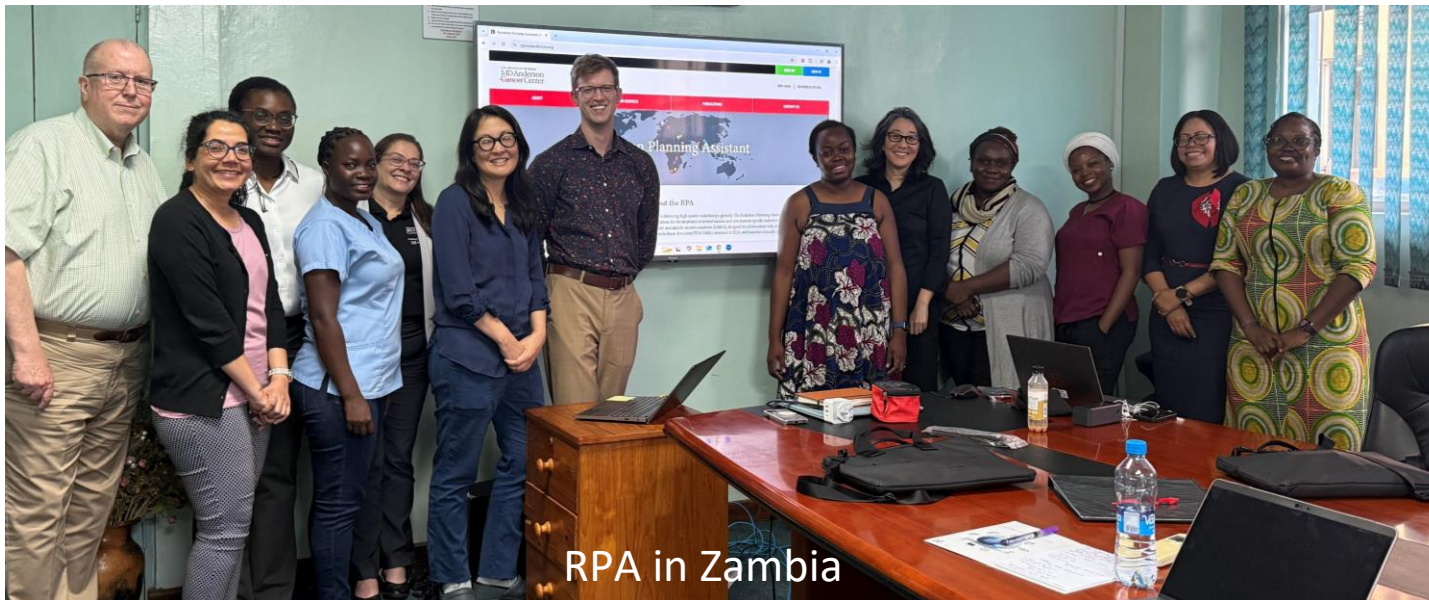


# The Radiation Planning Assistant: AI to improve access to high quality radiotherapy

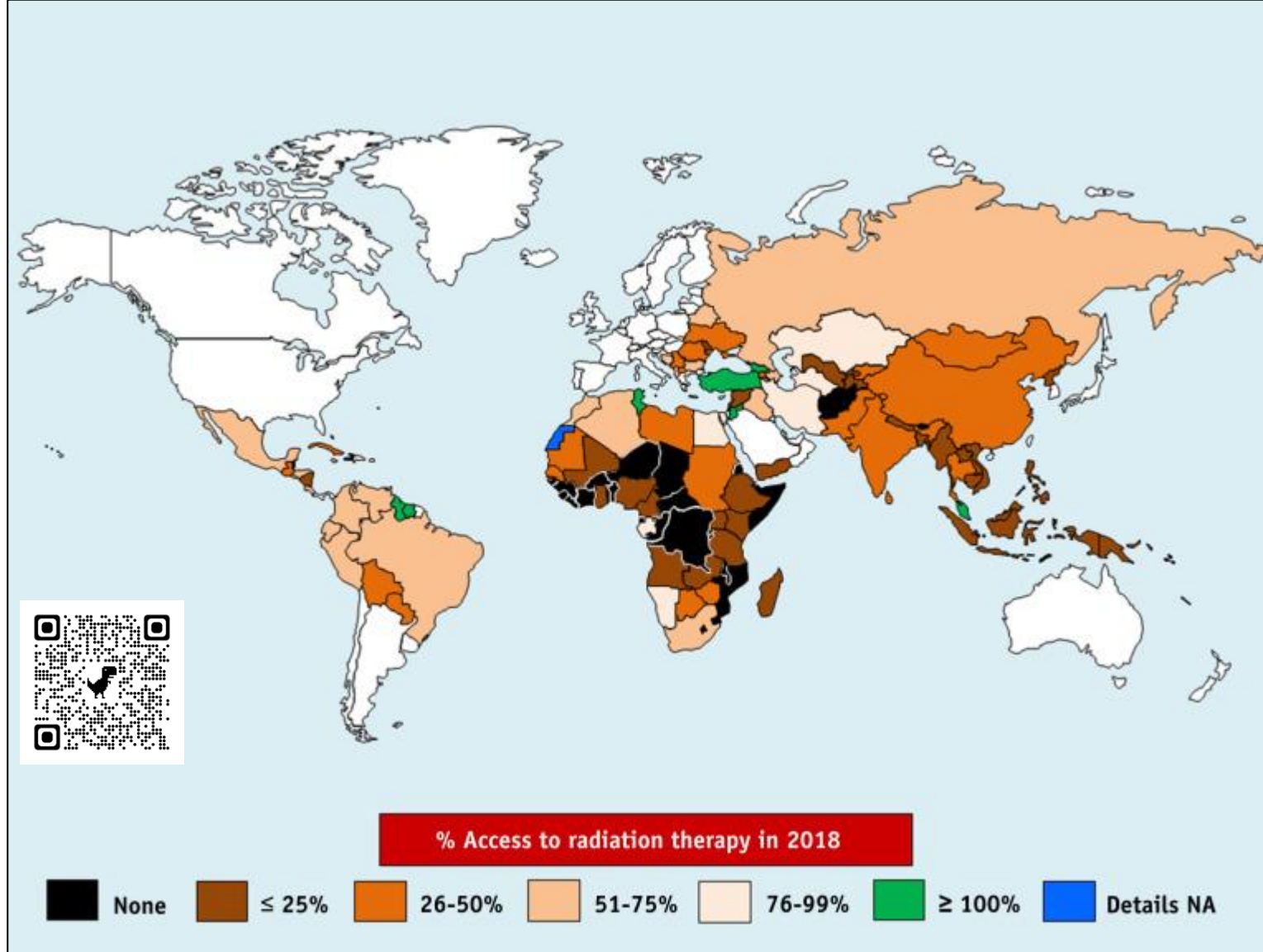
Laurence Court, PhD, [lecourt@mdanderson.org](mailto:lecourt@mdanderson.org)



# Funding / conflicts of interest

- The RPA v1 is 510(k) cleared, but not yet being marketed
- Project funding:
  - National Cancer Institute
  - Wellcome Trust
  - Cancer Prevention & Research Institution of Texas (CPRIT)
  - Fund for Innovation in Cancer Informatics
  - Varian Medical Systems
  - University of Texas MD Anderson Cancer Center

# There is a severe lack of radiotherapy access in LMICs

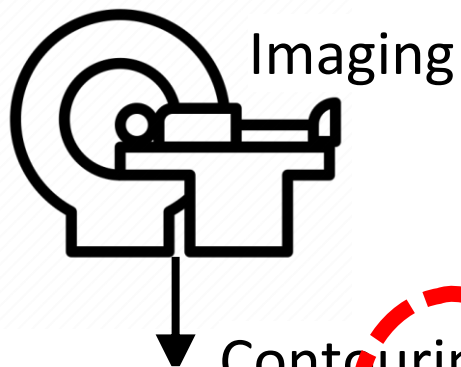


By 2040, 70% of annual cancer cases will be in low- and middle-income countries (LMIC), but less than 50% of patients in those countries have access to radiotherapy.

Access to high-quality radiotherapy is very limited (1/3 of African centers are using standard-of-care treatment planning)

