



Digital Health

**Not business as usual.
Not even close.**

David Rowlands

Managing Director

Digital Health Workforce Australasia Pty
Ltd



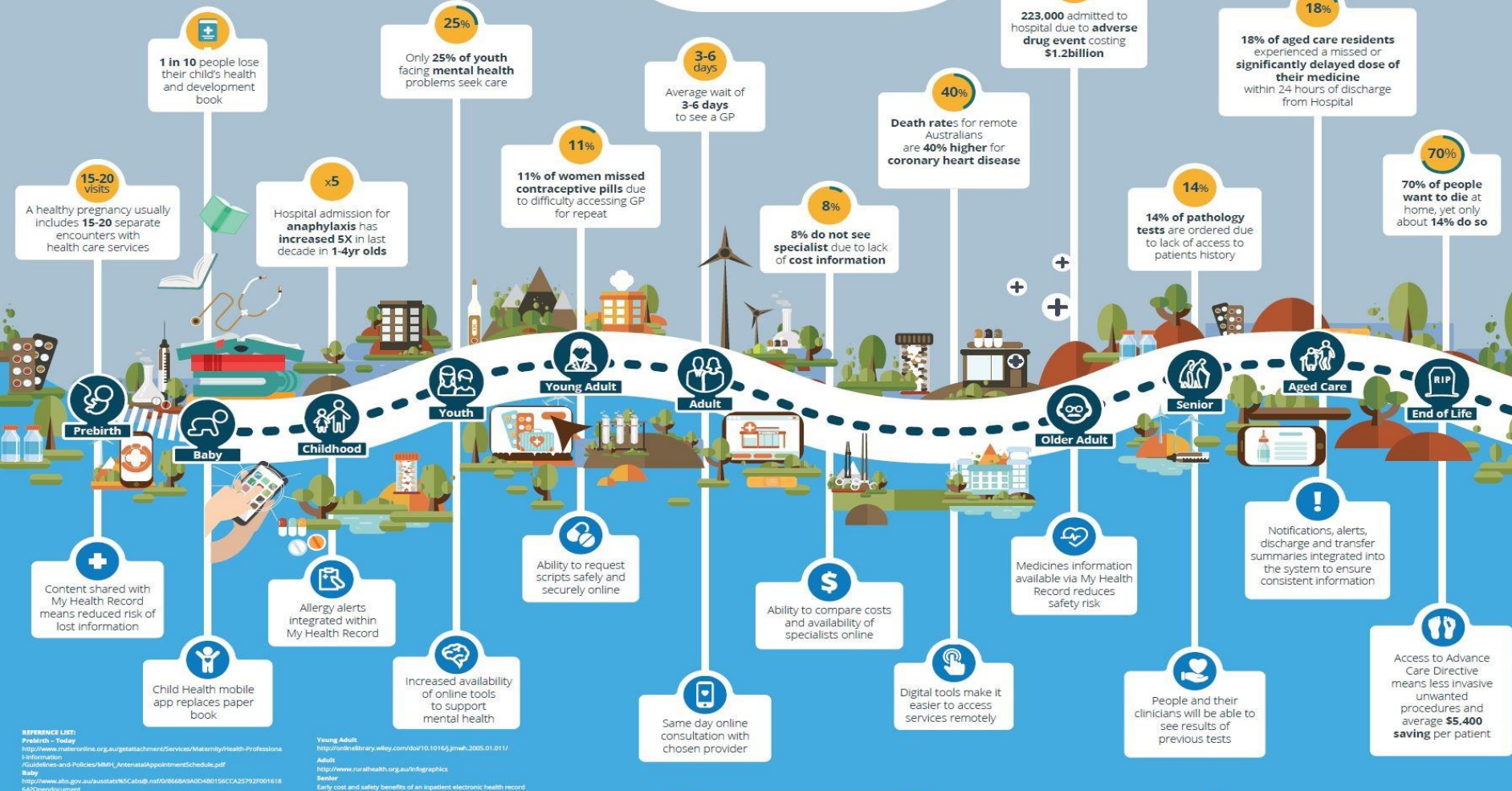
The beginning of wisdom
is to call things by their right names

(Chinese proverb)

What is “digital health”?

