

# Innovative Teamwork: How and why digital health is changing healthcare

RACP Congress

Australasian Faculty of  
Occupational and  
Environmental Medicine

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Auckland

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CEO and Head of Digital Health

Mercy Radiology and Clinics &  
Healthcare Holdings Limited

# What we'll cover

- Introductions
- Reflections on where we are
- Why digital transformation
- Value-based care: a quick tour
- Value-based care and 'digital' teams
- What can you do tomorrow?
- Key messages



# Why digital transformation in health?

Healthcare resists change!



Consumerism / Value



Technology (mobility, computing power, cloud, apps, social media etc)



Chronic disease, ageing, workforce, costs



**Healthcare**<sup>™</sup>  
HOLDINGS

THE  
PATIENT  
WILL SEE  
YOU NOW

The Future of Medicine Is in Your Hands



ERIC TOPOL

Author of *The Creative Destruction of Medicine*

READ BY ERIC MICHAEL SUMMERER

# Looking back... (and now)

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Source: Star Trek (Original series)



Journal List > Mhealth > v.3; 2017 > PMC5682364



Mhealth. 2017; 3: 38. Published online 2017 Sep 14. PMID: 29184890

### Digital health is a cultural transformation of traditional healthcare

Bertalan Meskó<sup>1,2</sup>, Zsófia Drobní,<sup>3</sup> Éva Béneyi,<sup>4</sup> Bence Gergely,<sup>5</sup> and Zsuzsanna Gyöngyösi<sup>2</sup>

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#### Abstract Go to: [v]

Under the term “digital health”, advanced medical technologies, disruptive innovations and digital communication have gradually become inseparable from providing best practice healthcare. While the cost of treating chronic conditions is increasing and doctor shortages are imminent worldwide, the needed transformation in the structure of healthcare and medicine fails to catch up with the rapid progress of the medical technology industry. This transition is slowed down by strict regulations; the reluctance of stakeholders in healthcare to change; and ignoring the importance of cultural changes and the human factor in an increasingly technological world. With access and adoption of technology getting higher, the risk of patients primarily turning to an accessible, but unregulated technological solution for their health problem is likely to increase. In this paper, we discuss how the old paradigm of the paternalistic model of medicine is transforming into an equal level partnership between patients and professionals and how it is aided and augmented by disruptive technologies. We attempt to define what digital health means and how it affects the status quo of care and also the study design in implementing technological innovations into the practice of medicine.

**Keywords:** Digital health, medical technology, self-tracking, paradigm shift, digital transformation

**Formats:**  
Article | PubReader | ePub (beta) | PDF (368K) | Citation

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- Evidence Brief: Effectiveness of Intensive Primary Care Programs [VA Evidence-based Synthesis Pr...]
- Digital technologies and chronic disease management. [Aust Fam Physician. 2014]
- Use of information and communication technologies to support effective work practice innovation in [BMC Health Serv Res. 2009]

See reviews...  
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Will artificial intelligence solve the human resource crisis in healthcare? [BMC Health Services Research. ...]

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# Digital health playbook



Appetite for risk



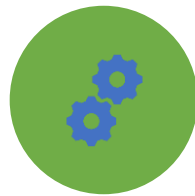
Digital first / digital by default



Design thinking



Consumer at the centre (Change how you work)



Test and adjust



TEAM-BASED

**VALUE = Outcomes / Cost**





# Value building blocks



Integrated Practice Units (IPU)



