

# Mobile computing at Royal District Nursing Service

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# Overview

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- Vision and history with mobile computing
- Lessons learned/requirements
- Security
- OH&S
- Evaluation - outcomes
- Current refresh
- The future

# Who is RDNS?

- Established in **1885**
- In 05/06
- **20** sites
- **1,336** staff
- **30,937** clients treated
- **1,495,665** visits
- **515,000** hours of direct care
- **560** fleet cars



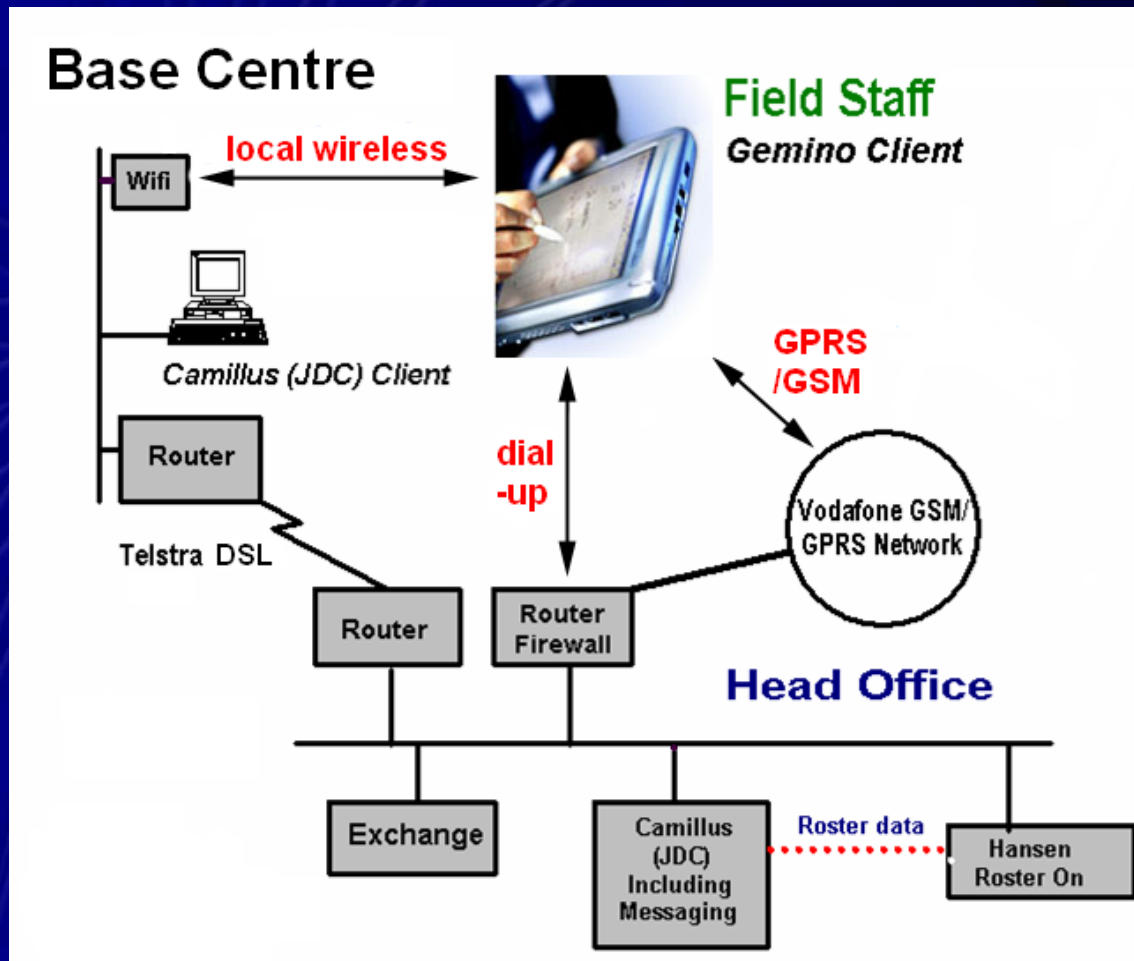
# The Vision

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- SISP - 1995-2000
- Homecare 2000
  - *To provide all field staff with mobile computing*
  - *Keeping emphasis and focus on enhancing client care*

# Architecture : 2003-2006

- Camillus client information system
- Gemino mobile application
- Roster system
- GSM/GPRS/CDMA



# History – 2000 to 2003

Sharp

PV 5000



# Sharp PV 5000

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- Pen-based touch screen
- CE platform with Gemino software
- No hard drive only RAM
- Connection via GPRS