- “Any application of information and communication technologies in order to improve healthcare and health outcomes”
- “Electronically connecting up the points of care so that health information can be shared securely”

TODAY



1 in 10 people lose their child's health and development book

25% Only 25% of youth facing mental health problems seek care

3-6 days Average wait of 3-6 days to see a GP

\$1.2b 223,000 admitted to hospital due to adverse drug event costing \$1.2billion

18% 18% of aged care residents experienced a missed or significantly delayed dose of their medicine within 24 hours of discharge from Hospital

15-20 visits A healthy pregnancy usually includes 15-20 separate encounters with health care services

x5 Hospital admission for anaphylaxis has increased 5X in last decade in 1-4yr olds

11% 11% of women missed contraceptive pills due to difficulty accessing GP for repeat

40% Death rates for remote Australians are 40% higher for coronary heart disease

70% 70% of people want to die at home, yet only about 14% do so

8% 8% do not see specialist due to lack of cost information

14% 14% of pathology tests are ordered due to lack of access to patients history

+ Content shared with My Health Record means reduced risk of lost information

+ Allergy alerts integrated within My Health Record

+ Ability to request scripts safely and securely online

\$ Ability to compare costs and availability of specialists online

+ Medicines information available via My Health Record reduces safety risk

! Notifications, alerts, discharge and transfer summaries integrated into the system to ensure consistent information

+ Child Health mobile app replaces paper book

+ Increased availability of online tools to support mental health

+ Same day online consultation with chosen provider

+ Digital tools make it easier to access services remotely

+ People and their clinicians will be able to see results of previous tests

+ Access to Advance Care Directive means less invasive unwanted procedures and average \$5,400 saving per patient

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Adult
<http://www.ruralhealth.org.au/infrographics>
Senior
 Early cost and safety benefits of an ingoient electronic health record
 Zúñiga et al
 J Am Med Inform Assoc. (2011) 18 (2): 169-172.
Aged Care
 Does Tailored Advance Care Planning reduce the costs of care near the end of life?
 Systematic review and ethical considerations
 Corinna Klingler, Jürgen In der Schmitz and Georg Marcinmann
End of Life / Palliative
<https://eprints.ed.ac.uk/14098/1/3-dyng-well.pdf>

FUTURE

What is “digital health”?

- “The use of information technology/ electronic communication tools, services and processes to deliver health care services or to facilitate better health”

(Canada Health Infoway)

What is “digital health”?

- “The range of services and technologies that allow patients to seek help without physically going to a hospital or clinic”

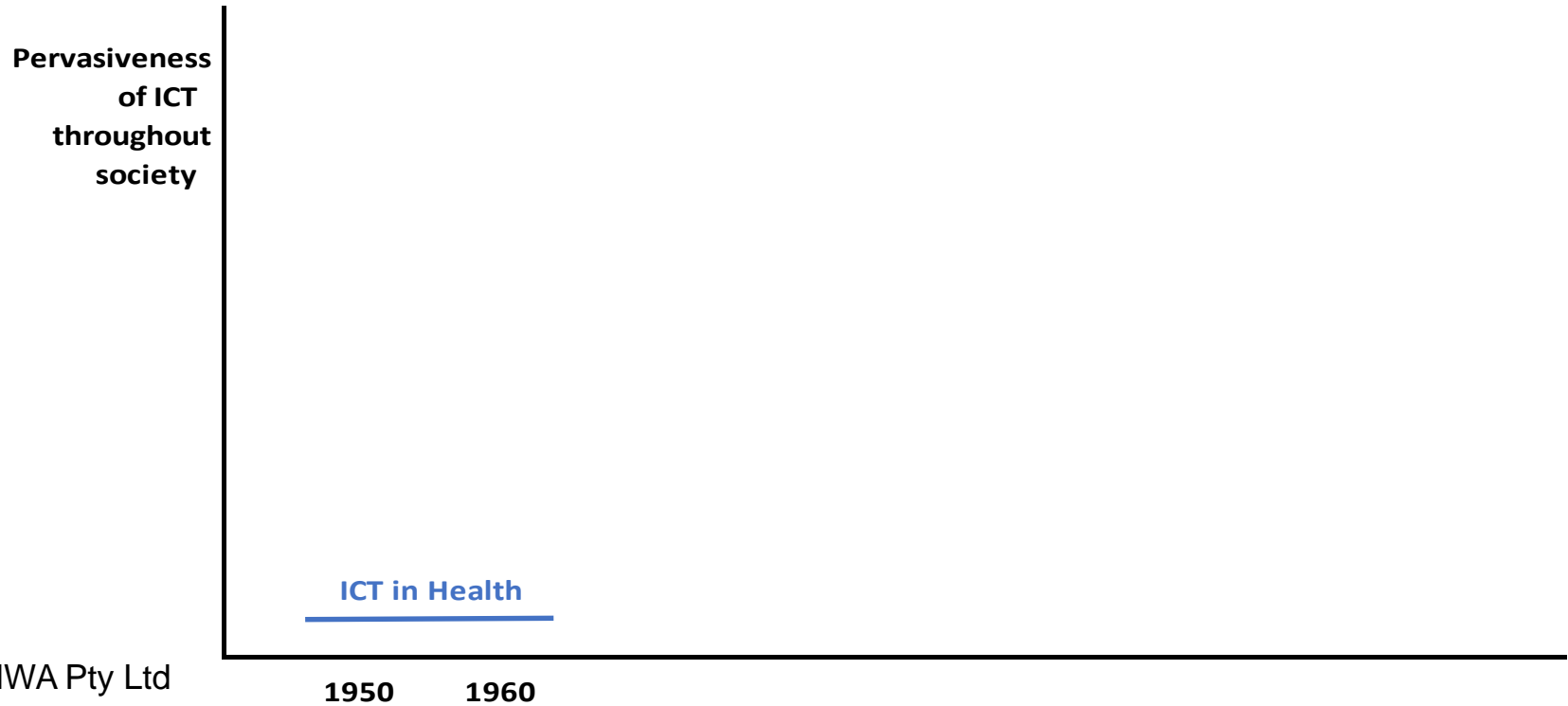
(Ericksen, 2018)