Measure outcomes and costs



Bundled pricing



Systems Integration

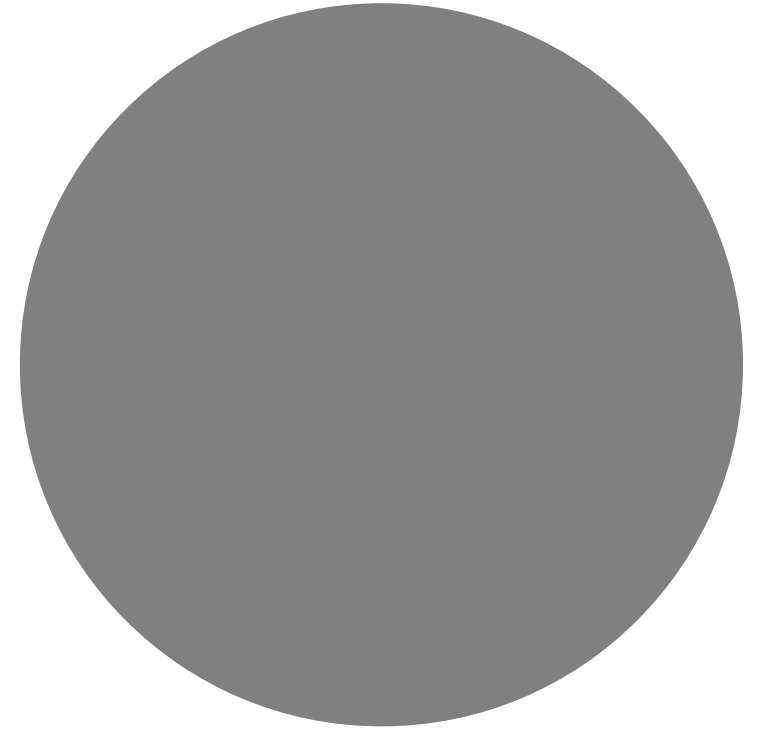


Digital enablers

# Digitally-enabled team based care

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MDTs

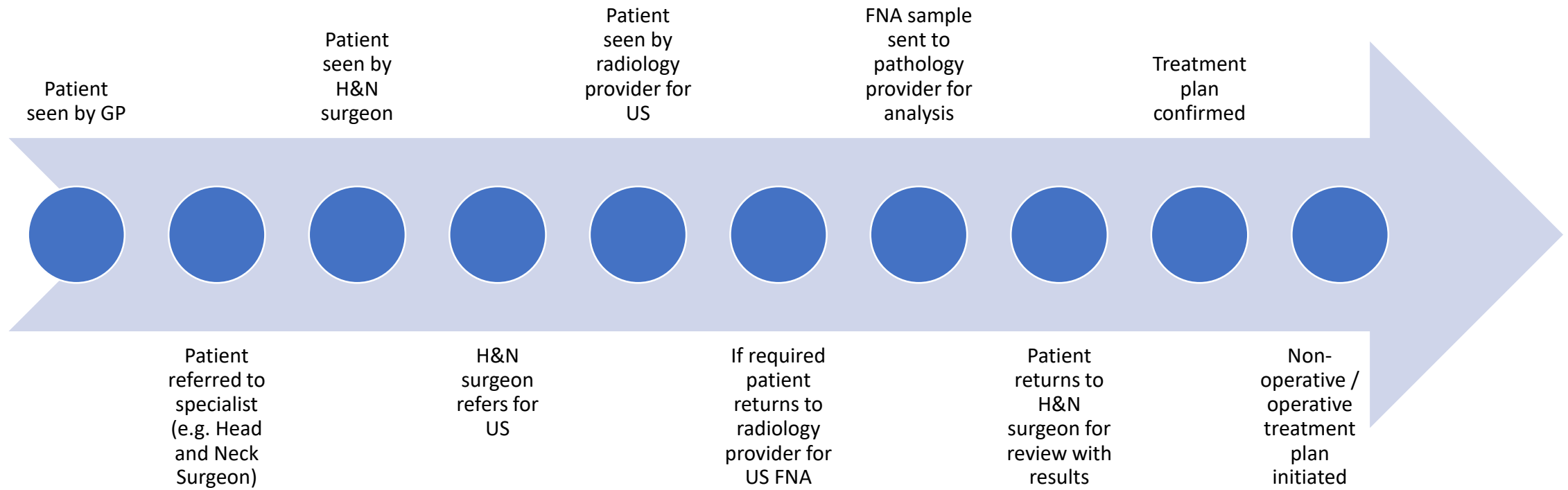


Neck Lump  
Clinic and  
digital  
enablers

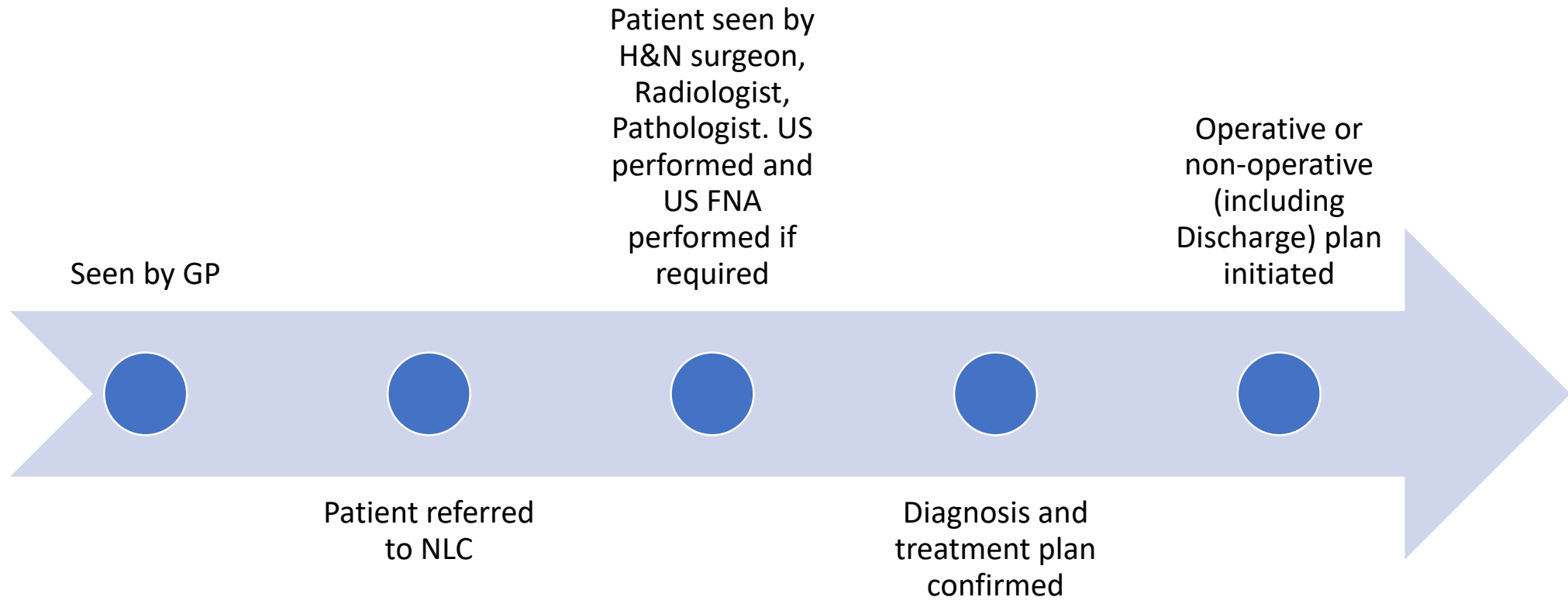
New Model of care  
(team-based care)

Digital tools to enhance  
work flows

No rocket science here



8-12 weeks elapsed time:  
 'Consumer-centric'?



45 minutes

# Digital enablers for the NLC

Voice to text

Cloud

