The Bermuda Model: Achieving World-Class, Equitable and Efficient Cancer Care in a Small Island Nation

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Abstract #546466

RADIATION THERAPY ALLIANCE

Dana-Farber Cancer Institute | Brigham Cancer Center

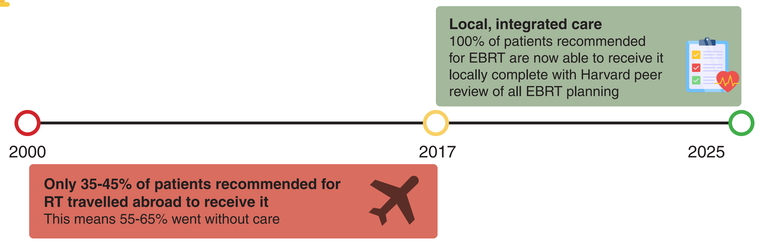
Bermuda Cancer and Health Centre
BERMUDA REGISTERED CHARITY #070

Background

CHALLENGE: Before 2017, all Bermudian patients requiring external beam radiation therapy (EBRT) had to travel abroad, resulting in prohibitive financial toxicity.

SOLUTION: Bermuda Cancer and Health Centre in partnership with Brigham and Women's Hospital / Dana-Farber Cancer Institute launched an integrated national solution in 2017 to provide comprehensive local care.

PILLARS: **Access** | **Efficiency** | **Health Equity** | **International Quality**



Objectives

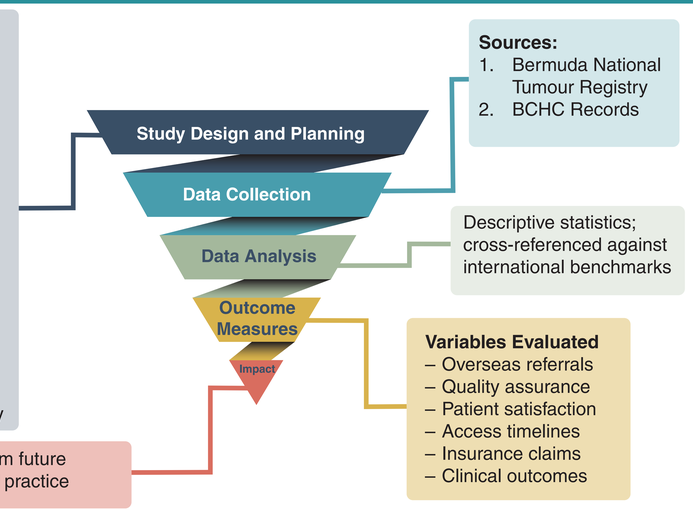
To evaluate the performance of the Bermuda Model across access, efficiency, equity, and international quality benchmarks, and to assess its scalability as a blueprint for small island nations.

Methods

Study Design: Retrospective descriptive cohort

Timeframe: 2015-20 for travel and financial data; 2017-19 for clinical outcomes; 2025 for efficiency and satisfaction data.

Benchmarking: 100% of EBRT plans peer-reviewed by Brigham and Women's / Dana-Farber Harvard faculty



Results

KEY FINDING: Need for overseas EBRT eliminated in Bermuda

ACCESS GAP EFFECTIVELY CLOSED

CCORE modelling estimates approximately 200 Bermudians per year would benefit from EBRT. Before 2017, only 35-45% received it (all overseas) and 55-65% went without it. ***Following the launch of the integrated national service in 2017, approximately 95-100% of patients now receive EBRT locally*** at BCHC, while a tiny minority choose to self-refer abroad (Figure 1).

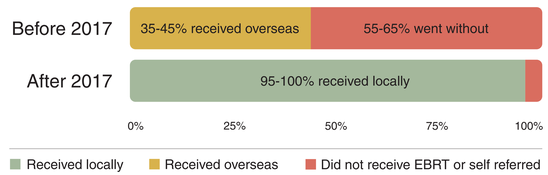


Figure 1. Access to EBRT Before and After 2017

EFFICIENCY AND PATIENT SATISFACTION

Time from diagnosis to first cancer treatment averaged 20 days year-to-date in 2025, with a ***best of 16 days in April***, within the 21-day internal standard (Figure 2). Sustained performance below target demonstrates operational efficiency despite the constraints of a small-nation service. 97% of patients (2017-2022) would recommend treatment in Bermuda; all rated care excellent or good. RT satisfaction hit 100% in May and June 2025.

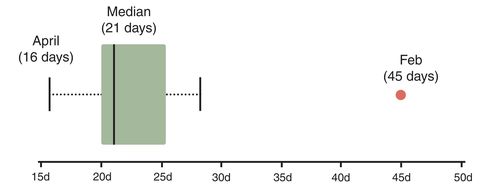


Figure 2. Days From Diagnosis to First Treatment in 2025

QUALITY ASSURANCE

All RT plans receive Harvard peer review via partnership with Brigham and Women's Hospital/Dana-Farber Cancer Institute. The service is dually accredited by the American College of Radiology (ROPA) and the American College of Radiation Oncology, with physics QA fully compliant with ACR and AAPM standards. M&M rounds are conducted jointly with BWH for all patients.

100%	Dually Accredited	M&M Rounds
of cases peer-reviewed at BWH chart rounds	ACR ROPA and ACRO accredited radiation oncology practice	jointly with Brigham and Women's

CLINICAL OUTCOMES

An ***87% early stage detection rate*** was achieved for breast cancer between 2017 and 2019. Breast cancer mortality in Bermuda is lower than age-standardized benchmarks for both North America (12.2 per 100,000) and Europe (14.6 per 100,000) (Figure 3), indicating that local delivery has not compromised clinical performance.

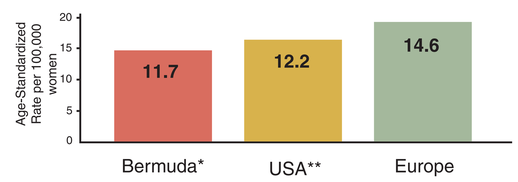


Figure 3. Breast Cancer Mortality Benchmark

**Bermuda: 2017-2019; **USA and Europe: GLOBOCAN 2020*

FINANCIAL IMPACT AND EQUITY

Cancer-specific overseas ***insurance claims fell from $6.2M in 2017 to $4.7M in 2020, a 24% reduction*** (Figure 4). This reduction has materially eased financial toxicity for all patients and reduced pressure on the national insurance pool. Residents with government-level insurance, who previously faced the greatest barriers to overseas care, now access RT locally without travel or self-funding.

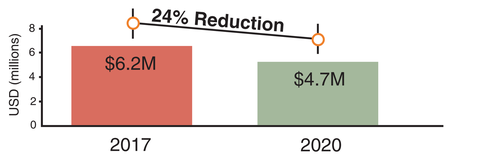


Figure 4. Cancer Specific Overseas Insurance Claims

Conclusions

Small island nations can achieve **world-class**, **equitable** and **efficient** cancer care through strategic local investment and **international partnerships**.

The Bermuda Model successfully:
- Eliminated need for overseas EBRT
- Delivered excellent clinical outcomes
- Reduced financial burden for all, including insured and uninsured residents

We have demonstrated a **scalable blueprint** for other isolated regions in radiation therapy and cancer services.

Acknowledgments

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