- “The convergence of the digital and genomic revolutions with health, healthcare, living and society”

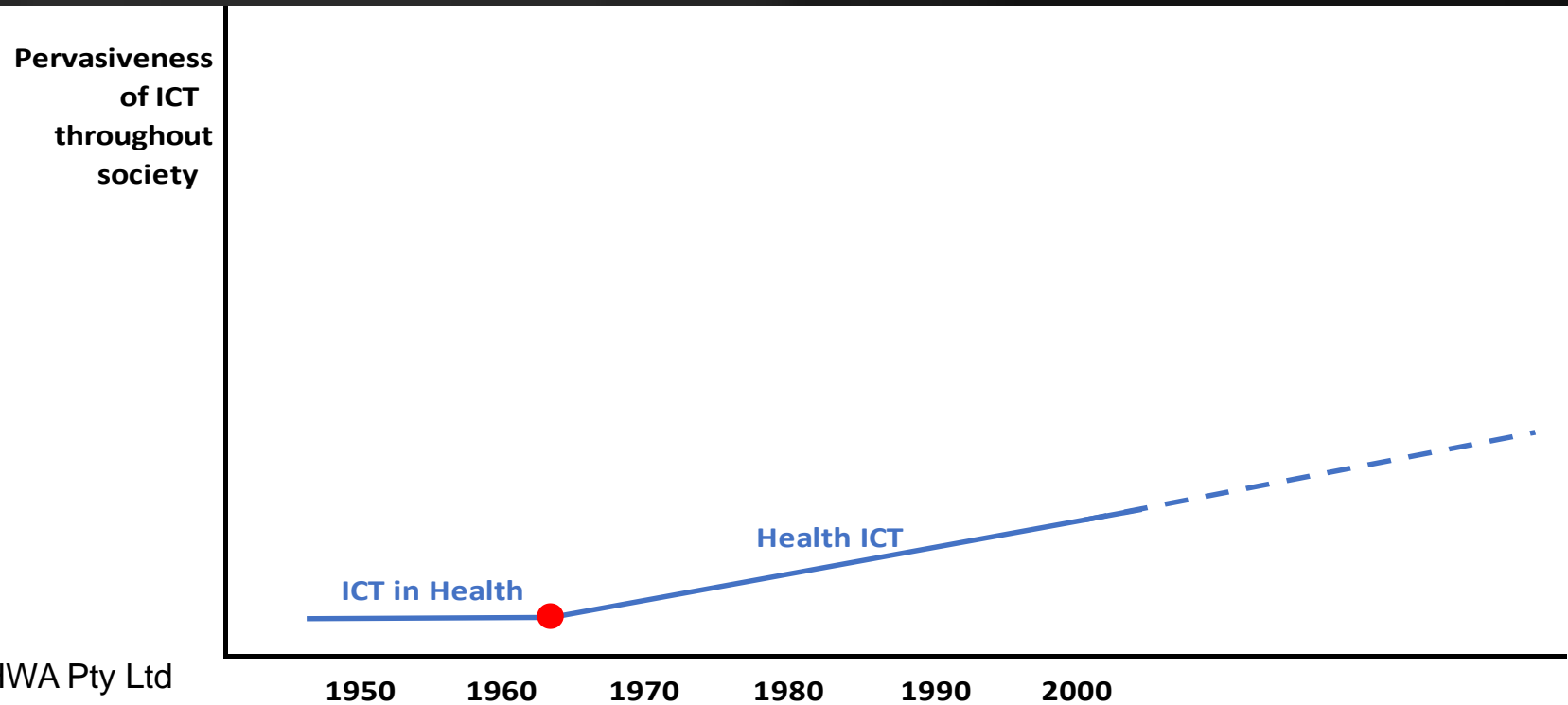
(Sonnier, 2017)