PROMs / PREMs

Inter-operability

- APIs
- US report accelerator (Kailo)

Foundational applications

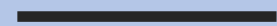
- PACS / RIS
- PMS



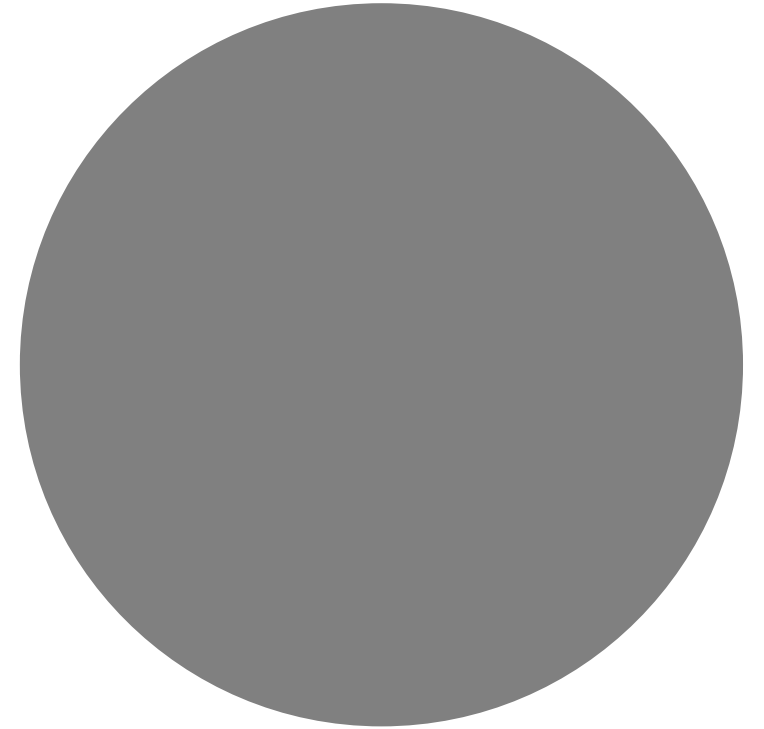
## Neck Lump Clinic – impact to date

- >2000 patients seen
- 50% discharged after 1 appointment
- 15% cancer cases
- <1% non-diagnostic FNA rate
- High patient satisfaction
- Removed cost of repeat scan or biopsy / follow-up consultation
- AP funded by Southern Cross Insurance (reduced cost / premium service)
- Clinician satisfaction in model very high
- Strong MDM

