Our Journey to a new Fracture Liaison Service at RPAH and Balmain

Dr Bethan Richards
Head, Rheumatology, Royal Prince Alfred Hospital
Deputy Director of Research, Institute for Musculoskeletal Health, SLHD
Overview

• Ideal Service
• Existing services and Gap analysis
• The Model
• The Business Case
• The Brief
• Translating the business case and brief into reality
• What did we get?
• Next Steps
Service Planning will be key to its success

• What does the ideal service look like?
• What are we doing currently?
• What do we need to achieve an ideal service?
  • People
  • Infrastructure
  • Processes
• How does this integrate with our other current and planned services?
The Ideal Service

- Identify all patients with minimal trauma fracture (RPAH and Balmain)
- Appropriately screen all patients in timely manner (BMD, Vit D/labs)
- Ensure all patients receive appropriate, timely, evidence based treatment
  - Medical review when required
  - Education – disease, lifestyle measures, medications, falls prevention
  - Medications
- Treatment plan communicated to correct GP
- Ensure all patients appropriately followed up (accurate tracking system)
- Ensure appropriate outcomes easily recorded and reviewed (eMR/STARS)
- Patient centric, Efficient, Sustainable, Cost effective
- Integrated with existing services and resources
- Evolves with time
Site specific “Needs Analysis” to inform planning is key

Ideal – Existing = Needs
Rheumatology Outpatient Department RPAH

Osteoporosis
Review, manage, follow up pts with osteoporosis (primary or secondary) who have *not yet had their* first fracture*

Fracture Liaison Service
Screen all fractures presenting/referred to RPAH and Balmain Hospitals for *minimal trauma**

Bone Mineral Density Service

Infusion Room Service (1 RN)

Rheumatology Clinics (5 rooms, 9 AMOs, 3 ATs, 1BPT, 1 intern, 1 Back Physio, 1CNC)

Rheumatology Physiotherapy / Hydrotherapy (2.0FTE)

Rheumatology Research Unit (1 RA) / Institute for Musculoskeletal Health

*↑↑ referrals recently with aging population, aromatase inhibitors, anti-androgens, expansion transplant, HIV and CTD service

