

// Australian Comprehensive Cancer Network Innovations Showcase

Using data to drive world-class cancer care across Australia

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Dr Marie Burke OAM

Radiation Oncologist

Chief Medical Officer

Researcher



~30k

GenesisCare Australia

1 in 3 Australians accessing radiation therapy receive it at GenesisCare

Growing footprint in medical oncology, theranostics, and personalised medicine

We deliver services in collaboration with government at 16 locations, including 8 regional centres

Purpose: To design care experiences that achieve the best possible life outcomes.

Using data to improve care across 50 locations in five states

1. "Horizon RO"

Clinical
standardisation to
drive quality and
outcomes

2. Patient feedback

Patient-reported
experience
measures to
improve the patient
experience

3. Business intelligence

Operational
standardisation to
drive efficient,
affordable care

Adherence to Clinical Practice Guidelines (CPGs) has been associated with increased survival⁽¹⁾

Case study: impact of radiotherapy guideline adherence on patient outcomes⁽²⁾

Retrospective review of Protocol compliance and patient outcomes in radiation oncology



25%
non-compliant

Within the head and neck clinical trial 25% of treatment plans for patients were not protocol compliant following a quality review

-2 yr
Overall survival

There was a 20% difference in overall survival between patients treated on a compliant RT treatment plan vs a non-compliant RT treatment plan

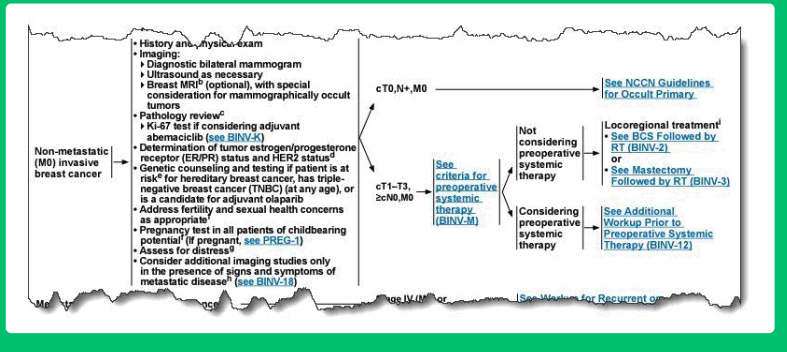
1. Ricci-Cabello et al. Adherence to breast cancer guidelines is associated with better survival outcomes: BMC Health Serv Res. 2020;20(1):920.
2. L Peters et al. Critical impact of radiotherapy protocol compliance and quality in the treatment of advanced head and neck cancer. Clin Oncol. 2010 Jun 20;28(18):2996-3001.

CPGs are a powerful tool...

however, their implementation is very complex ⁽¹⁾

EMR lack efficient workflow for protocolised care

Paper guidelines



Informal emails

Volumes are done. Ready for planning. Spine SBRT to L2. **30Gy in 5 fractions**. Plan for P...

I have contoured "ThecalSac" and "ThecalSac_PRV" and Kidneys. Please precisely contour...

Please use NRG protocol attached for OARs – use 5 fractions table on page 57 and instruction...

1. CTV_L2, PTV_L2, ThecalSac and ThecalSac_PRV are contoured. Please do not en...
2. Must meet ALL the following numbers – will accept lower coverage to CTV and PTV
 - ThecalSac 28Gy < 0.03cc, and 22Gy < 0.35cc, and 15.6 Gy < 1.2cc
 - ThecalSac_PRV 25.3Gy < 0.35cc
3. CTV min dose and PTV min dose must be ~ 25Gy; 100% of CTV_L2 and PTV_L2 mu...

Please note that he had two previous courses of XRT close to L2 as below. We need to ma...

1. Prostate and nodes
2. L4 SBRT

Thanks

Post-it notes dosing

PTV 6450 — *Very Guff PET* — NO EXPANSION

PTV 5375 — 5375 cGy in 25 fms (215)

PTV 5750 — 5750 cGy in 25 fms (230)

PTV 5000 — 5000 cGy in 25 fms (200)

PTV 4500 — 4500 cGy in 25 fms (180)

PTV 6450 — 1075 cGy in 5 fms (215)

Amputation

EMRs with no workflow



1. Rauh S et al. Challenge of implementing clinical practice guidelines. ESMO Open. 2018;3(5):e000385.

1. Horizon RO

In partnership with the Lumonus team, we developed a system designed to deliver world-class care by focusing on...