Closing this gap could save nearly **one million lives per year**

Global shortage of ~50,000 radiation oncologists and medical physicists



## Radiation Planning Assistant

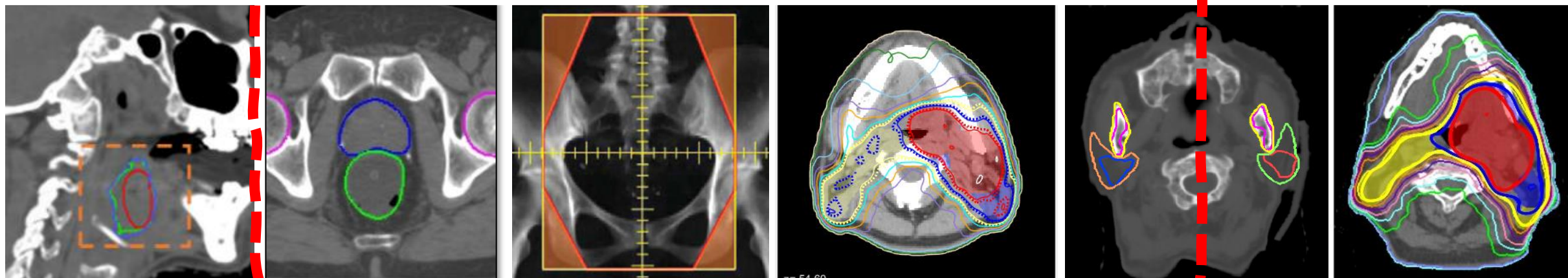
Status	MRN	Patient Name	Treatment	Task	CT Scan	Service Form	Date Submitted
Processing	CW01	01,CW	Chest Wall - Tangents & Sclav	Planning			2020-Jun-13 21:04
Complete - RPA plan	CW01	01,CW	Chest Wall - Tangents & Sclav	Planning			2020-Jul-29 23:39
Complete - RPA plan	GYN01	01,GYN	Cervix - 4-Field Box (Bone)	Planning			2020-Jul-27 15:40
Complete - RPA plan	GYN01	01,GYN	Cervix - 4-Field Box (Bone)	Planning			2020-Aug-06 08:36
Complete - RPA plan	GYN01	01,GYN	Cervix - 4-Field Box (Bone)	Planning			2020-Aug-13 21:30
Processing	GYN01	01,GYN	Cervix - 4-Field Box (Bone)	Planning			2020-May-26 10:05
Complete - RPA plan	GYN01	01,GYN	Cervix - 4-Field Box (Bone)	Planning			2020-Aug-13 20:53