# Teams operating at top of scope



GPs / Community-based doctors





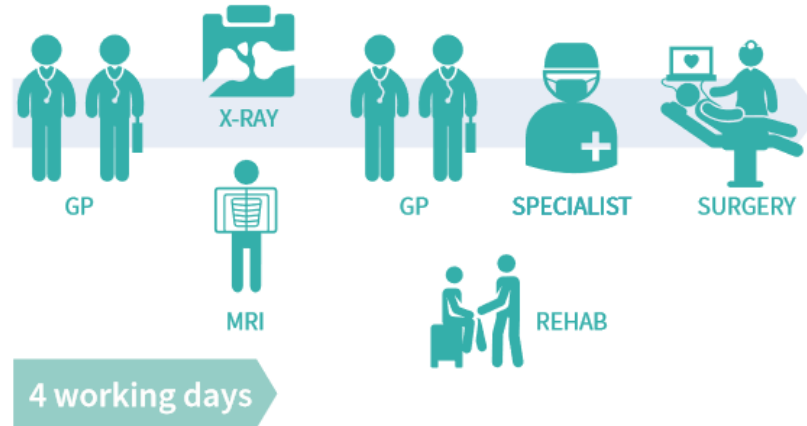
ACC / ProCare /  
Mercy Radiology  
Hi-tech imaging  
initiative

## A STREAMLINED PATIENT JOURNEY

### PREVIOUS PATHWAY:



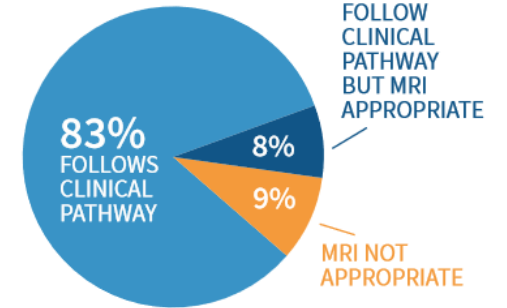
### NEW PATHWAY:



# Hi-tech imaging – impact to date

- 30 years of wait removed from the system
- Reduction in spend on earnings related compensation
- Pathway optimisation (surgical vs non-surgical)

