

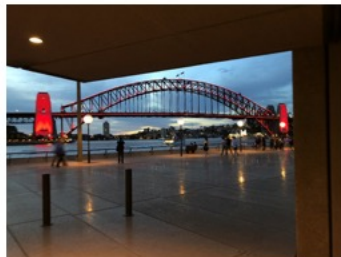
**Advantages, Pitfalls, and Lessons Learned From High-Tech Learning and Teaching Strategies**  
**Prof. Marilyn Cruickshank, Australasian College of Infection Prevention and Control**  
**Broadcast live from the 2019 IPAC Canada Conference**

**Advantages, pitfalls, and lessons  
learned from high-tech learning and  
teaching strategies**

Professor Marilyn Cruickshank  
President



**ACIPC**  
Australasian College  
for Infection Prevention and Control




- Federation of states & territories
- Health funded by commonwealth but managed by states & territories
- 60% surgery undertaken in private hospitals

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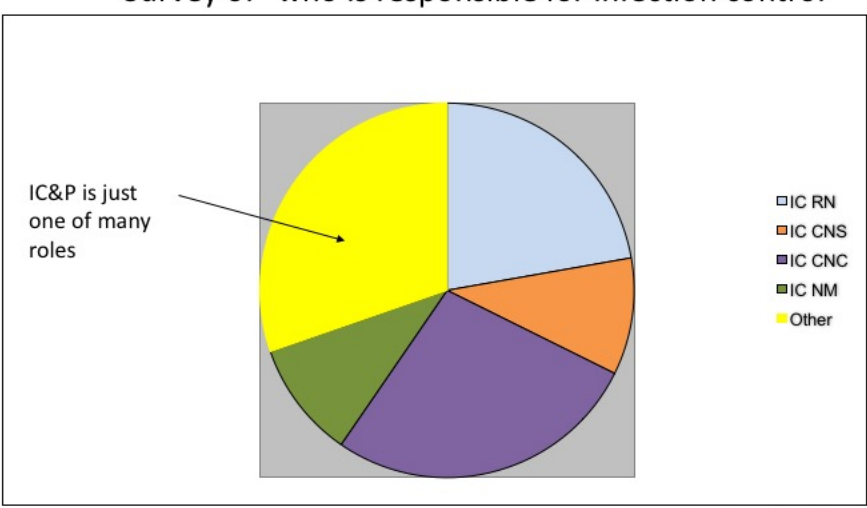
### Rural and regional hospitals

- About 1/3 of hospitals in Australia are < 20 beds
- Depend on GP visiting medical officers
- Lack of access to ID physicians, clinical microbiology, pharmacists or pathology services
- Lack of access to education and training
- Difficulty in retaining experienced clinicians



