Segmentation Towards Enabling Pathways (STEP)
An approach to integrate health and support delivery

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Oranga Mahi programme

- Work through wellness program
- Collaboration between MSD and DHBs
- Government’s Budget 2016 committed $9 million over three years
Oranga Mahi programme

• A range of trials to break the pattern of welfare dependency by improving service delivery and investment decisions.

• Support people with health conditions and disabilities into work.

• All initiatives are linked by their common target group and an inter-sectoral approach to returning clients to employment, but each retains a specific modus operandi.
Oranga Mahi

- National Governance Group
  - Professor Des Gorman (Chair) (The University of Auckland)
  - Damian Edwards (Deputy Chair) (MSD)
  - Ruth Bound (MSD)
  - Professor Peter Robinson (ACC)
  - Dorothy Adams (SSC)
  - Carolyn Gullery (Canterbury DHB)
  - Professor Nick Smith (The University of Auckland)
  - Vince Barry (Pegasus Health)
  - Alastair Riach ( Corrections)
  - Dr Dale Bramley (Waitemata DHB)
  - Eru Lyndon (MSD)
  - Eric Judd (MSD)
  - Julie Wilson (Waikato DHB)
  - Simon Royal (National Hauora Coalition)
Project working group

- Prof. Matthew Parsons – Faculty of Medical and Health Sciences
- Prof. Paul Rouse – Business School
- A/Prof. Cameron Walker – Faculty of Engineering
- Dr Michael O’Sullivan – Faculty of Engineering
- Avinesh Pillai – Faculty of Science
Oranga Mahi

‘Oranga Mahi’ initiatives

**AIM**
- 30% reduction in adults accessing medically deferred sickness benefits
- 30% increase in adults returning to work following sickness
- 20% reduction in adults accessing secondary care health services
- Plus reductions in corrections episodes, police time and housing support.

**Population at risk**
Under 55 years of age, on health benefit (HCD)

**Target Group**
- Mental health and other physical complications
  - Mental health and substance abuse
  - Mild to moderate mental health and physical impairment
  - Mild to moderate mental health and physical impairment
  - Severe mental health
  - Prisoners and their families / whanau
  - Mild and moderate stroke

**Location**
- Northland: Raumanga, Otangarei
- Canterbury: Phased approach based on GP Practices
- Waikato: Whole of region
- Waitemata: Whole of region

**Initiative**
- Community Navigator
  - Iwi based community workers providing linkages between healthcare / MSD and employment
- STEP-UP
  - Primary care based community coordinators, focusing on addressing health issues and returning to work
- REACH
  - Community based team, health professional key workers with lifestyle coaches utilising Cognitive Behavioural Therapy to support return to work
- Peer workers
- Community health workers
- ABI / Sovereign rehabilitation
  - Multiple approaches, particular focus on children within families of returning prisoners
  - Strong community based vocational rehabilitation programme with Sovereign providing enhanced case management
Triple aim framework

**INDIVIDUAL**
- Single assessment and removal of duplication of assessment
- Individualised approach to client needs
- Individualised services which reflect client needs
- Flexible and responsive services
- Supportive non-judgmental encouraging health workers providing pragmatic support

**POPULATION**
- Addressing needs of deprived populations
- Facilitating earlier access to health services when needed
- Collaborative whole of government response to ‘at risk’ populations
- Services targeted towards those at risk of poor outcomes
- Increase life expectancy for deprived populations

**SYSTEM**
- Between 20 and 80% back to employment (depending on initiative)
- Between 20 and 40% off benefit within a year of commencing programme

Best value for public health system resources
Specific aims

- A 30% reduction in adults accessing medically deferred benefits
- A 30% increase in adults returning to work following sickness
- A 20% reduction in the rate of adults receiving benefits accessing secondary care health services
Historically

- The highest proportion (almost 50%) of benefit type in New Zealand is related to health (SLP-HCD, 29.7%; JS-HCD, 20%)
- The current mechanism for health deferred benefits sign off is complex
- Health responsibility following the designation is limited
- Examples of integrated initiatives to address the health issue and support the client to return to employment are almost non-existent
## Workflow framework