**91%** OF  
GP REFERRALS  
ARE FOR  
APPROPRIATE  
MRI



**4 DAYS**  
TO MRI

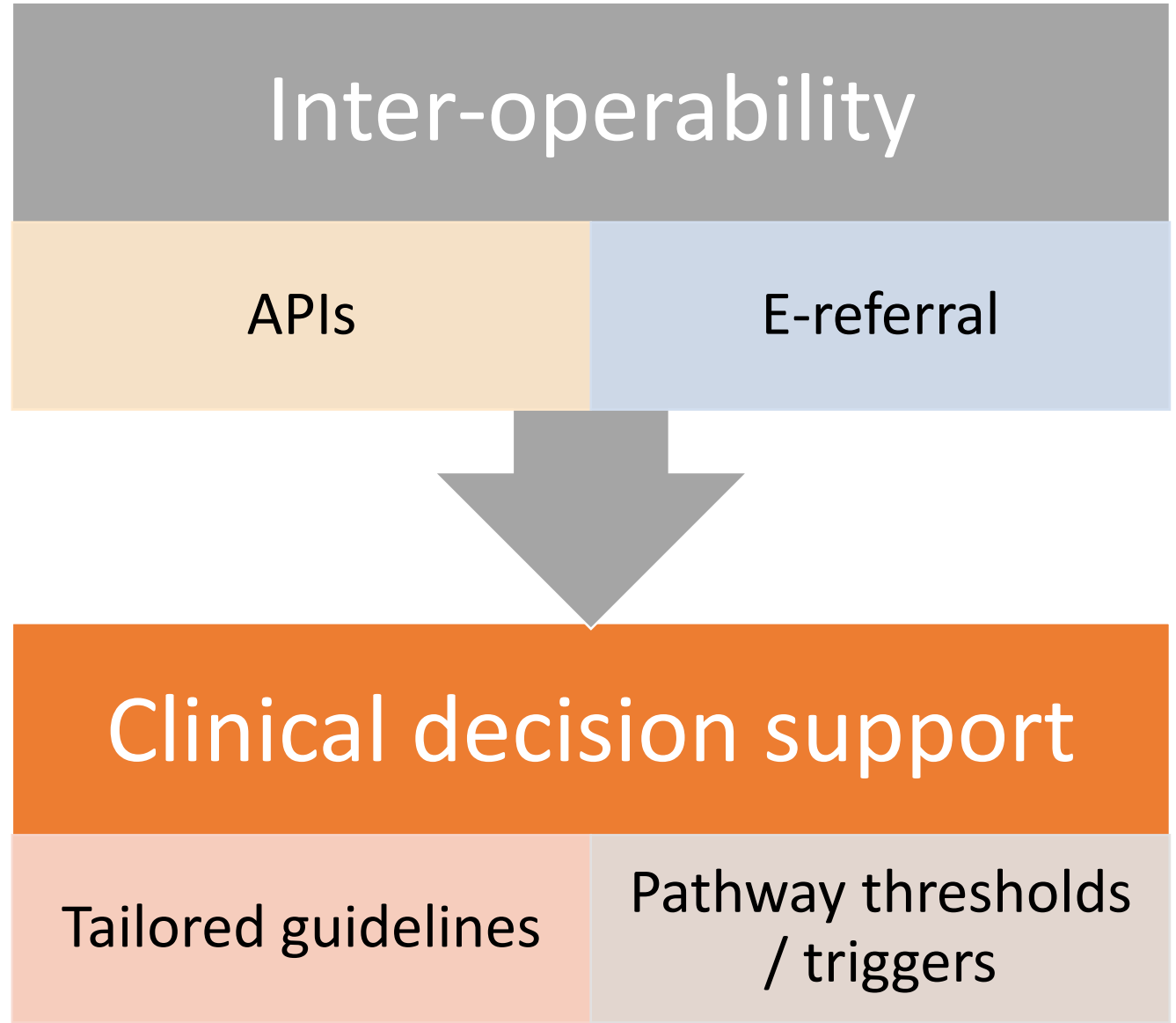
MĀORI AND  
PACIFIC  
PEOPLE  
HAVE  
**INCREASED**  
ACCESS  
TO MRI ABOVE



**↑**  
**50%**

**IMPROVEMENT**  
IN ACCESS  
TO MRI FOR  
15-30  
YEAR OLD  
MĀORI &  
PACIFIC

Digital  
enablers for  
Hi-tech  
imaging





# 'Augmented' specialised teams

Theranostics

# Theranostics

- Team = Patient, Nuc Med Tech, Radiologist and Algorithm
- Novel / emerging treatment for men with advanced prostate cancer
- Targetted / personalised therapy
  - Lu-177
  - PSMA
  - Cancer cells identified through PSMA expression and targeted by Lu-177
- PROMs to monitor impact / quality of life



Summary

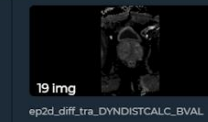
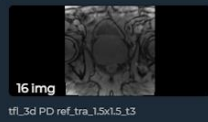
Recommendations