# History 2004 - Compaq TC1000 tablet



# Compaq TC1000 tablet

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- XP platform with Gemino software
- Touch screen and handwriting recognition
- Detachable keyboard - versatility of use
- Mobile connection via GPRS PC card

# Perceived benefits for client care

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- Start from home - more direct care
- Real-time access to client data and email
- Clinical and administrative support
- Independent practitioners - totally mobile
- Increased flexibility and responsiveness
- All from single trusted source of data

# Lessons learned: Usability considerations

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- Battery life
  - New generation devices should give close to 8 hours use with the addition of in car battery charger.
  - A spare battery with or without charger may need to be negotiated as part of the pack.
- Weight/Size (OH&S)
  - Lighter is better but also weight distribution can be a factor. Eg battery located closer to body when being held is better
  - Staff prefer a lighter and compact device but with good screen visibility

# Lessons learned: Use-ability considerations

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- Pen based
  - PEN based preferred by clinical staff. Less keyboarding. Assessment staff may need the capacity to draw diagrams or on to diagrams as an important consideration.
- Flexibility
  - Tablets swivel screen to set up right or left handed users (OH&S)
  - Can configure a tablet flat to sit discreetly on lap like a book. Some clinicians/clients prefer this if the computer is felt by either party to be an obstacle in the professional relationship or interaction during the assessment/interview process. (see evaluation data later)
  - Can be used like a laptop for more data entry (OH&S)

# Technical considerations for 2007

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- CPU 1.6 Gb or greater
- Dual core processor
- RAM 1mg
- 12 inch LCD display
- 1024 x 768 resolution
- Connectivity to LAN, wireless etc
- Bundle including charger, cover or compendium, spare battery

# Deployment/ Service considerations

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- Deployment process
- User training/documentation
  - Upfront and ongoing –don't underestimate
- Technical support
- Work practice support- after hours?
- Service level agreements - same day or next day service/repair
- Warranty/insurance against accidental breakage

# Security considerations

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- At the minimum, hard drive encryption to protect data security in case of accidental loss or theft
- RDNS now: bios password, network password, application passwords
- Moving to RSA token security 2007
- Issues
  - Maintain balance of security with useability

# Data considerations

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- Back up and data management/storage/warehousing process
- Governance- who owns/stores/controls/shares etc
- If all stand alone devices how will data be shared?
- Reporting tools/expertise/format?

# OH&S

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- **Weight**
  - Lighter is better
  - Bags compendium for field nurses, laptop bag or wheelie bag on order (can use own).
- **Screen size**
  - Visibility in bright light
  - Size of text
  - No of screen changes required to complete forms
- **Keyboard size**
  - Important if a lot of data entry is required
- **Use in car**
  - Securing (missile) – pizza bag secured to passenger seat
  - Twisting

# Formal Evaluation

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*In 2005 RDNS initiated an independent formal evaluation of the MCS by Opticon Australia which focussed on seven key themes: client care; work practice; use; satisfaction and value; system cost and saving, system management and support model and technical performance.*

# Evaluation methodology

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*The detailed findings were gathered using*

- *online survey (over 400 responses)*
- *workshops with clinicians, administration and support staff at regional Centres*
- *accompanying clinicians “on the road”*
- *interviews with Managers and Executives*
- *review of documentation.*

# Key Findings – telling it “As it Is”

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- *There has been a very successful deployment of the MCS across RDNS*
- *The nursing staff are positive about having and using the MCS. There is a large “bank of goodwill” towards it and they would welcome enhancements.*

