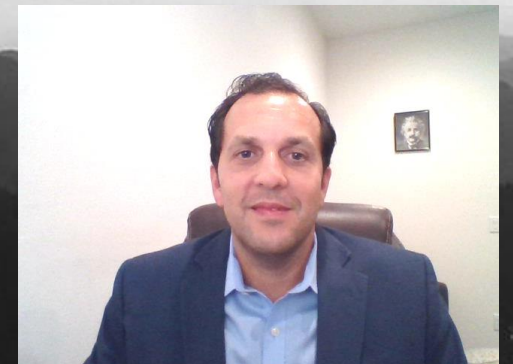


*Insight from Industry*

# How **NOT** to promote the Safe & Effective Adoption of Radiotherapy in LMICs

**Cleverson Lopes**  
**Marketing Manager,**  
**Varian Oncology Systems**



# How **NOT** to promote the Safe & Effective Adoption of Radiotherapy in LMICs?

Cancer burden

Ignoring the cancer problem!



Source: International Agency for Research on Cancer 2018. \*American Cancer Society, Cancer Facts and Figures, 2012. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008

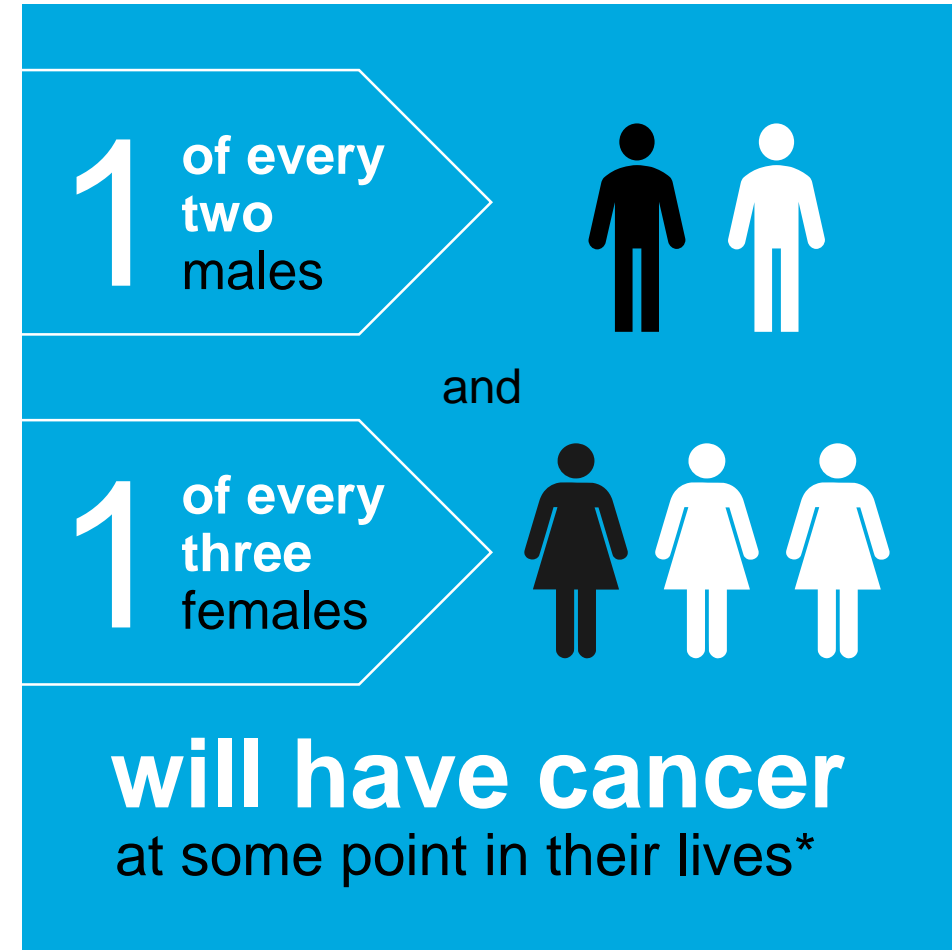
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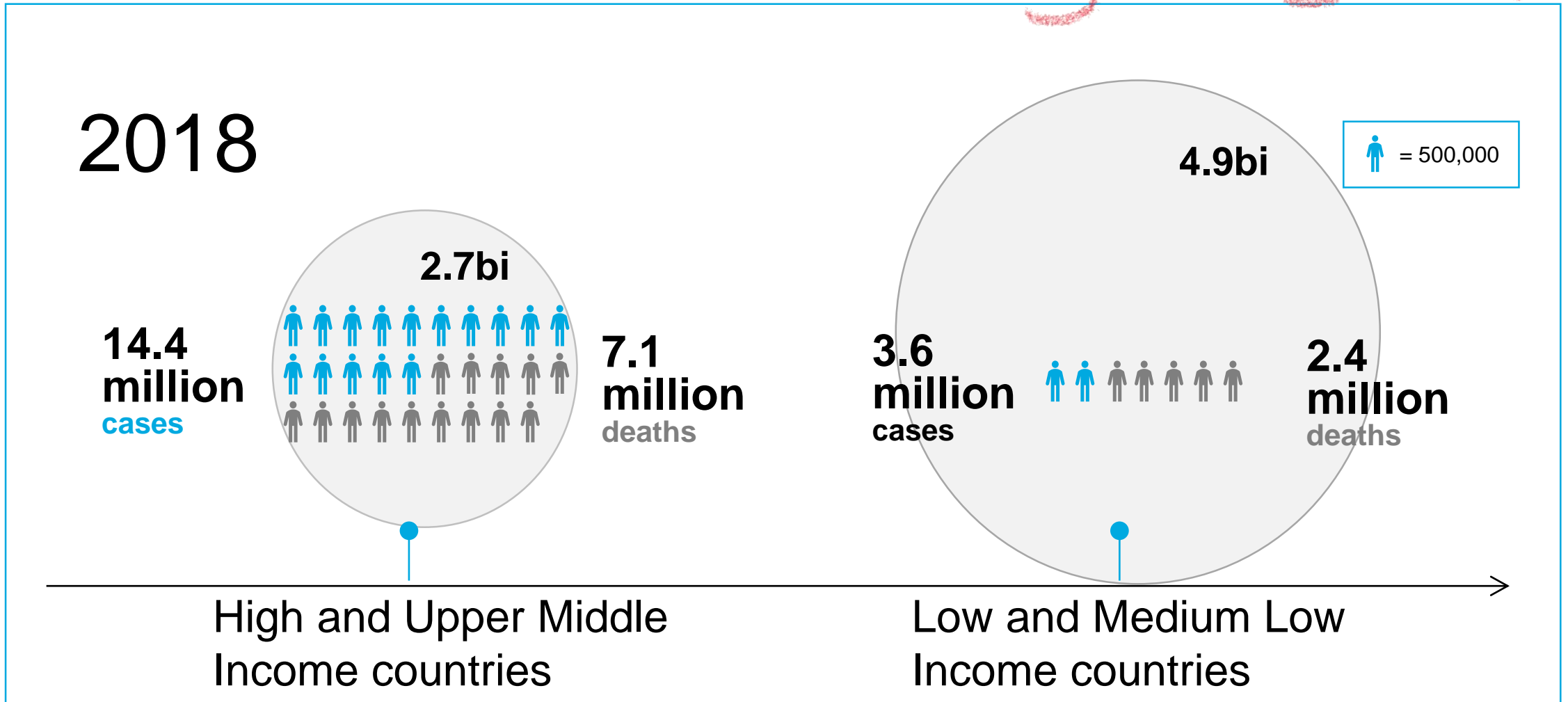


