



Digital thinking in health services: *opportunities and new ideas*

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Ballarat **Health** Services
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Ballarat Health Services



BHS is the main public referral health service to a catchment population of around 250,000 people across the Grampians region, and has been providing quality care for more than 160 years.

- BHS delivers care across all settings: in hospital and, increasingly, in the community and people's homes.
- BHS is the largest public provider of residential care in Australia.
- BHS is the largest employer in Ballarat





BHS statistics for 2017-18



Today

Potential role for digital technologies in relation to

- Hospital acquired complications
- Health Resource Stewardship



Using digital technologies to better prevent hospital acquired complications (HACs)

Imperatives

- July 2019 health organisations will not be funded for additional costs of hospital acquired complications (approx. 8-10% reduction in payment per episode)*
- Despite decades of prevention effort HACs still occur worldwide
- Targeting for prevention relies on standard risk profile and standard prevention actions
- HACs in Ballarat approximately 1500/ 100,000 population
 - assuming same rate for Victoria = >94,000 per year
 - assuming same rate for Australia = >375,000 per year
- New thinking for improved identification of risk should permit better targeting of prevention strategies

Team

Ballarat Health Services

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Paul Basso, Decision Support Manager
Sharon Sykes, Innovation and Improvement Co-ordinator

CSIRO Health & Biosecurity Business Unit

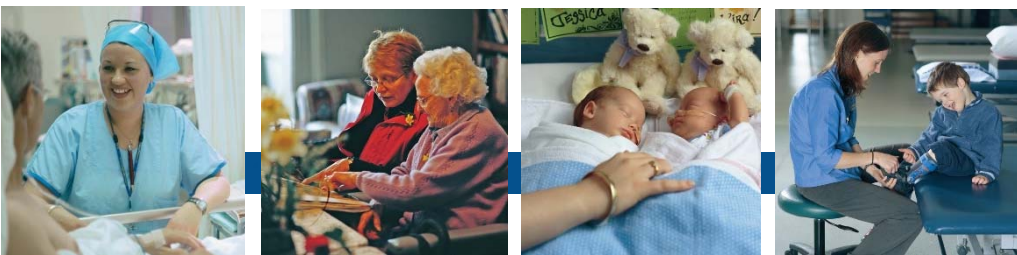
Dr Rajiv Jayasena Group Leader and Victorian Lead Australian E-Health Research Centre
Dr David Rolls Senior Health Statistician

[*Independent Hospital Pricing Authority 2018 Risk Adjustment model for hospital acquired complications](#)

Using digital technologies to better prevent hospital acquired complications

**Table 1: Ballarat Health Services
Hospital acquired complications - Independent Hospitals Pricing Authority definition**

Hospital acquired infection group	Financial year			
	2014-15	2015-16	2016-17	2017-18
01. Pressure Injury	63	28	27	12
02. Falls resulting in fracture or other intracranial injury	12	15	16	25
03. Healthcare-associated infection	371	337	455	566
04. Surgical complications-return to theatre	227	147	156	110
06. Respiratory complications	101	80	77	79
07. Venous thromboembolism	8	10	10	30
08. Renal failure	86	90	98	94
09. Gastrointestinal bleeding	57	61	50	65
10. Medication complications	150	164	159	157
11. Delirium	144	134	165	147
12. Persistent incontinence	48	34	25	15
13. Malnutrition	10	10	14	24
14. Cardiac complications	229	218	267	255
REPORT TOTAL	1,506	1,328	1,519	1,579



Using digital technologies to better prevent hospital acquired complications (HACs)

Inquiry

Given socioeconomic position is a risk factor for almost everything else

- does socioeconomic position contribute to HAC risk?
- can characterising HAC risk from socioeconomic position help target prevention strategies?
- If so how could this happen in a timely way?

Idea

Use 5 years of data from BHS to determine whether routinely collected sociodemographic data is associated with increased likelihood of HAC

If it is

- develop and test targeted prevention and protection strategies for vulnerable people at high risk
- streamline rapid risk assessment which then prompts specific targeted prevention and protection strategies



Health Resource Stewardship:

Using digital technology to empower every worker to be a health resource steward

Imperatives

- Cost of health care every increasing, people living longer, therapies more expensive, more courses of therapy, increasing community expectations
- Literature and research point to substantial resource waste including due to clinical variation, adverse events, overuse of medications, unnecessary testing, over-diagnosis, teamwork failure, delays, care in the wrong place, overstaffing, duplication and re-do, unsafe work practices
- Everyone who works in health care has experienced waste
- Some estimates suggest 20-30% of the health budget is wasted

Inquiry

- Training staff to identify and intervene to reduce health resource waste is underway
- Current evaluation relies on manual data collection and calculation



Health Resource Stewardship:

Using digital technology to empower every worker to be a health resource steward

Idea

Use digital linking and synthesis to provide rapid return-on-investment data regarding implemented or proposed strategies for health resource stewardship to enable rapid targeted improvement

→ Would inform wider evaluations and re-shape clinical and business processes in healthcare making it safer and more efficient

Team

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Questions



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