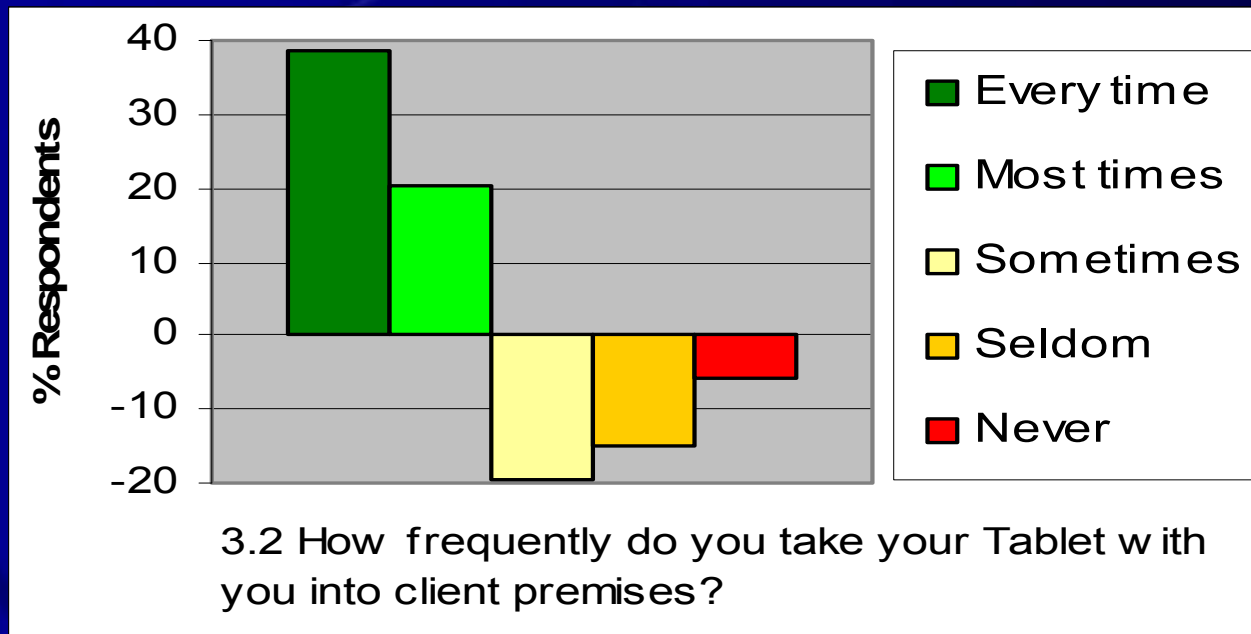
## Key Findings cont...

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- *There have been issues with MCS reliability and functionality that degrade benefits, productivity and satisfaction*
- *The MCS significantly achieves RDNS objectives in relation to visit management but there is more work to do in relation to the MCS improving client care.*

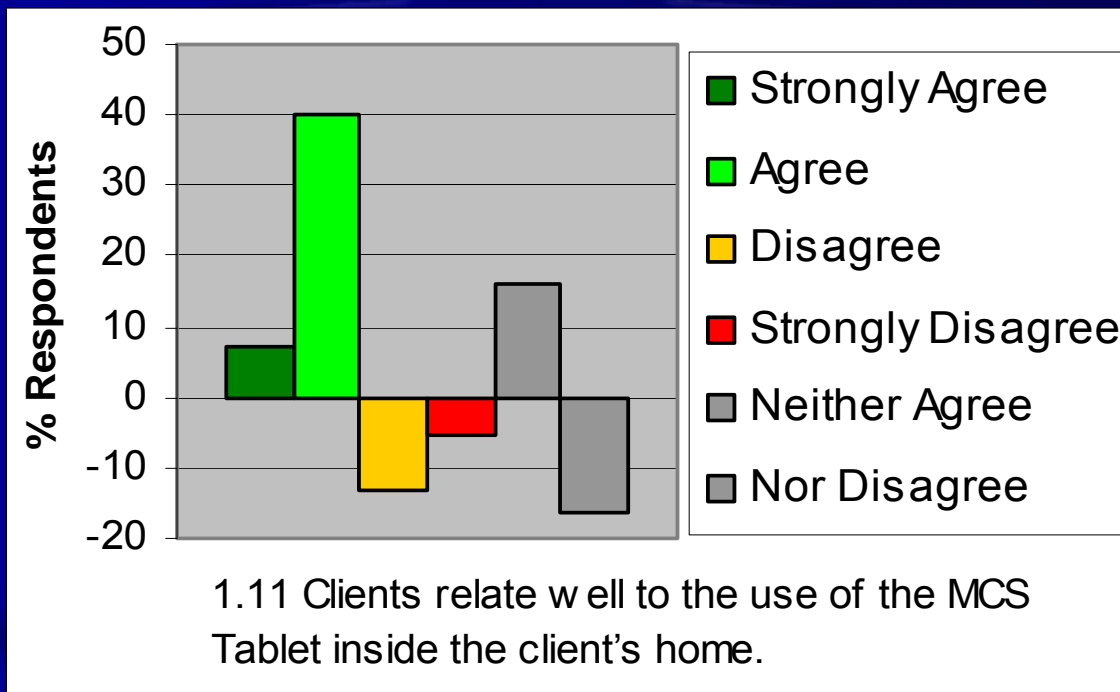
# Using the tablet in the client's home

Clinicians have mixed practices and views about using the tablet in the client's home.



