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Health Assessment and Risk Management in Rural Persons with SCI

A retrospective study

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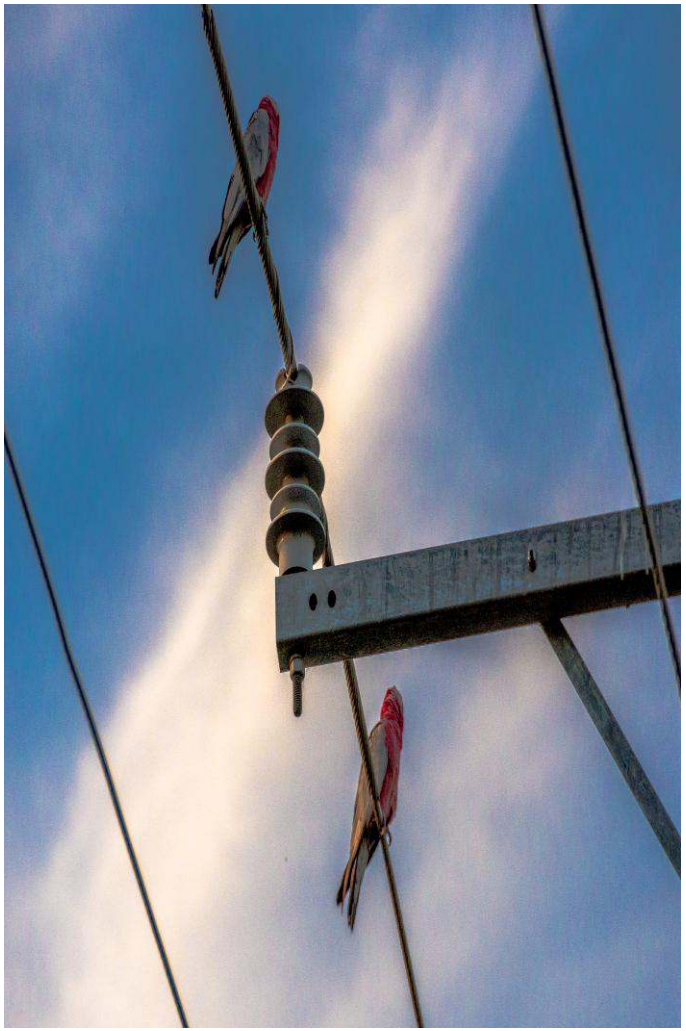
Royal Rehab
The Rehabilitation & Disability Support Network

Rural Spinal Cord Injury Service



- RSCIS model based on MAA funded pilot study (Middleton et al, 2008).
- Established in 2007 with recurrent funding from NSW Ministry of Health
- Metropolitan-based multi-disciplinary (5 FTE) team with SOS, supporting Rural SCI Coordinator (5 FTE) positions within LHDs (co-located with BIRPs)
- 'Hub and spoke' model

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Clinic Model

- Clinic model- what we do
- MD team
- Mail-outs
- Where we know people live
- Education of rural clinicians

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Rural Project Aims and Methods

1) Identify issues affecting people with SCI living in rural NSW

2) Based on analysis of the data, inform development of
   - Schedule of health surveillance
   - Minimum dataset & Outcome measures

- Retrospective study
- Post-clinic General Practitioner letters
- Rural Spinal Cord Injury Database
- Period: 2007 – 2012

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Results

- **681 rural clinic episodes**
- **387 individual rural clients**
- **Male 79% / Female 21%**
- **Paraplegia 55% / Tetraplegia 45%**
- **Mean (SD) Age: 48(±15) years**
- **Mean (SD) Time Post-injury: 15(±14) yrs**
  - 37% <1-5 yrs; 12% 6-10 yrs; **19% 11-20 yrs; 17% 21-30 yrs; 16% >30 yrs**

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Results – Medical issues

Issue	N (%)
Musculoskeletal pain	59
Neuropathic pain	44
Autonomic dysreflexia	42
Pressure injuries	25
Gastro-oesophageal reflux	23
Obstructive Sleep Apnoea	23
Sexuality and fertility	21
Recurrent UTIs	20
Constipation	19
Spasticity	17
Faecal incontinence	16
Bladder leakage	15

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Results – Other issues

Functional issues

Issue	N (%)
Lack of exercise / review	62
Seating equipment	50

Psychosocial issues

Issue	N (%)
Mental health / Well-being	22
Carer concerns	30

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Results – Time post-injury

- Increased bowel care time
- Prevalence/suspected OSA
- Increased upper limb pain
- Increased carer issues (>15 years)
- Less sexual and fertility issues (>15 years)
- Decreased mental health and psychological issues (>20 years)

Age ~

- Increased bowel care time
- Respiratory / prevalence of OSA

Injury level ~

- Prevalence of OSA (tetraplegia)
- MSK Pain (paraplegia)