Premise – Digital health represents a paradigm shift

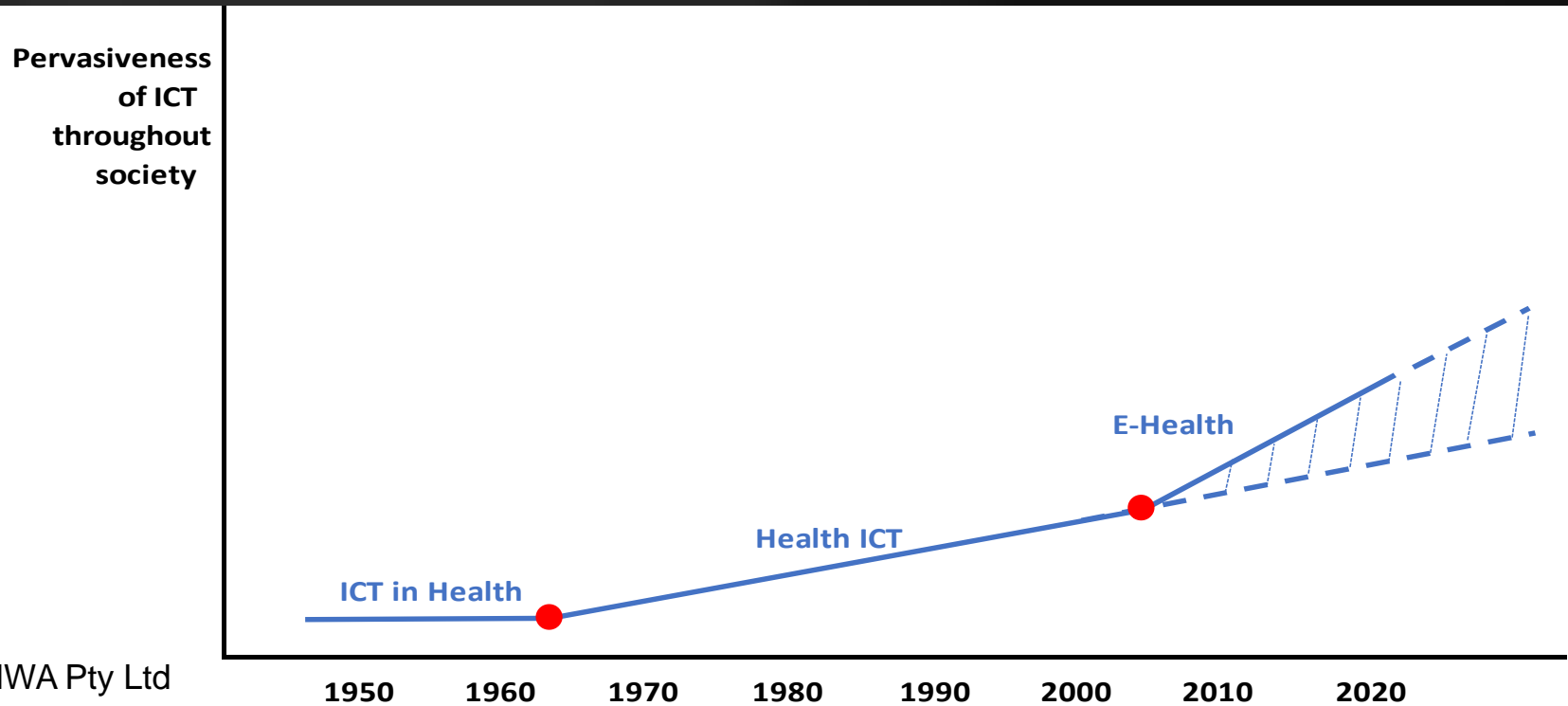
An evolutionary perspective



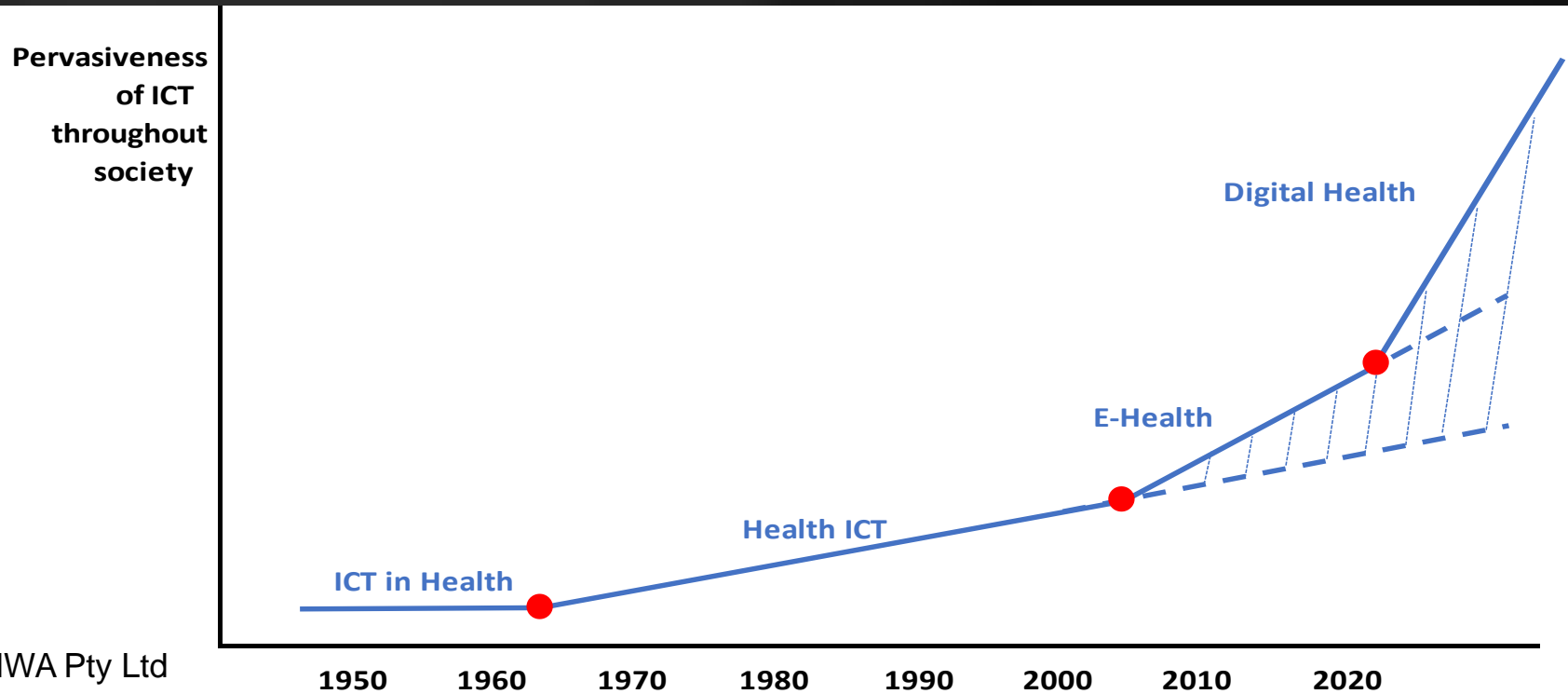
An evolutionary perspective



An evolutionary perspective



An evolutionary perspective



Digital health is Health, and health service delivery in the context of a digital society. It:

- Harvests data/information/knowledge in real time from all societal activities, not just health system interactions
- Uses sophisticated analytics to distil knowledge from them
- Intervenes in the widest possible range of societal activities and technologies to encourage and generate better health and better value for health investments
- Is citizen (not provider/customer/patient) centric, decentralised and requires health service providers to participate, not control.