Capturing, tracking and measuring

- Tracking guideline adherence against evidence-based protocols
- Structured clinical data is captured via AI powered workflows for patients and care teams. Enabling accurate reporting, clinical intelligence and research

Automation & AI facilitating quality medical practice

- Intelligent automated workflows drives consistency across treatment journey
- Healthcare professionals can act based on clinician and patient reported outcome measurements in real-time (for e.g. Distress Thermometer)

Harmonising protocols

- Global practice, doctor specific care pathways and clinical protocols are standardised
- Decision-making process is informed by evidence-based sourced from literature & research
- Automated peer review embedded in clinical workflow



Continuously enhancing care pathways with the goal to provide best in class outcomes and experience backed by data

Leveraging AI to reduce complexity of implementing CPGs



- Reports received from pathology + radiology providers via fax or email
- Staff scan + upload documents into the EMR
- Many records have incomplete diagnosis and intake data due to the manual effort of entering information from these reports

Clinex

Using OCR + NLP to automatically extract relevant information to fill the gaps

Capture, clean + classify

- Capture new documents from EMR
- Recognise text in documents (Optical character recognition = OCR)
- Postprocess + clean text
- Detect document type + tumour stream

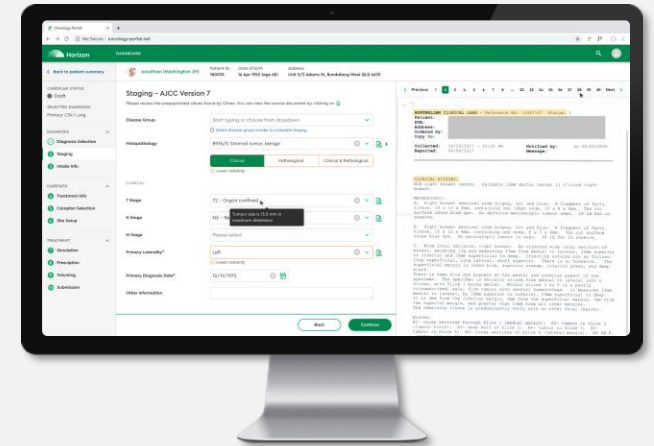
Extract information

- Extract relevant information from text using neuro-linguistic programming (NLP)
- Store structured information
- Expose via API for consumption

Benefits

Improved completeness + quality of structured data

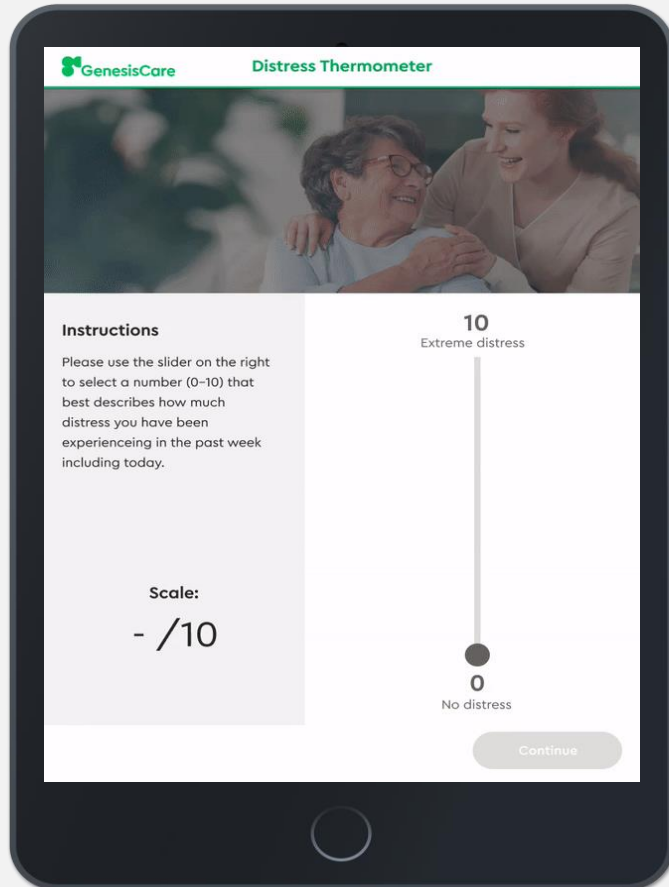
Less manual data input frees up clinical staff time



- Staging + intake fields in Horizon are prepopulated
- Staff verify the extracted information before it gets used

Case study: Distress Thermometer

Patient reported outcome measurements in real-time



7,788 distress screens completed between March and October 2022

Distress Thermometer as standard of care:

- Implementation of a systematic, digital clinician workflow for patient distress screening as a standard of care
- To enhance patient care experience through a multidisciplinary approach
- Measure, benchmark, track and improve outcomes for all

Using validated distress management tool:

- Internationally adopted screening measure to identify and address psychological distress in individuals with cancer
- Digital Distress Thermometer workflow utilises automation to facilitate timely follow up with patients who score highly

Distress screening and wellbeing plan workflow at 33 RO clinics demonstrated:

- 78% uptake of baseline screening and 53% at end of treatment
- Referrals only required for 3% of patients (based on documented data)
- 42% of patients saw a reduction in their distress (34% an increase and 24% no change)
- For patients with increased distress, 79% experienced a change in the distress category demonstrating distress evolved over their treatment course
- Enhanced patient satisfaction evidenced through feedback

2. Patient Reported Experience

Measures have been captured and assessed for almost a decade, enabling us to transform the care experience

Net Promoter Score

- **From:** +70 NPS in 2014
- **To:** +94 NPS in 2024

Fees and Billings

- **From:** 83% customer satisfaction (CSAT) for billing explanation (2015)
- **To:** 97% CSAT for billing explanation (2024)
- **From:** 77% CSAT value for money (2015)
- **To:** 86% CSAT with out-of-pocket price (2024)

Communication about Delays

- **From:** CSAT 78% | 5 min average waiting time in 2019
- **To:** CSAT 96% | 4 min average waiting time in 2024



How have we used this data to improve care?