Contouring

Treatment planning

Safety review

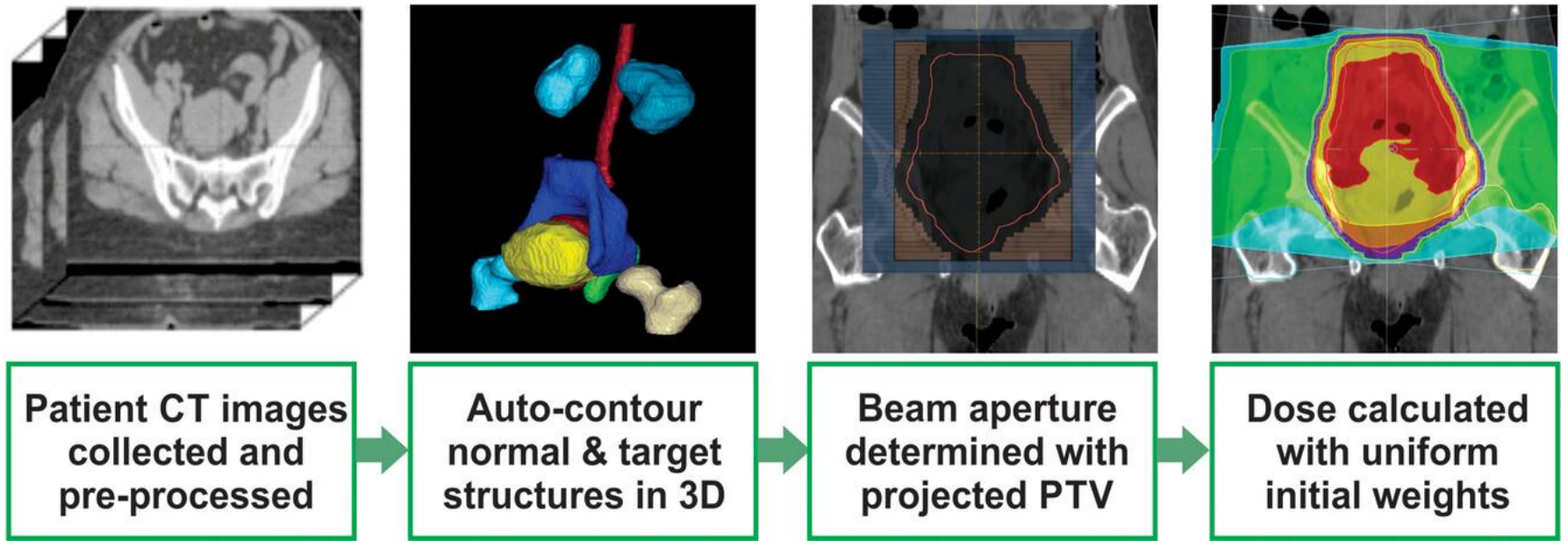
Peer-review



Treatment



# Autoplanning gives high- quality plans and saves time



## Ocean Road Cancer Institute, Tanzania

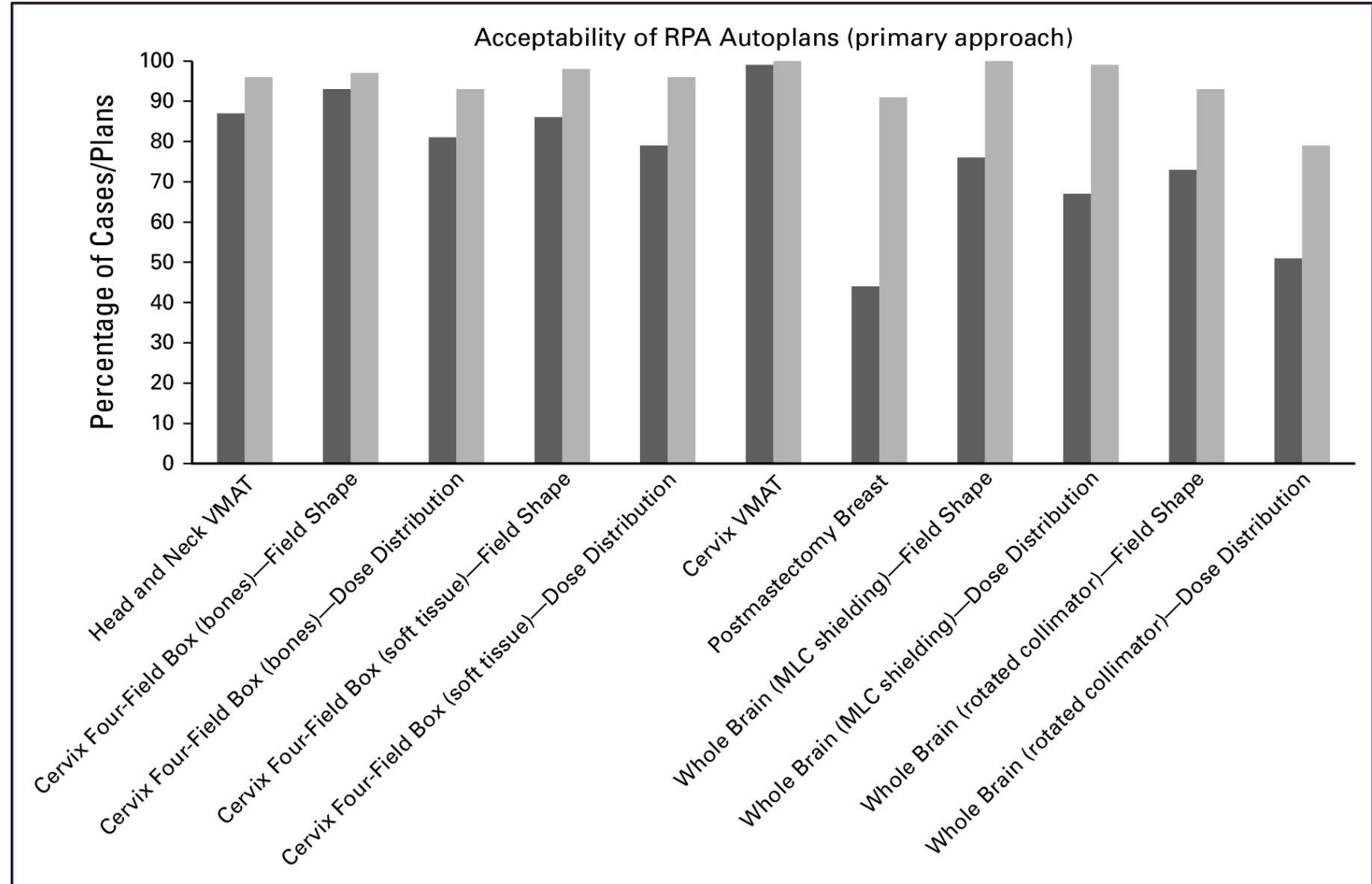
- Cervix soft-tissue 4-field box
- 60 reviews, 2 radiation oncologists
- 97% use as is
- 6 min to review (contours AND plan)



Muya et al, Journal of Global Oncology, 2023

# Clinical acceptability: results of an international review

- 75 cases
- Minimum of 3 physicians
- 31 radiation oncologists
- 16 institutions
- 5 continents



- 2015/16: Initial field trips – South Africa, Philippines
- 2016: Project initiated, collaboration with South Africa (NCI funding)
- 2019: Executive Leadership Team support (MD Anderson)
- 2021: Started using RPA tools at MD Anderson
- 2022: MDA Global Oncology Program launched
- May 2023: FDA 510(k) clearance for the RPA (not yet marketed)
- Oct 2023: Announced that RPA will be free at World Cancer Leaders' Summit
- Jan 2024: Legal approval for South Africa (terms of use, etc.)
- May 2024: First patient, South Africa
- May 2025: Registration status (South Africa)
  - Registration complete: 6 hospitals
- Next: Indonesia, Zambia, Brazil, Mozambique



# Thank you

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