What's in a name? Why does it matter?

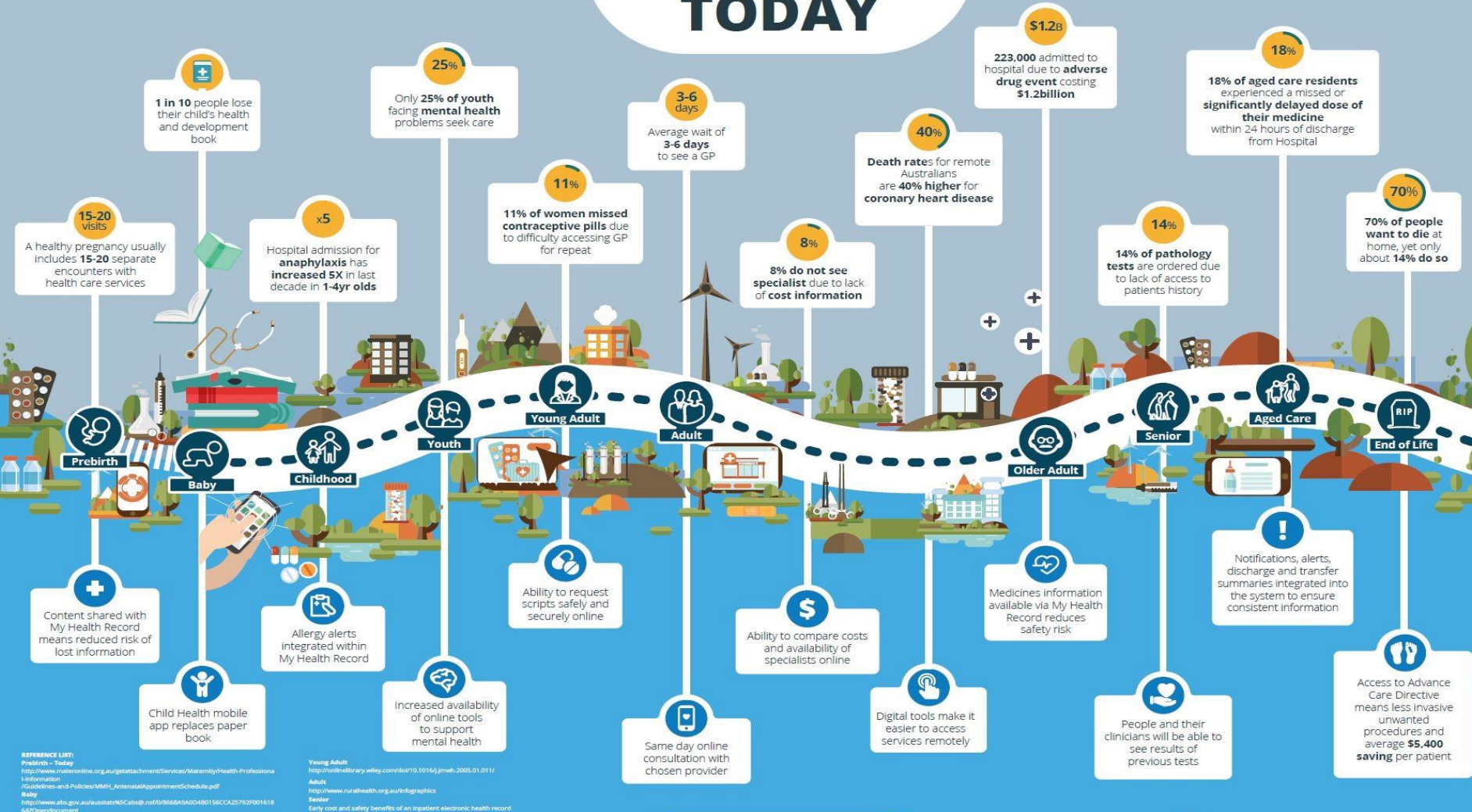
- Recent research indicates that Australia's physicians expect more digital health technology impact than consumers do, but there is a strong disparity in scope. (EY, 2018).

What's in a name? Why does it matter?

But:

- Physicians think substantial tech-enabled care will happen - in the context of traditional services
- Consumers are interested in tech-enabled care – anywhere!

TODAY



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Prebirth

Baby

Childhood

Youth

Young Adult

Adult

Older Adult

Senior

Aged Care

End of Life

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FUTURE

Health ICT, e-health or digital health?