Reports to Patient

Investigations

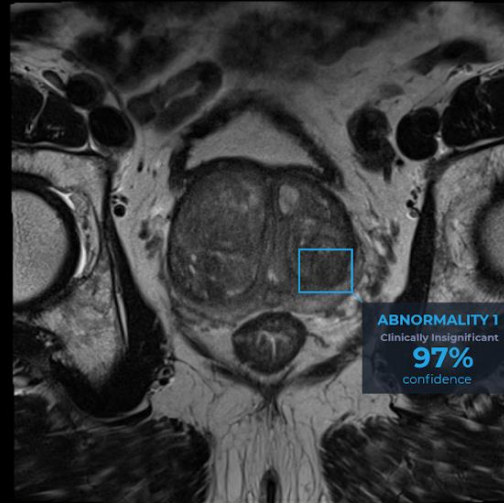
### MR - 1 REGION - PROSTATE

On 01/11/2018



t2\_tse\_tra

Display 13 of 21



**ABNORMALITY 1**  
Clinically Insignificant  
**97%**  
confidence

Prostate Segmentation

No. of Prostate Lesions Detected: 2

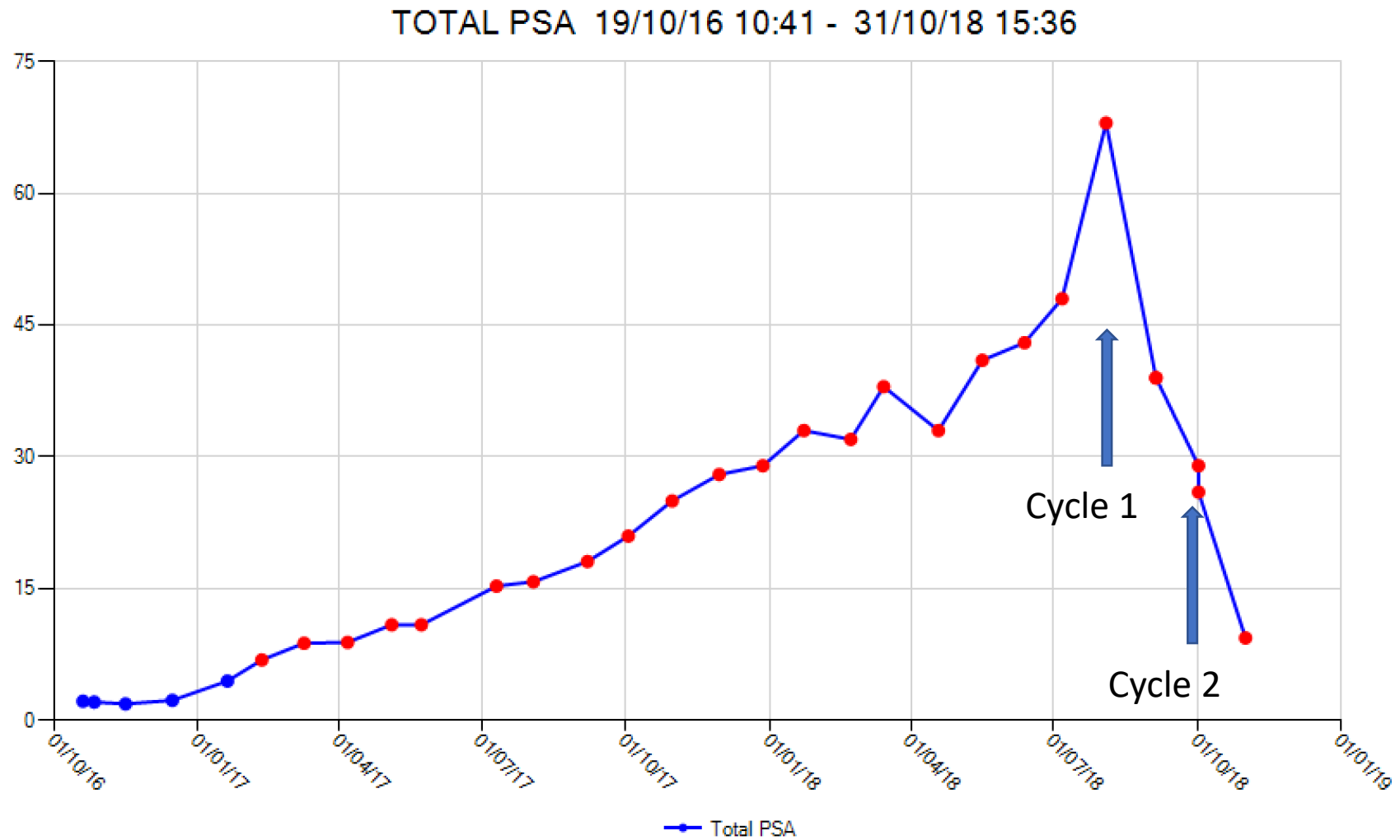
Abnormalities Detection

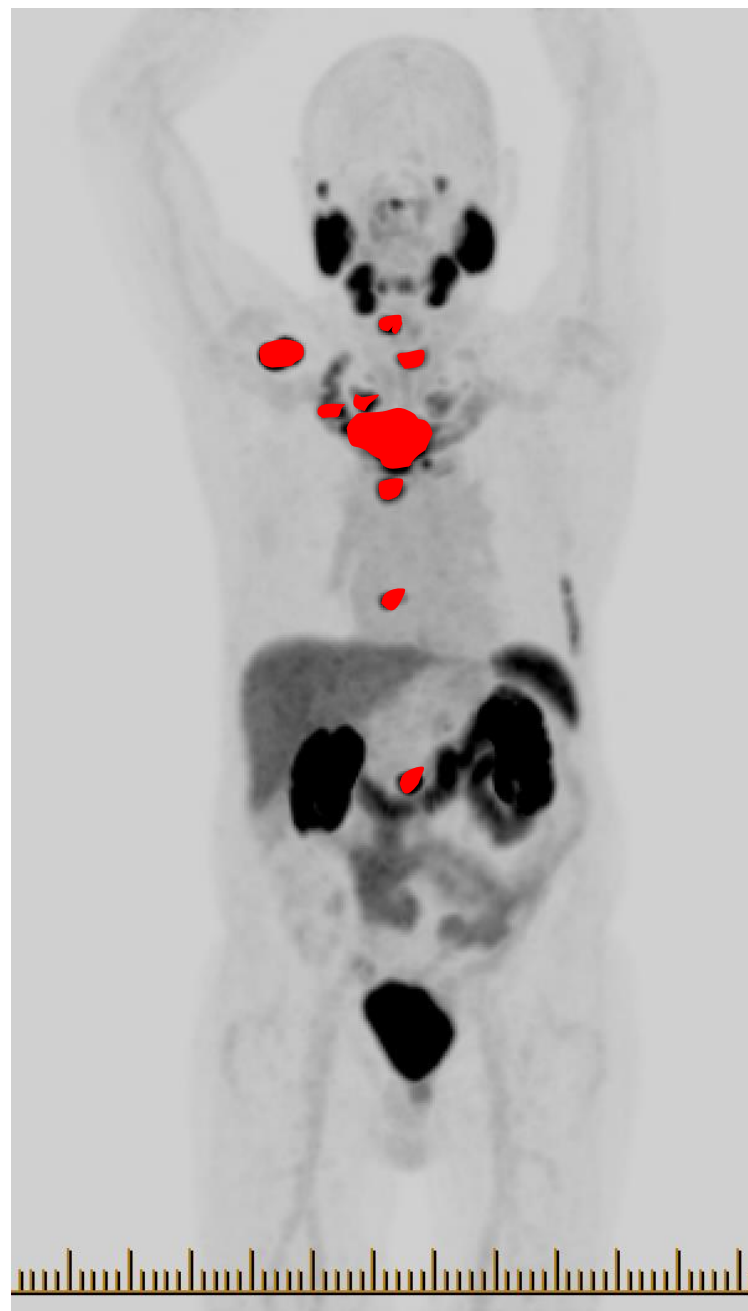
Off  On

No. of Prostate Lesions Detected: 2

AI Assistance  
HIDE

# PSA level tracking







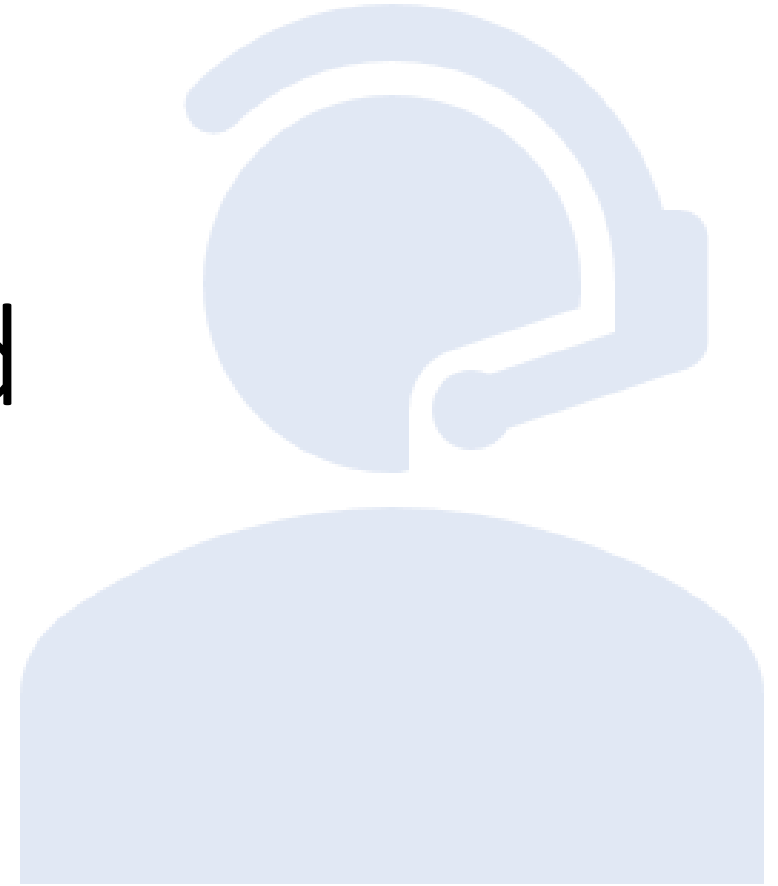
April 11, 2018



## FDA approves AI-powered diagnostic that doesn't need a doctor's help



# Virtual teams and virtual delivery





Startups

Apps

Gadgets

Events

Videos

—

Crunchbase

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Automate debt collection with cross-channel communication

FICO CCS runs on AWS

aws | FICO

AdChoices