# Using the tablet in the client's home cont...

Chart 1.11 shows clinicians have quite mixed views about how comfortable their clients feel about the clinician using the tablet (“a computer”) in their home.



# Using the tablet in the client's home cont...

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Further insights- MCS usage during client visits.

- MCS makes vital visit information available on site.

On the other hand,

- tablet/MCS tends to become “irrelevant” in the face to face client interaction.

*The client interaction with the clinician is strongly identified as a trusted relationship. Clinicians voiced significant concerns relating to the potential of “with client” use of tablets creating a barrier or intrusion into that interaction.*

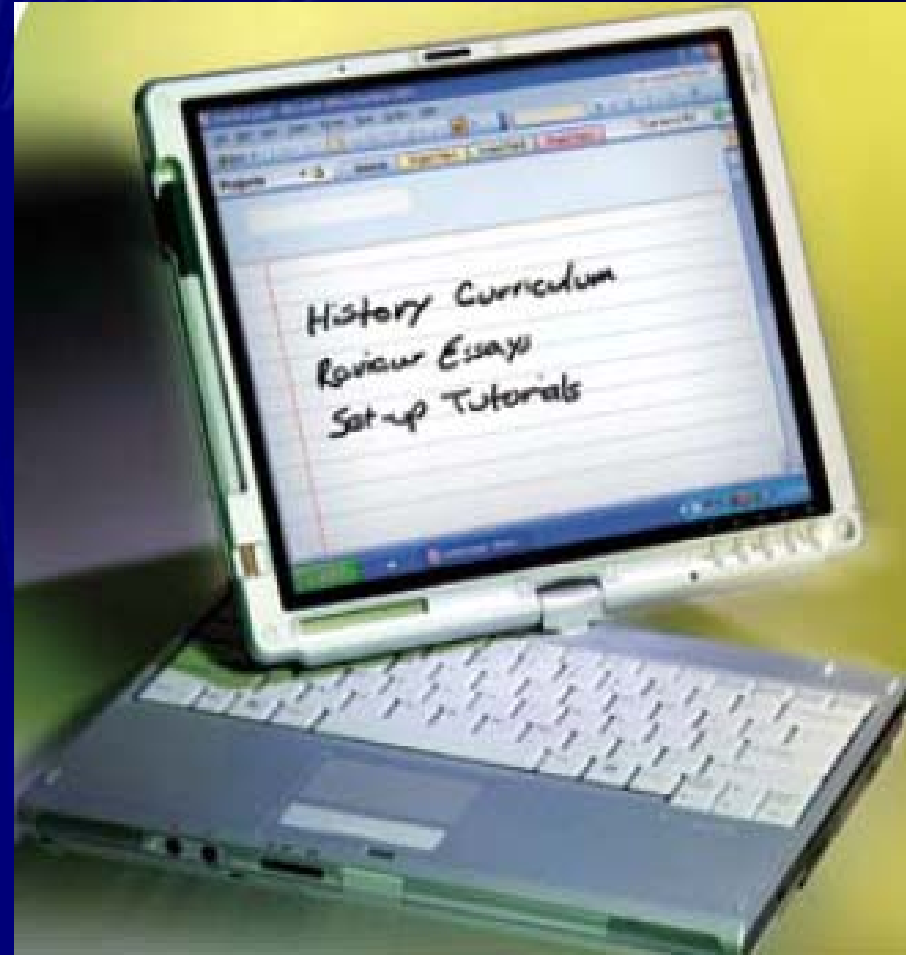
# Reflections

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- No evidence that perception is “real”
- Recommend staff use professional judgment in client interactions
- Less of an issue for well trained, experienced staff?
- No worse than paper forms?
- Use tablet flat on lap like a book to reduce physical barrier
- Opportunity for further Research with clients to measure the perceptions?

# Current Refresh

- Extensive tender 2006
- Fujitsu Lifebook T4215 Tablet PC
- Telstra Next G card
  - No connection black spots
  - Fast speeds
- Rollout Jan-May 2007
- BCA IT Integrators
- 2hrs training device and operating systems



# The future

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- ↑ connection reliability and speeds

Enables

- Faster access to decision support information and systems at point of care
- Increased access to and focus on Clinical data systems
  - InterRAI
  - Extend e-referral/communication events
  - Care plans/Pathways
  - Medication charts
  - Consent

# Contacts

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