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# Cancer burden HDI

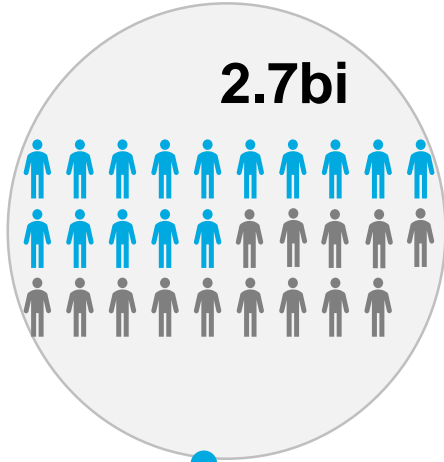
Ignore it?



# Cancer burden HDI

2018

14.4 million cases



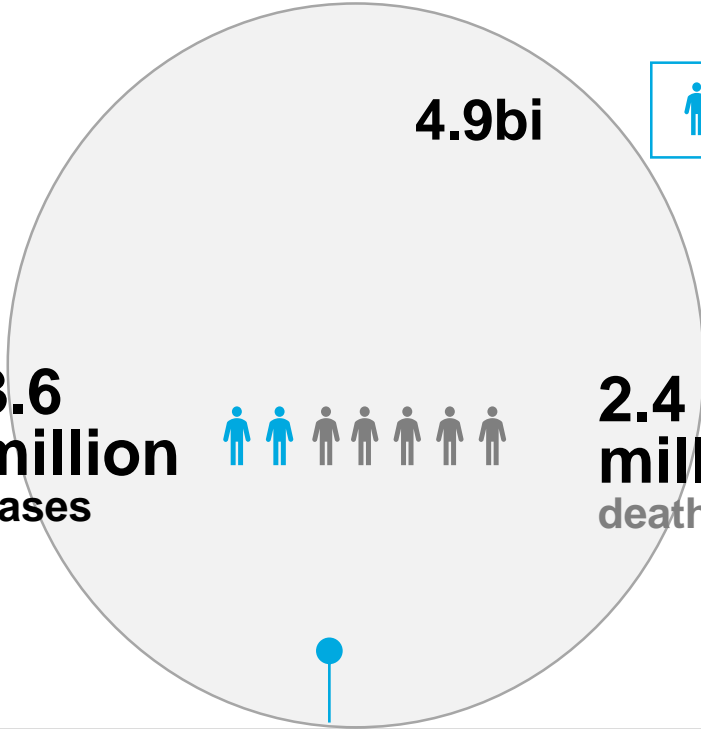
7.1 million deaths

High and Upper Middle Income countries

4.9bi

1 icon = 500,000

3.6 million cases



2.4 million deaths

Low and Medium Low Income countries



# Cancer burden can't be ignored

\*Latin America only

**67%** Increase in  
**Cancer incidence**  
By 2030

People will develop cancer  
**1.7M** By 2030

**Double mortality rate**

Relative to most developed countries

**Half of patients**

Doesn't have access to radiotherapy

**US\$1.98**  
\$18,80 for US

**\*\*RT Cost per capita**

Up to **1.0M**  
**Deaths**

Yearly by 2020\*

**49%**

Chile's mortality-to-incidence ratio

**50% machine's**

Are becoming obsolete

by 2021\*

\*Source: Decision-making for cancer care: A review of current practice and opportunities for improvement in Latin America. A report by The Economist Intelligence Unit. 2019.

\*\*Source: Analysis of Global Radiotherapy Needs and Costs by Geographic Region and Income Level. Clinical Oncology. 2017.



# Human capital

Don't ignore the investment in human

## What is Needed

Radiation Oncology Centers	7,700	<b>GAP</b>	
Linear Accelerators	13,100	3,200	10,900
Radiation Oncologists	23,200	21,800*	21,800
Medical Physicists	10,000	22,300	45,500
Radiation Technologists	33,300	29,300	39,300
		96,900	130,200

2015

2035

**People, AI and data are key  
to closing the gap**

- ✓ Quality
- ✓ Simplicity

- ✓ Efficiency
- ✓ Automation

Source: Expanding global access to radiotherapy. Lancet Oncol. Vol 16, Sept. 2015  
\* 8,700 new machines + 13,100 replacements = 21,800 machines needed



not promote?

really?

**High quality**  
**Effective**  
**Equitable**  
**Timely**  
**Safe**  
**Cost effective**  
**Patient centered**

Source: Expanding global access to radiotherapy.  
The Lancet Oncology Commission.

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# Don't value technology investments

## Language

Software, GUI, message displays, training and manuals



## Product design

Easy to operate, integrated, rich messages and reliable

**Safe**  
**Effective**

**Staff Training and support**  
Clinical and technical



**Maintenance and Logistics**  
Proper parts and labor

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Industry role



# Challenges for rt adoption

## LMICS

### Radiotherapy Personnel

- Unprepared, unengaged - no stimulus for implementation
- Language barriers
- No continuous education programs
- Low cooperation
- Very low scientific production locally leads to lower reimbursement levels

### Geographic coverage

- Geographical distribution of local support
- Training and maintenance in remote area
- Slow shipment and customs

### Country costs and Financial limitation

- Product registration Costly and lengthily
- Customs challenges
- Low credit available
- Low reimbursement – constrained budgets for purchasing capital equipment, maintenance, additional training

# Challenges of the industry

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# Industry role in LMICs

## High-quality

Advanced treatment on entry level equipment's, better image quality and scripted AI, contouring, planning & monitoring

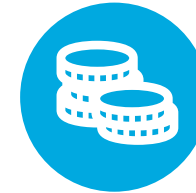


## Safety

Solutions with Intuitive design, appropriate language and adequate services – Market

## Patient Centered

Improve patient comfort, personalization, reduce planning and treatment time



## Cost & Effective

Develop technologies that attend the urgent needs of today

## Timely – High availability

Fast installation, adequate training, well defined QA, pre-commissioned machines, remote service monitoring



## Collaboration

Create a network of partners. Customers, governments, patients and professional associations