# Digital therapeutics are just what the doctor ordered for patients — and for global healthcare systems



Meri Beckwith 4 months ago

Comment



**Disrupt Berlin 2018**  
**2 Days Until It Begins**

**Berlin**  
Nov 29 - 30



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# Clinical outcomes you can trust

As the largest digital CDC-recognized Diabetes Prevention Provider in the U.S., we've published an industry-leading 11 peer-reviewed studies.

2018

**Medicaid Population Receptive to Omada**

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Contemporary Clinical Trials Communications

2017 ×

**Validated 3-Year Outcomes**

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BMJ Open Diabetes Research & Care

*"Three years after completing the Omada health program, participants maintained meaningful reductions in body weight and A1c."*

[SUMMARY](#) [FULL PAPER](#)

2017

**Proven Effective in a Nationwide Workforce**

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Journal of Occupational and Environmental Medicine

A Peer Reviewed Study

2017

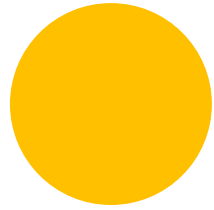
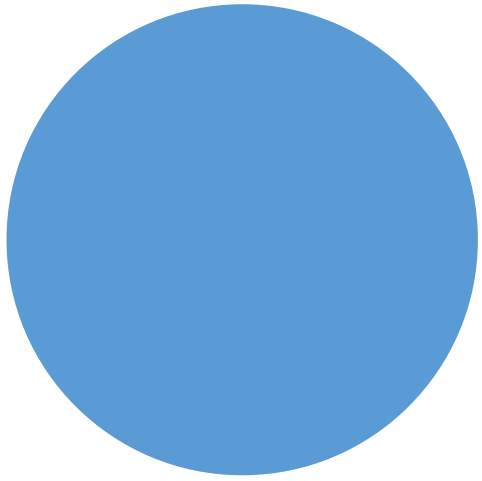
**Success with Medicare Advantage**

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Journal of Aging and Health

A Peer Reviewed Study

**@ 3 Years: 3% sustained reduction in weight and 0.3% HbA1C reduction**



Robots / Robotics

New teams



What can you  
do tomorrow?



Virtual consults



Voice to text



RPA



Expand your thinking (teams are changing)



Explore digital



Value-based  
care



Design thinking



Appetite for  
risk



Team-based  
care



Cultural  
transformation



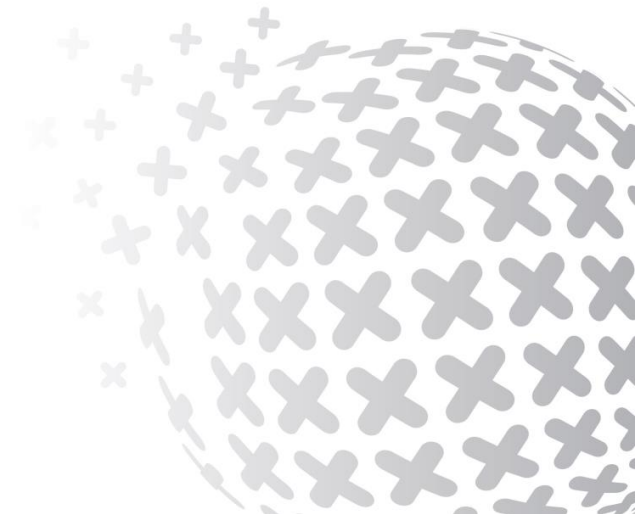
Do things  
differently

# Key messages





**Healthcare**<sup>™</sup>  
HOLDINGS



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And if you have been.....

Thanks for listening

[lmccann@radiology.co.nz](mailto:lmccann@radiology.co.nz)