A private hospital, implementing a new patient administration system (PAS), EMR or departmental system (e.g. PACS/RIS/ Theatre Management) system primarily for single organisation purposes

Health ICT, e-health or digital health?

A GP practice or allied health practice implementing a practice management system on primarily a single practice basis

Health ICT, e-health or digital health?

The implementation MyHealthRecord

Health ICT, e-health or digital health?

A public hospital implementing a statewide EMR with the capacity to connect to MyHealthRecord, medication management repositories, external providers such as private pathologists, etc., and which includes a patient portal

Health ICT, e-health or digital health?

Apple's Health App



Implications:

Health – A state of complete physical, mental, and social well being, and not merely the absence of disease or infirmity

(WHO, 1948)

Digital health – Opportunities and challenges

Digital natives as citizens, customers, clinicians, patients, carers, taxpayers, voters, regulators

Digital health – Opportunities and challenges

In every industry it has touched, digital disruption has:

- Broken down barriers to entry and enabled new players to enter the market
- Created winners and losers amongst existing players



Digital health – Opportunities and challenges

Forecasts are for more than a 15-fold increase in health data, half as much again as for other industries. Much of this will come from outside health services

Digital health – Opportunities and challenges

Artificial intelligence, robotics, IoT, etc.

- IEEE is now monitoring the performance of AI in relation to doctors
- Sensors can now accurately, reliably and rapidly detect (changes in) human emotions as well as biometrics.

Digital health – Opportunities and challenges

Clinical governance

- Assuring patient safety in the implementation of digital health systems and services. Unintended consequences should be expected
- Ethical issues

Transformation

- Conveys a *complete* change
- Change may or may not be so complete
- Change is about doing it better.

Transformation is about redefining it.