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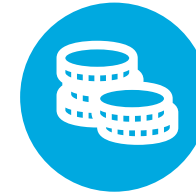


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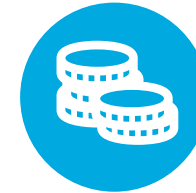


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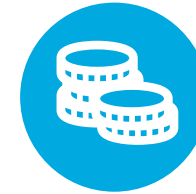


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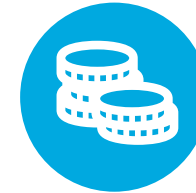


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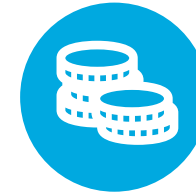


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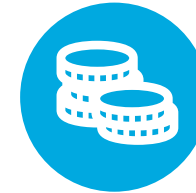


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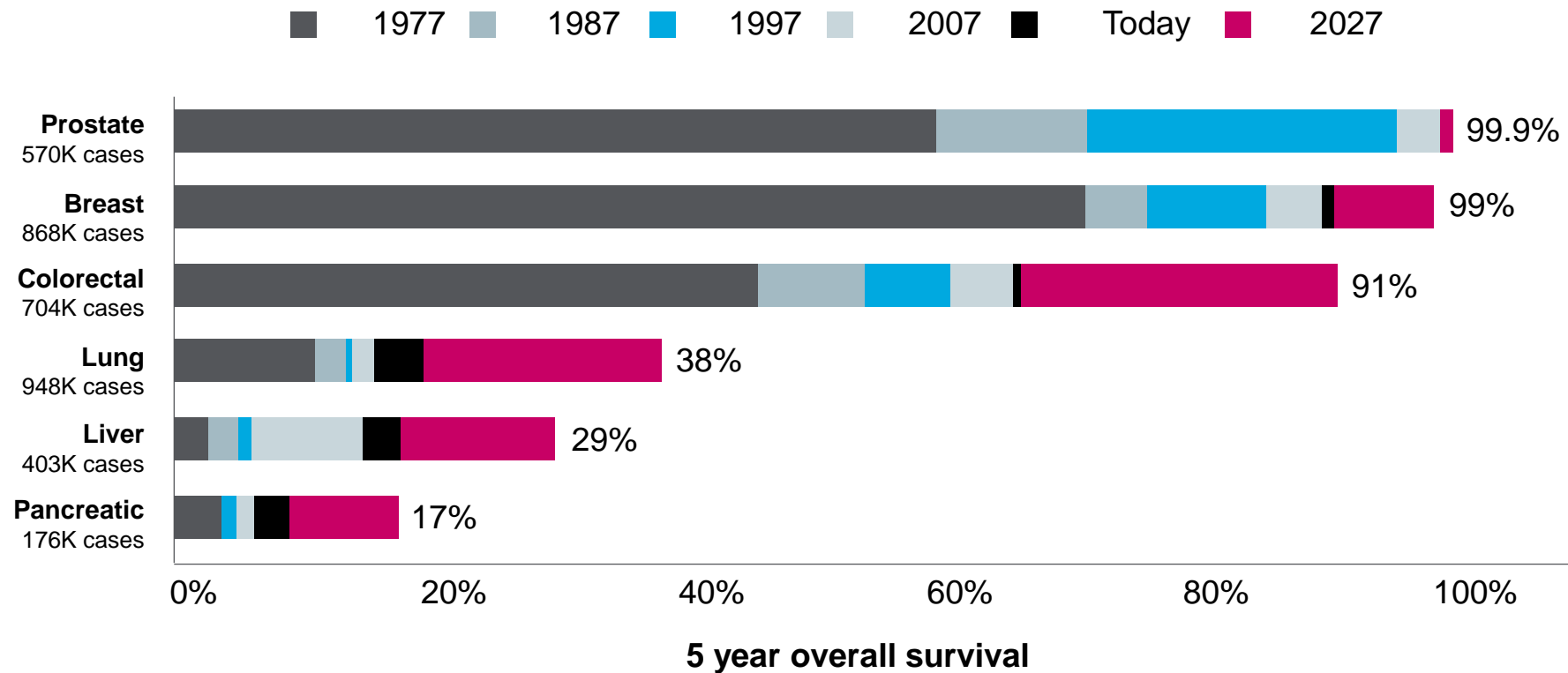
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# Innovation driving increasing overall cancer survival

A world without fear of cancer is on our horizon



\*Forecasted survival rate based on increases in treatment efficacy (Phase 2/3 data) and liquid biopsy availability. Artificial lungs, livers, and pancreas are under development but are not expected to be commercialized by 2027.

**varian**