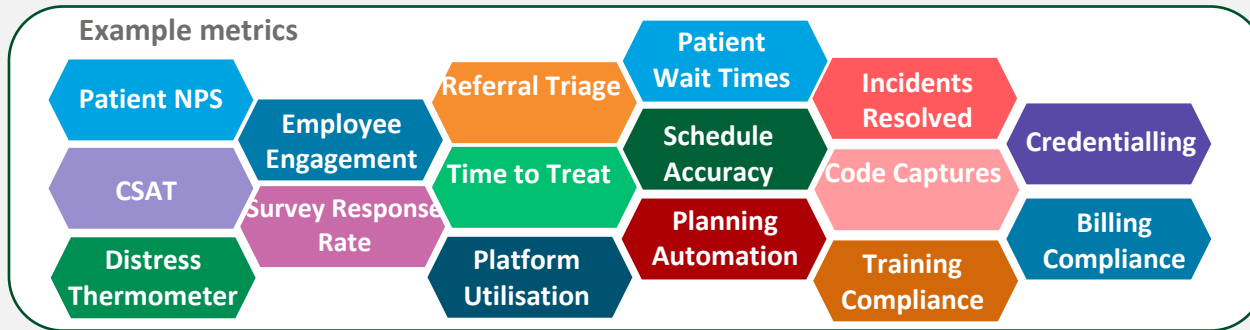
- **Uncovered the need for our successful Voice of Consumer program**
- **To informed our “Patient Principles”:** physical environments, design of our centres, soft skills, patient information
- **To create gold standard targets as part of a Patient Experience playbook that aims to deliver an exceptional patient experience, nationally**

3. Business Intelligence Tools

have enabled us to track key performance metrics and inform lean processes to drive efficiency

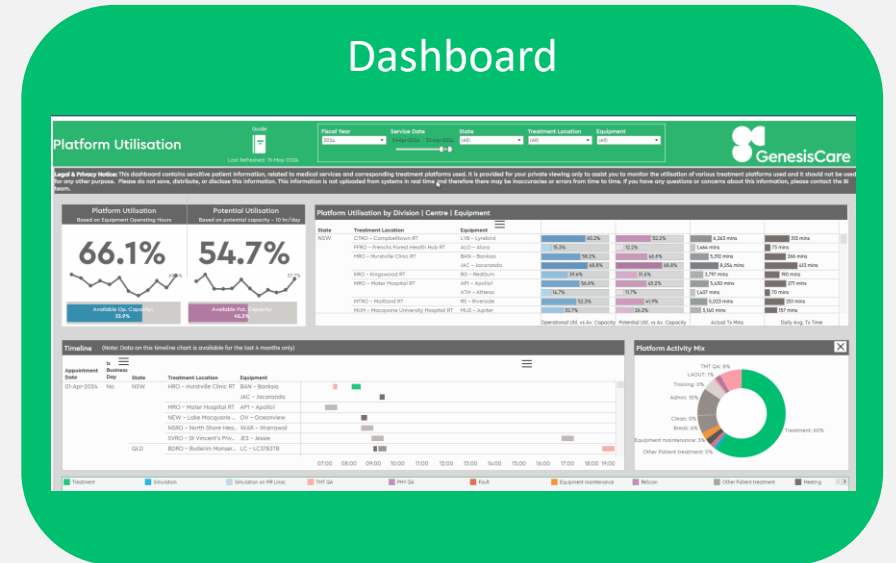
Performance Metrics

- Performance metrics that monitor and track all parts of our operations, covering our patient journey, to drive efficiency and improve patient care.
- Ability to report the metrics at national, state, clinic, doctor level.
- Ability to track trends and compare current period vs past periods and targets.



Efficient delivery of high-quality cancer services helps us to offer rapid access to affordable care, with 1 in 2 GenesisCare patients bulk-billed or treated as part of a PPP-style arrangement.

Fully automated Enterprise Data Warehouse providing up-to-date data & insights for our doctors and leaders



Enterprise Data Warehouse

Clinical & Enterprise systems



Where to from here?



Exploring Patient Portal and Med Onc Portal



RO Portal – building on PROMs pilot in Head & Neck



Opportunities for improved AI and automation



Ongoing opportunities for enhanced PROMs



Data informing innovation programs – breast bundle

Data informing research – GENTLER skin trial



Thank you.