
- ◆ **Continued advocacy and patients education** (NGOs, local and international cancer societies)
- ◆ **Strengthening health system for cancer care** (MOH/NCCP)
- ◆ **Retention of staff** (MOH)
- ◆ **Development of training program** (MOH, IAEA, clinical and educational partners)

Workflow of Gynecology MDT



Cervical Cancer CRT/RT Patients	Post-MDT	Pre-MDT
Average Delay from Bx to Treatment (days)	60.12	120
Average Delay from Clinic Visit to Treatment (days)	24.6	

Grover et al Journal of Global Oncology 2016

OPCare

- ◆ **Patient tracking system being piloted in Gyn MDT clinic**
- ◆ **Smartphone application based system with PHI/HIPAA compliance**
- ◆ **Track patients at various points in care pathway and treatment and also sends SMS reminders**
- ◆ **Also serves as an EMR**

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Areas we need to work on

- ◆ **Technology: low cost, less reliant on resources (ICEC-CERN-STFC)**
- ◆ **Developing cadre of experts on the ground (IAEA)**
- ◆ **Close alliances with ministries of health with continued technical support for development of cancer systems**
- ◆ **Regional consortia to build a network of regional experts working in similar areas (AORTIC)**
- ◆ **Regional training/continued learning programs (Chartounds)**
- ◆ **Developing a network of international partners for more sustained training and support (Pathology and Gyn Oncology in Botswana)**

International Collaborations

- ◆ **ICEC: Boots on the ground**
- ◆ **NCI Center for Global Health**
- ◆ **IAEA**
- ◆ **AORTIC Special Interest Group in Radiation Oncology:
platform for collaboration in Africa**
- ◆ **Chartrounds**
- ◆ **Professional societies: ASTRO, ESTRO, ASCO, ABS, ASCP**
- ◆ **Academic centers**
- ◆ **OneBCG**

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- ◆ *IAEA*

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