**↑↑ referrals expected once patients identified

0.8 FTE CNS and 0.2 FTE AMO (1 clinic/wk)
<table>
<thead>
<tr>
<th>Time</th>
<th>Room 2</th>
<th>Room 3 DS</th>
<th>Room 4</th>
<th>Room 5</th>
<th>Interview Room</th>
<th>External Clinics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MON AM</strong></td>
<td>Fu (CTD)</td>
<td>AT1 (Fu)</td>
<td>McGill (Gout)</td>
<td>AT2 (McGill)</td>
<td>BPT Gout (McGill)</td>
<td></td>
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<tr>
<td><strong>MON AM</strong></td>
<td>Fu (CTD)</td>
<td>AT1 (Fu)</td>
<td>Richards B (Rapid/gen)</td>
<td>AT2 (B Richards - Rapid)</td>
<td>BPT (Richards - Gen)</td>
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</tr>
<tr>
<td><strong>MON PM</strong></td>
<td>G RICHARDS (Gen/rapid)</td>
<td>AT3 (G RICHARDS)</td>
<td>Youssef (PsA/AS)</td>
<td>AT2 PsA/AS (Youssef)</td>
<td>BPT PsA/AS (Youssef)</td>
<td>SLE (B.Richards/Youssef)</td>
</tr>
<tr>
<td><strong>MON PM</strong></td>
<td>G RICHARDS (Gen/rapid)</td>
<td>AT3 (G RICHARDS)</td>
<td>Youssef (PsA/AS)</td>
<td>AT2 PsA/AS (Youssef)</td>
<td>BPT PsA/AS (Youssef)</td>
<td>AT2/AT1* SLE</td>
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<thead>
<tr>
<th>Time</th>
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<th>Room 2</th>
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<th>External Clinics</th>
</tr>
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<tbody>
<tr>
<td><strong>TUES AM</strong></td>
<td>AT1 (New Patient)</td>
<td>AT2 (New Patient)</td>
<td>AT3 (New Patient)</td>
<td>BPT (New Patient)</td>
<td>Intern New Pt (Opt)</td>
<td>Capillaroscopy</td>
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<tr>
<td><strong>TUES PM</strong></td>
<td>BPT New Pt (Haq)</td>
<td>I Haq (New Pt)</td>
<td>I Haq (New Pt)</td>
<td>B Richards (US)</td>
<td>Intern New Pt (Haq)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TUES PM</strong></td>
<td>BPT New Pt (Haq)</td>
<td>I Haq (New Pt)</td>
<td>Bleasel (Haemophilia) ¼</td>
<td>AT1 (Haemophilia)</td>
<td>Intern New Pt (Haq)</td>
<td></td>
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<tr>
<td><strong>WED AM</strong></td>
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<td></td>
<td></td>
<td>AT2 Wagga 1/4</td>
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<tr>
<td><strong>WED AM</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>AT2 Wagga 1/4</td>
</tr>
<tr>
<td><strong>WED PM</strong></td>
<td>Preadmission</td>
<td>BPT CTD (B Richards)</td>
<td>AT1 VASC/Myosi (B Richards)</td>
<td>VASC/Myosi (BR)</td>
<td>Preadmission</td>
<td>AT2 Wagga 1/4</td>
<td></td>
</tr>
<tr>
<td><strong>WED PM</strong></td>
<td>Bleasel (Gen) 1/4</td>
<td>BPT CTD (B Richards)</td>
<td>AT1 VASC/Myosi (B Richards)</td>
<td>VASC/Myosi (BR)</td>
<td>AT3 (Bleasel) 1/4</td>
<td>AT2 Wagga 1/4</td>
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<tr>
<td><strong>THURS AM</strong></td>
<td>C Needs (Biologics)</td>
<td>BPT (Biologics)</td>
<td>Youssef (Biologics / Research)</td>
<td>AT2 (Biologics/Research)</td>
<td>AT1 (Biologics/Research)</td>
<td>ILD Meeting (all)</td>
<td></td>
</tr>
<tr>
<td><strong>THURS PM</strong></td>
<td>C Needs (Acute Back Pain)</td>
<td>AT1 (ILD/Back alt)</td>
<td>AT2 (ILD/Back alt)</td>
<td>AT3 (Acute Back)</td>
<td>Physio (Back Pain)</td>
<td>BPT Teaching</td>
<td></td>
</tr>
<tr>
<td><strong>THURS PM</strong></td>
<td>C Needs (Acute Back Pain)</td>
<td>AT1 (ILD/Back alt)</td>
<td>AT2 (ILD/Back alt)</td>
<td>AT3 (Acute Back)</td>
<td>Physio (Back Pain)</td>
<td>Bleasel ILD Clinic (2/4)</td>
<td></td>
</tr>
<tr>
<td><strong>FRIDAY AM</strong></td>
<td>Vaile (Osteoporosis)</td>
<td>AT1 (Osteoporosis)</td>
<td>BPT (Osteoporosis)</td>
<td>C Needs (Osteoporosis)</td>
<td>AT2 (Osteoporosis)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FRIDAY AM</strong></td>
<td>Vaile (Osteoporosis)</td>
<td>AT1 (PHT 1/4)</td>
<td>BPT (Osteoporosis)</td>
<td>C Needs (Osteoporosis)</td>
<td>Geries AT (Osteoporosis)</td>
<td>PHT (peter 1/4)</td>
<td></td>
</tr>
<tr>
<td><strong>FRIDAY PM</strong></td>
<td>C Needs (Acute Back Pain)</td>
<td>BPT (Acute Back Pain)</td>
<td>Youssef (PsA/AS) 1/4</td>
<td>Physio (Back Pain)</td>
<td></td>
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</tr>
<tr>
<td><strong>FRIDAY PM</strong></td>
<td>C Needs (Acute Back Pain)</td>
<td>BPT (Acute Back Pain)</td>
<td>Youssef (PsA/AS) 1/4</td>
<td>Physio (Back Pain)</td>
<td></td>
<td></td>
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</tbody>
</table>

- **ILD Meeting** = ILD Meeting.
- **Bleasel ILD Clinic** = Bleasel ILD Clinic.
- **Registrar Teaching** = Registrar Teaching.
Estimating the Activity