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d Control


### Survey of “who is responsible for infection control”



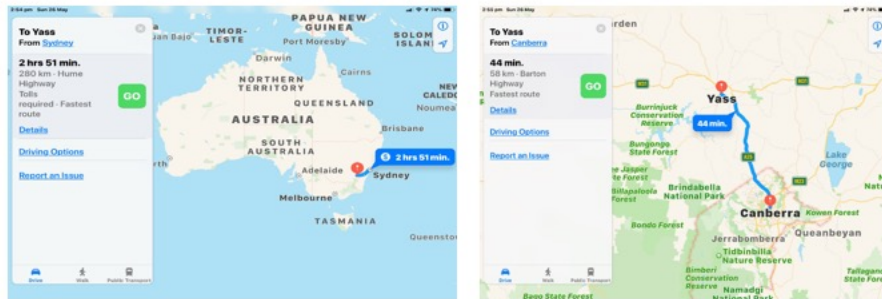
IC&P is just one of many roles

- IC RN
- IC CNS
- IC CNC
- IC NM
- Other

277 hospitals



## Yass – 3 hour drive from Sydney and just under an hour drive from Canberra



### Multi Purpose Service

10 acute beds

1 Visiting medical officer (local GP)

1 bed emergency department 140 presentations / month

700 non-admitted occasions of service per month

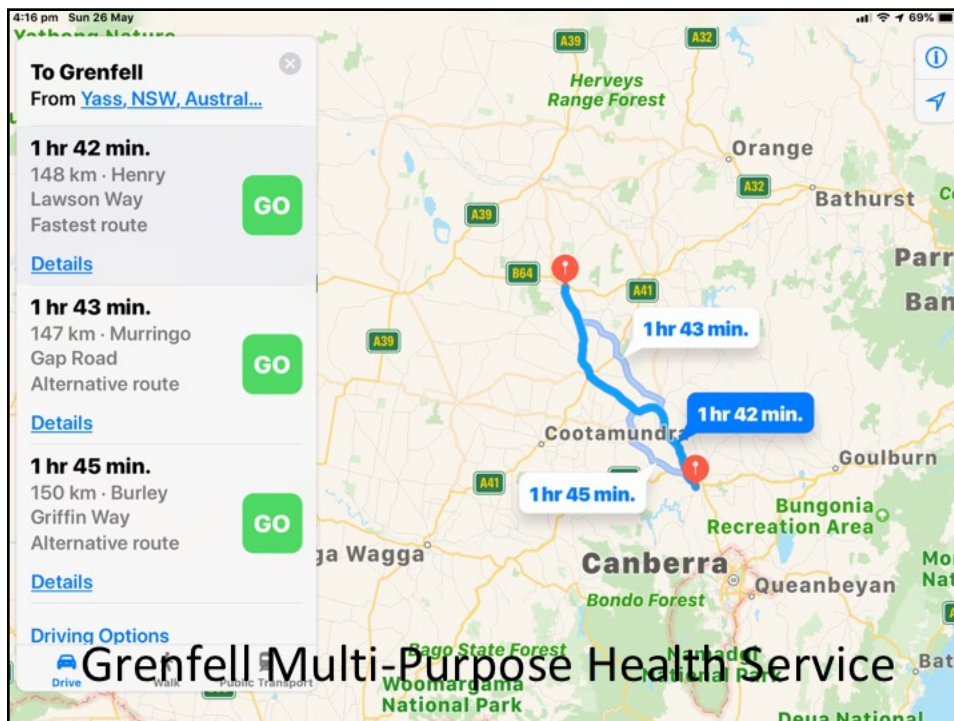
- Physiotherapy, Occupational Therapy, Social Worker, Dietitian. Community District Nursing Services in the home, Wound Clinics, Women's Health Services, Child and Family Health, Audiometry and Health Promotion Programs.



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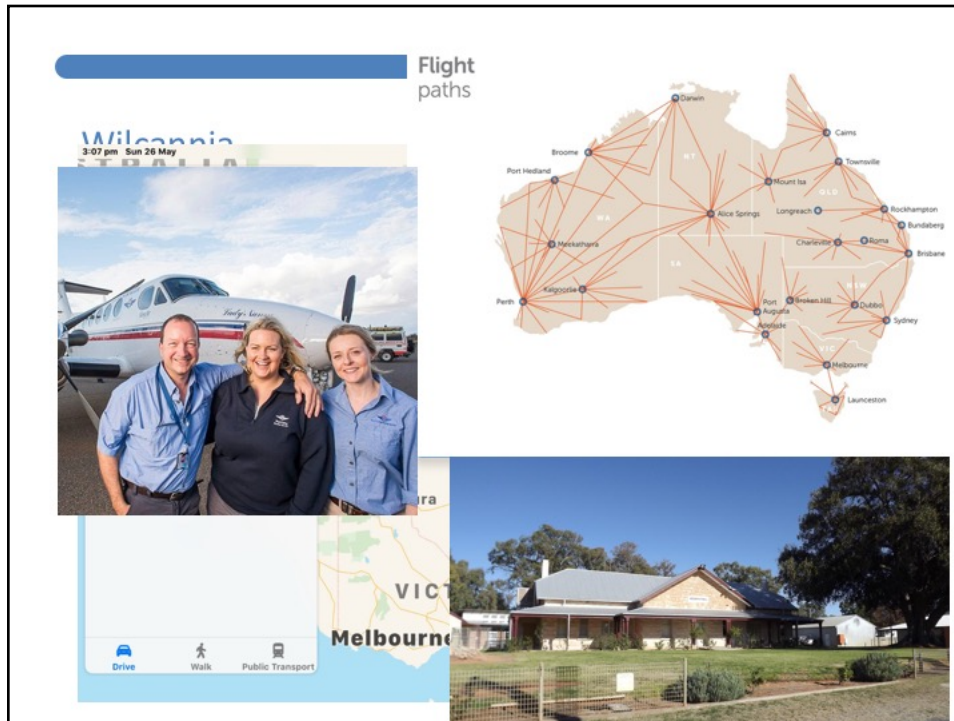


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10

## Building clinician capacity

1. Web based modules for new antibiotic prescribers
2. Seminars for ID/Micro trainees
3. Workshops AMS for nurses
4. AMS and Antibiotic classes videos
5. Online orientation for infection prevention and control
6. Hand hygiene modules
7. 10 infection & prevention modules

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## Basic principles of infection management