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Health Maintenance Model

- **Framework for systematic follow up/health surveillance, management of risk factors and early intervention across the lifespan**
- **Expert, multidisciplinary follow up**
- **Self-management support & education**
- **Partner with local/visiting specialists & services to build capacity & provide timely access to expertise/accessible premises** (eg. equipment, seating, urology, sleep medicine, pain, dietetics, mental health, psychological support)
- **Ongoing access to rehabilitation**

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Health Surveillance

	Early					Mid			Late
Time Post-Injury (years)	*1y*	*2y*	*3y*	*4y*	*5y*	*6-10y*	*11-15y*	*16-20y*	*>20y*
Comprehensive Health Evaluation	✓	✓	✓	✓	✓	✓	✓	✓	✓
Physical Examination	Based on health screen, identified risk factors, family history								
Vital signs / measures - pulse, BP (sitting /lying), VC, weight/girth	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blood tests - including FBC, EUC, BSL, HbA1c, Chol, Vit D level	✓	✓	✓	✓	✓	✓	✓	✓	✓
Renal/Bladder USS	✓	✓	✓	✓	✓	✓	✓	✓	✓
Videourodynamics	✓				✓	Otherwise, as clinically indicated			
Cystoscopy (IDC/SPC)									✓
OSA screen		✓			✓	✓	✓	✓	✓
Bone Densitometry*	✓		✓		✓		✓		✓
Immunisation	Based on general adult guidelines and being in high risk category (eg. tetraplegia and respiratory problem)								

NB. This health maintenance schedule provides an overall guide to recommended regular health surveillance activities and investigations. However, it should be tailored to the individual with SCI based on a risk assessment.

*A baseline DEXA scan should be performed during acute inpatient hospitalisation, repeated 12 months later and then at least 2-yearly during first 5 years or so post-injury, when bone demineralisation may be most rapid with a therapeutic window to prevent or minimise bone loss.

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Multidisciplinary Review

Time Post-Injury (years)	Early					Mid			Late
	1y	*2y*	*3y*	*4y*	*5y*	*6-10y*	*11-15y*	*16-20y*	*>20y*
In addition to comprehensive Health Evaluation	✓	✓	✓	✓	✓	✓	✓	✓	✓
OT review (home/community/workplace accessibility and equipment)	✓	✓			✓	✓	✓	✓	✓
Multidisciplinary clinic r/v (ADL, community mobility, participation, lifestyle demands, equipment & care)	✓	✓			✓	✓	✓	✓	✓
Seating assessment		✓			✓	✓	✓	✓	✓
Dietician nutrition review		✓			✓	✓	✓	✓	✓
Screen for mental health /psychological issues	✓	✓	✓	✓	✓	✓	✓	✓	✓
Assess sexual dysfunction	✓	✓	✓	✓	✓	✓	✓	✓	✓
Assess relationship issues	✓	✓	✓	✓	✓	✓	✓	✓	
Assess family/carer health, stress & support needs	✓	✓	✓	✓	✓	✓	✓	✓	✓
NB. This health maintenance schedule provides an overall guide to recommended frequency of health surveillance activities, but should be tailored to the individual with SCI based on a risk assessment.									

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How to support the Health Maintenance Model

- **Proposed GP health surveillance model for SCI (Mann et al, 2007; Middleton et al, 2008) has not worked**
- Greater focus on **supporting self-management**
- Dedicated funding to **expand the role of Rural SCI Coordinator**
- **GP liaison/primary health networks**
- **Build capacity/networks, strengthen integrated care processes,** developing and supporting a multi-disciplinary **'Community of Practice'**
  - to interact and learn together, exchanging knowledge and creating solutions to specific problems (Wenger, 1998; Ranmuthugala et al, 2010).

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Resources

- **Develop adapted tools/checklists** (such as **SOS-HQ**, WUSPI)
- **Individualised health surveillance program** with follow-up based on risk
  - For example, h/o recurrent UTIs/sepsis, AD, PI surgery, syringomyelia, functional decline, falls, severe pain, mental health disorder
- **Minimum Dataset**
  - ISCoS datasets, standardised measures for clinic reviews (eg. a bowel assessment tool)
- **Decision support tools for clinicians, to assist assessment and management**
  - Pain, pressure injuries,…

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Limitations

- **Retrospective data collection/extraction** from GP letters/rural database
- Coding of **non-standardised information**
- **Lack of valid, reliable assessment and outcome measures**
- Relatively **recent inception** of RSCIS (in 2007) may bias data to younger, more recently injured population
- Still a population not attending clinic
- Those attending clinic likely to be **more complex** (≥ 1 serious medical problem)

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Conclusion

- **Health promotion**
  - targeting priority health, functional and ageing (or increased time post-injury) issues
- **Ongoing surveillance**
- **Interdisciplinary approach**
- **Capacity building, networks & care integration**
- **Greater use of Telehealth as 'virtual clinic'**
- **Address unmet needs** (eg. psychosocial & carer support)

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