• ~4000 fractures / year
• 20,152 fracture clinic occasions of service (OOS)
• 1200 BMDs/yr (potential 4000/yr)
• Only ~700 Osteoporosis/FLS clinic occasions of service
• Waiting times 4months
• Hip fracture data from the last 12 months shows that only 60% of patients >75 (n=410) were identified and adequately treated
• Infusions decreasing (denosumab vs zolendronic acid)
Initial projected increases in activity required to meet “Ideal” model KPIs

• 3-4 fold increase in BMDs
• 5 fold increase in fracture liaison clinic activity
• 2 fold increase in osteoporosis clinic activity
• 2-3 fold increase in physiotherapy/hydrotherapy referrals

• Sustainability note: compounded effect each year with new referrals and existing patients both requiring review
Requested Enhancements

Personnel
• 0.8 CNS
• 1.0 FTE Fracture Liaison Co-ordinator
• 1.0 FTE Bone Mineral Density Technician
• (0.2 FTE AMO (in process))

Infrastructure
• More clinic room space
• More office space
How much will this cost?

Table 1: Incremental Cost Impacts

<table>
<thead>
<tr>
<th>Proposed Resources</th>
<th>FTE</th>
<th>Base Salary</th>
<th>Oncosts @16%</th>
<th>Estimated Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMD Technician</td>
<td>1.0</td>
<td>$77,860</td>
<td>$12,458</td>
<td>$90,318</td>
</tr>
<tr>
<td>Fracture Liaison Co-coordinator (CNC2)</td>
<td>1.0</td>
<td>$108,943</td>
<td>$17,430</td>
<td>$126,373</td>
</tr>
<tr>
<td>Total ERE Costs</td>
<td>2.0</td>
<td>$183,784</td>
<td>$29,406</td>
<td>$216,691</td>
</tr>
<tr>
<td>Allowance for Goods &amp; Services</td>
<td></td>
<td></td>
<td></td>
<td>$21,320</td>
</tr>
<tr>
<td>Total Cost estimate</td>
<td></td>
<td></td>
<td></td>
<td>$238,011</td>
</tr>
</tbody>
</table>
## Considered Revenue sources and KPIs

### Sources of Revenue
- Activity (NWAU)
- BMD
- Infusion
- Reduction in second fracture costs (higher rates usually used in business cases ~40%)

### Key Performance Indicators*
- >80% MT fractures identified
- % BMD in last 12 months
- % FLS consult
- % appropriate treatment
- % Lifestyle measure modification
- % Falls prevention
- % Re-fracture (current data 10yrs old, ?ideal)
- Patient satisfaction / PROMs

*Not determined yet
## Potential Revenue / Dollars saved

<table>
<thead>
<tr>
<th>Source of Revenue</th>
<th>Estimated Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone Mineral Density Scan (75% increase)</td>
<td>$409,600</td>
</tr>
<tr>
<td>NWAU (FLS, Osteoporosis, infusions)</td>
<td>$1.5 million</td>
</tr>
<tr>
<td>Prevention of second fracture in 46% patients with minimal trauma fracture</td>
<td>$2.33 million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4.2 million</strong></td>
</tr>
<tr>
<td><strong>Projected Savings</strong></td>
<td><strong>$3.9 million</strong></td>
</tr>
</tbody>
</table>
“The case for change is based on…”

1. The need to deliver improved clinical care
2. The increasing demand for services
3. The relative minimal cost of the investment required
4. The Leading Better Value Care requirements
• Have to have a clear idea of what you need to cost it
• Hard/time consuming to change things once they are set in place
• Know the levers that matter to administration
• Easy financial business case
• Use Performance units / other sites business cases to guide you
• Prepare for the future, ensure sustainability FTE
Business Case to CE Brief

TITLE: Improving Fracture Liaison Service at Royal Prince Alfred Hospital

PURPOSE: To update the Chief Executive regarding a proposal to improve efficiency of the Fracture Liaison Service at RPAH

RECOMMENDATION: That the CE approves the recruitment and appointment of a 1 FTE Fracture Liaison Co-ordinator and 1 FTE Bone Mineral Density Technologist at RPAH