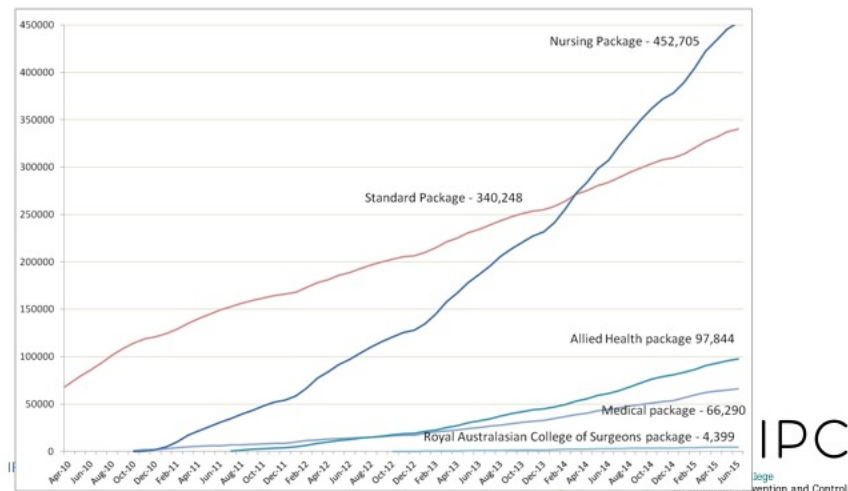
1. Principles of infection control
2. Basic epidemiology/statistics
3. Surveillance **> 23,500 registered users**
4. Basic microbiology/multi-resistant organisms
5. Introduction to infectious diseases
6. Immunisation of healthcare workers
7. Outbreak investigation and management
8. Building works
9. Occupation exposure management
10. Cleaning, disinfection and sterilisation

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## Hand hygiene Online Learning Package Completions



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## What does the research show us?

Computer assisted learning is as effective as traditional teaching (Buchowski, 2002)

Some studies found computer teaching better than traditional (Desai, 2000; Wharrad, 2001, Jefferies, 2001)

Blended learning resources (Coyne, 2018)

Flexible learning for distance education (Lewis, 2016)

## Research questions



1. What extent are nurses willing to use technology for ongoing learning?

2. How do nurses' learning preferences vary based on the educational delivery mode?

3. What influence does the type of ongoing education have on nurses' preferences to learn with technology?

4. What role do demographic factors have on nurses' willingness to learn with technology?

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## Demographics of respondents employed in rural and regional hospitals (n = 387)

### Professional designation

- Infection control professionals 38%
- Registered nurses 22%
- Clinical Nurse specialists 10%
- Other nurses with IC roles 30%

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## What were nominated as successful sessions

1. Introduced to basic theory
2. Theory needs to be processed to participate in interactive hospital scenario
3. Assessment to demonstrate consolidated learning
4. Video quiz to test users' observations of errors in different scenarios
5. Important words need to be hyperlinked for glossary

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## Technology as a solution to deliver IC education

- Access anytime during 24 hours
- Learn at time to suit needs and workload
- Most popular time are overnight and weekends

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## Positive responses from nurses

- Easy to use and understand
- Visual, fun, quick, can do it in my own time and pace
- To the point
- Interesting and interactive

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### Common barriers reported

Management need to ensure staff have time to complete

Installation of systems can be difficult and time-consuming

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### Technological issues with implementation

- Plug-in required to be downloaded – can take some hours to identify from possible lists and then downloaded
- Loading software onto internet servers – administrator rights
- Networked PCs connect to hospital intranet server
- Basic computers on wards operating on central servers
- Different kinds of computers
- Technical issues

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### Implementation issues

- Nurses need access to logon and password
- Refusal by hospital IT teams to download plug-in – affect primary role of delivering healthcare information
- Access denied – need administrator rights to access – need a local account with generic username and password – can be contrary to hospital policy
- Availability of PCs – often not available to nurses – managers offices – doctors rooms

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### Programming errors

- Display size – complete picture not displayed without scrolling can affect ease of use and enjoyment
- Access to sound and printer – often complementary not essential but can impact on enjoyment
- Time and costs of IT services – web managers and IT technicians required to sort out access
- Video clips not recognised on hospital computers

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## Negative comments

- Problems going through the package due to lack of knowledge with computers
- Images unclear
- No chance to ask questions

## Suggestions for improvement

- Pictures could load faster
- Know the score as you go
- Print out any learning
- More scenarios with pictures of patients

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## Conclusion

### What makes a successful IT learning package?

- Learner must be active in process of learning
- Variety of activities and self assessments needed for engagement
- Relevance to environment and social context
- Pictures and videos of realist hospital settings
- Humour, song and interactivity – fun and original
- Small chunks of learning

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Thank you to  
nurses who  
participated and a  
special thanks to  
Shelley Bates for  
data analysis



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