Change

vs

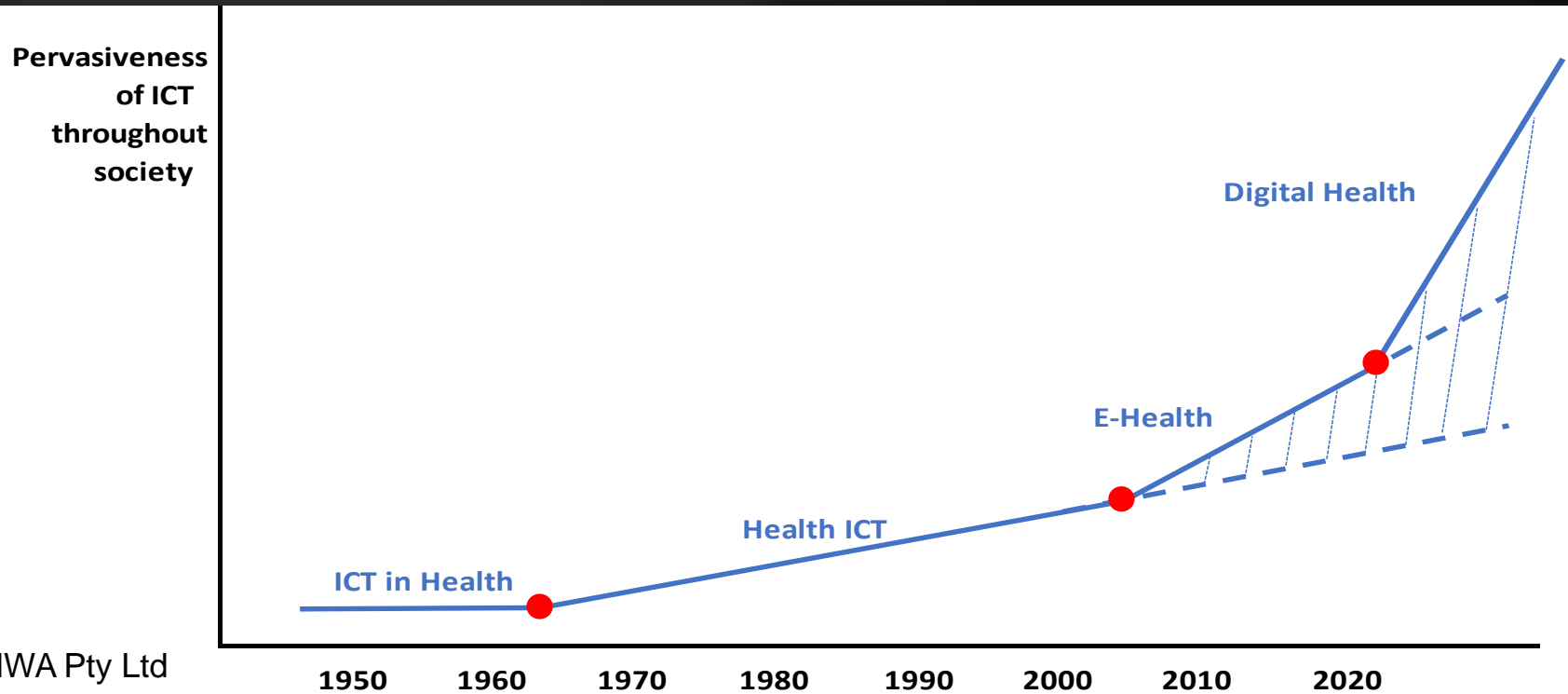
Transformation

- Result = improvement
- Build on the past to get to the future
- Based on opportunity

- Result = difference
- Forget the past, it's been disrupted
- Based on necessity



An evolutionary perspective



Imperatives for health service executives

Raise awareness:

- Get all of your executive on the same page
- Try reconstructing your organisation's mission, vision and values in the context of digital health

Imperatives for health service executives

Align executive and organisational cultures to potential new realities:

- Promote innovation at all levels
- Change from being the centre of your universe to being just one of the stars

Imperatives for health service executives

Re-conceptualise patient/client/citizen experiences:

- Look at other industries/technologies
- Systematically unlearn and re-learn

Imperatives for health service executives

Review existing key capabilities:

- Is your IM/IT organisation:
 - A trusted operator?
 - A change instigator?
 - A business co-creator?



Imperatives for health service executives

Review existing key capabilities:

- Is your clinical governance/leadership:

Digitally literate. Aware. Astute?

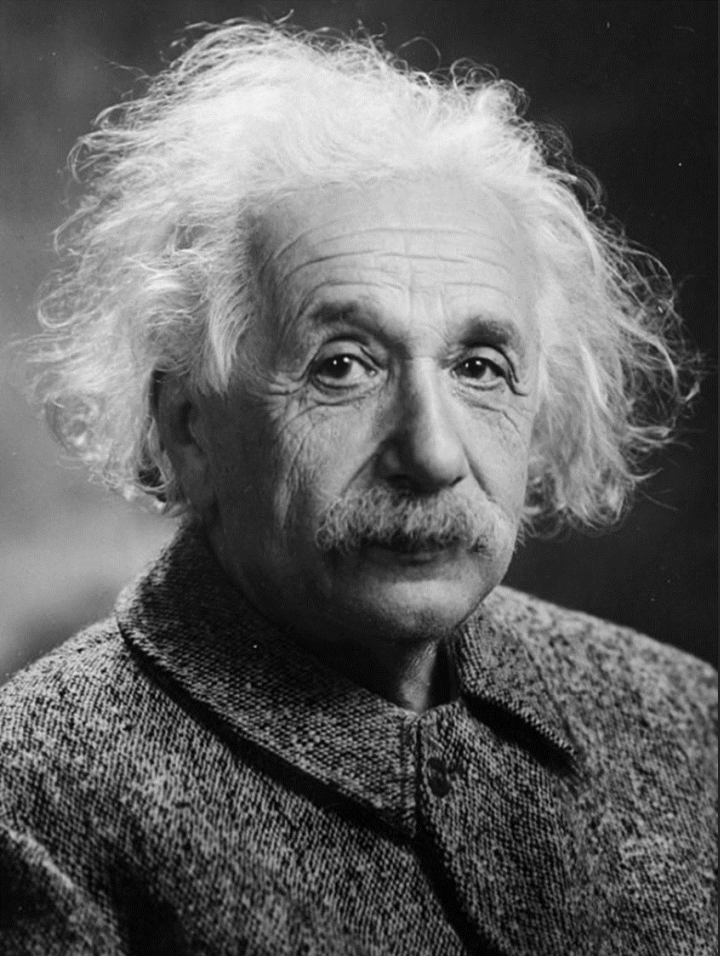
Willing & able to envisage/lead changes to their professions

Imperatives for health service executives

Build new capabilities:

- To capture external, real-time data and integrate it with your own
- To assure data quality and provenance
- To deliver & receive services virtually





“If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.”

Albert Einstein