KEY ISSUES:
- Approximately 50% of people with one osteoporotic fracture will have another, with the risk of new fractures rising exponentially with each fracture.
- An effective Fracture Prevention Program relies on adequate identification of all patients who sustain a minimal trauma/pathological fracture, referral for appropriate investigation (excluding BMD scan) and intervention (education, medications, restriction in falls risk), as well as the ability to track and ensure appropriate treatment and follow up of patients over time.
- Currently the entire RPAH osteoporosis and fracture prevention service relies on 1 x 0.6 FTE nurse to provide all these services which has become unsustainable.
- The BMD machine is being sub optimally used as there is no one to operate it for a substantial part of the week (the nurse is performing other duties).
- Significant increase in number of referrals for osteoporosis (without fracture) due to aging population, use of medications for cancer (steroidase inhibitors, antidiabetes), transplant, HIV and autoimmune diseases in addition to those predisposed with fracture has led to increased pressure on osteoporosis clinic waiting lists. This is now greater than 5 months for non-fracture patients.
- Patients who have had a minimal trauma fracture are too often not being identified, receiving delayed review and interventions, or lost to follow up. Ultimately, this reflects suboptimal clinical care and a loss of revenue for the district.
- The new Batman GP fracture program has led to a further increase in referrals to the service which we are simply not able to see. Currently we are being forced to limit our service referrals to hip fractures (highest risk for refracture) from the last 12 months shows that only 50% of patients >75 were identified and adequately triaged (well below RPI of 50%).
- The ACO has developed a model of care and based on 2002-2008 data recommended that the FLS have 2.5 FTE clinical staff to adequately run the service (attached). Since that time there has been an exponential increase in those identified as requiring review by the FLS due to better awareness of this issue.
- The financial and human morbidity/mortality costs of missing the opportunity to improve bone density in those with a minimal trauma fracture who present with a second fracture far out weigh the minimal investment in a well resourced FLS.

<table>
<thead>
<tr>
<th>Proposed Position</th>
<th>Required Enhancement</th>
<th>Salary Cost for Enhancement</th>
<th>Enhancement Max Salary + 20% on costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMD Technician</td>
<td>1 FTE</td>
<td>$55,112.55-77,059.60</td>
<td>$65,431.52</td>
</tr>
<tr>
<td>Fracture Liaison Co-ordinator (CN4)</td>
<td>1 FTE</td>
<td>$195,524.00</td>
<td>$235,466.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$150,636.00-183,183.60</td>
<td>$226,539.60</td>
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</table>

Impact on Patients
- Reduction in morbidity and mortality for second fractures

Impact on Finances
- Costs: Total maximum S/W plus 20% on costs is $230,539.60.
- Potential savings: Currently 1200 BMDs/year ($102,490; scan, revenue $122,880) performed. With full time operation this could be 5000+ (year revenue $409,600).
- Potential bed day/admission related cost savings at RPAH if just 50% of those >75 yrs old with first hip fracture not referred to FLS (40%) and represent with fracture $2.33 million. If all ages and first fractures calculated this figure would be significantly more.

Media Interest
- BHI will be publishing re-fracture rates (hips) on their website in the near future. It is likely that the KPI of referrals with fracture seen by FLS will also be published as well.

CONSULTATION
A/Prof Jan Vacc, Osteoporosis Staff Specialist, RPAH
Sr Jane Hyde, Osteoporosis CNS, Rheumatology Unit, RPAH
Dr Mark Horsley, Department Head Orthopaedics
Mr Jerry O'Sullivan, Clinical Manager, Bone, Joint, Connective Tissue and Neurosciences Clinical Division.

Author: Bethan Richards
Tel: 9316 9337
Date: 20th December, 2016

Approved by:
1. Ms Deborah Willcox, DOO, SLHD / GM, RPAH
2. Dr Teresa Anderson, Chief Executive, SLHD, 9315 9641
Governance ORP

Local (RPA/Balmain)

- GMs RPAH and Balmain
- Rheumatology Head of Department
- Aged Care, Head of Department (DMS Balmain)
- DMS RPAH
- Orthopedics, Head of Department
- Clinician specialists
  - A/Prof Jan Vaile, Dr Chris Needs
- Fracture Liaison Co-ordinator: (new)
- Osteoporosis CNS (Sr Jayne Hyde)
- Head Physiotherapy, RPAH

District (Local plus: )

- Head Endocrinology, Concord Hospital
- VMO Rheumatology, Canterbury Hospital
- Director of Allied Health, SLHD
- General Manager, CRGH
- General Manager, Canterbury Hospital
- Performance Unit, SLHD
# TERMS OF REFERENCE

**Leading Better Value Care: Osteoporotic Refracture Prevention (ORP) and Osteoarthritis Chronic Care Program (OACCP) Steering Committee**

<table>
<thead>
<tr>
<th>GOVERNANCE</th>
<th>Chief Executive, Sydney LHD</th>
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<tbody>
<tr>
<td><strong>OBJECTIVES</strong></td>
<td>The objective of the Steering Committee is to provide leadership, coordination and guidance with the implementation of the Osteoporotic Refracture Prevention Model of Care and Osteoarthritis Chronic Care Program (OACCP) within the framework of the Leading Better Value Care initiatives across SLHD facilities.</td>
</tr>
</tbody>
</table>
| **PURPOSE**      | • To provide governance and oversight of the implementation of ORP and OACCP across the SLHD and to ensure alignment with the strategic direction of SLHD  
                   • To facilitate communication & information flow to relevant stakeholders across the SLHD  
                   • To oversee the collection and analysis of data regarding the clinical benefits of these programs  
                   • To oversee the preparation of Draft Quarterly Monitoring Reports (to be submitted to the Ministry of Health on behalf of the SLHD) |
| **MEMBERS**      | Prof Markus Seibel, Director, Department of Endocrinology & Metabolism, CRGH (Chair)  
                   Dr Bethan Richards, Head Department of Rheumatology, RPAH  
                   Dr Les Barnsley, Head Department of Rheumatology, CRGH  
                   Dr Ana Ananda, Staff Specialist Rheumatologist, CRGH  
                   Dr Mark Horsley, Orthopaedic Surgeon, RPAH  
                   Dr George Szonyi, Head Department of Geriatric Medicine, RPAH  
                   Dr Mona Marabani, Rheumatology, Canterbury Hospital  
                   Ms Megan White, Orthopaedic CNC, CRGH  
                   Ms Sarah Whitney, Director of Allied Health, SLHD |
Position Descriptions: what skills do we need?

• RPAH/Balmain Fracture Liaison Co-ordinator
  • Strategic service planning and oversight across multiple hospitals
  • Project management
  • Problem solving
  • Leadership and personnel management
  • Change management
  • Interpersonal skills
  • Data evaluation and reporting
  • Ability to travel

• Not just a “clinical” person
Bone Mineral Density Technician

- No “award” for this
- Nuclear medicine technician or
- Technical Officer (Grade 1/2)
  - Relevant Technicians Diploma or Degree in Medical Science with Major in Anatomy and Physiology or equivalent
  - Current ANZBMS certification or equivalent
  - Current regulatory radiation license EPA (or willing to apply for same)

- Send to Grading Committee (meet once per month) for approval
From Needs analysis to New Personnel

1. Undertake Needs analysis of service
   - Sept-Nov 2016

2. Consult key stakeholders and decide on optimum service structure
   - Nov-Dec 2016

3. Create Business Case
   - Feb-Mar 2017

4. Write Brief to CE and get DMS/GM/CE sign off
   - April 2017

5. Create position descriptions for new roles
   - April 2017

6. Position descriptions send to grading committee for approval
   - June 2017

7. Once approved sent to CE for endorsement and sign off
   - July/Aug 2017

8. Advertise the position
   - Aug/Sept 2017

9. Interviews
   - Oct-Nov 2017

10. Referee check / HR Processes
    - Nov 2017 - Jan 2018
Next Steps

• BMD Technician has commenced
• RPAH/Balmain Fracture Liaison Co-ordinator commences in Jan 2018
  ➢ Support gap analysis and business case development at Canterbury
• Secure more clinic space (IRO clinic redesign)
• Increase medical FTE (0.2-0.4)
• Trial eMR search tool
• Strategic Planning Day Feb 2018
  ➢ Job roles of FLC, CNS Osteoporosis, BMD Tech, Registrars, AMOs
  ➢ Review best use of other resources (geriatrics, orthopedic JMOs, falls prevention)
  ➢ Improve efficiency of clinic referrals, bookings, waiting room, consult processes
  ➢ Streamline BMD referral, booking, reporting (EMR), and billing processes (new item numbers)
  ➢ Education strategies / aids for staff, patients, community, GPs, ED
  ➢ Lifestyle interventions
  ➢ Data capture mechanisms (avoid duplicate systems)
• Design STARS app to track progress and outcomes