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ANALYSIS AND DEVELOPMENT OF PROFILES</td>
<td>Merging of datasets and statistical analysis to develop profiles</td>
</tr>
<tr>
<td>2</td>
<td>DESIGN</td>
<td>Three interlinked stages to design new intersectoral approaches to improving wellbeing, increasing employment whilst minimising life-long benefits</td>
</tr>
<tr>
<td>2a</td>
<td>STAKEHOLDER ENGAGEMENT</td>
<td>A phased approach to engage key stakeholders within DHB specified communities of interest. Initial District Health Boards (DHB) to be approached include Northland, Waitemata, Counties Manukau, Waikato, Tairawhiti and Canterbury / West Coast</td>
</tr>
<tr>
<td>2b</td>
<td>PATHWAYS DEVELOPMENT</td>
<td>Profiling to inform targeted discussions with community stakeholders and identify pathways for groups of beneficiaries</td>
</tr>
<tr>
<td>2c</td>
<td>SIMULATION MODELLING</td>
<td>New pathways to be modelled and simulated and anticipated impact of new approaches to be determined and socialised with local and national stakeholders</td>
</tr>
<tr>
<td>3</td>
<td>IMPLEMENTATION</td>
<td>Communities to be supported to implement new initiatives in a systematic manner which will inform a national process</td>
</tr>
<tr>
<td>4</td>
<td>EVALUATION</td>
<td>Project team to develop appropriate evaluation frameworks utilising profile work and simulation</td>
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</table>
IDI data available

Integrated Data Infrastructure

- Housing data
- People and communities data
- Education and training data
- Income and work data
- Justice data
- Health data
- Population data
- Benefits and social services data
## IDI data used

<table>
<thead>
<tr>
<th>Domain</th>
<th>Dataset</th>
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<tbody>
<tr>
<td><strong>Health</strong></td>
<td>ACC data claims and compensation data</td>
</tr>
<tr>
<td></td>
<td>Publicly funded hospital discharges – event and diagnosis/procedure</td>
</tr>
<tr>
<td></td>
<td>National Minimum Data set</td>
</tr>
<tr>
<td><strong>Benefits and social services data</strong></td>
<td>Benefit data</td>
</tr>
<tr>
<td></td>
<td>Housing</td>
</tr>
<tr>
<td><strong>Population data</strong></td>
<td>Statistics New Zealand data</td>
</tr>
<tr>
<td></td>
<td>Census data particularly relating to families</td>
</tr>
<tr>
<td><strong>Justice data</strong></td>
<td>Recorded crime offenders data</td>
</tr>
<tr>
<td></td>
<td>Department of Corrections</td>
</tr>
<tr>
<td><strong>Work and income data</strong></td>
<td>Tax</td>
</tr>
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</table>
Aims

• An estimation of the likely impact on the service of returning HCD recipients to employment (and off benefit) was made by the respective DHBs.

• On the basis of previous evidence and local experience.

• Interested in exploring the impact on costs over time.
Objectives

• Reducing the Public Sector Financial Burden of Stroke

• Focus is on those aged 18–65 years who had a stroke

• Increase in the proportion of young stroke patients able to return to work

• Overall improvement in proportion of stroke patients able to live independently

• Overall improvement in patients’ health-related quality of life
Outcomes

Definition of someone who is in ‘job’ vs. ‘no job’

• **JOB**
  Identified as those individuals in the cohort where the total income from wages in the period between 11 to 13 months (13-week period or quarter) after the stroke event (date) is **GREATER** than or equal to the income of an individual who works 15 hours per week at minimum wage ($12.46 per week = $2,430 for the quarter).

• **NO JOB**
  Identified as those individuals in the cohort where the total income from wages in the period between 11 to 13 months (13-week period or quarter) after the stroke event (date) is **LESS THAN** or equal to the income of an individual who works 15 hours per week at minimum wage ($12.46 per week = $2,430 for the quarter).
Outcome – probability of RTW

- probability of return to work models were developed

- probability of return to work is calculated for a given cohort

- can be thought of as the proportion of the cohort expected to be in employment one year following the date of stroke
Work in the IDI

• “Stitch” an individual’s contextual and outcome data together
  – e.g. age, employment status, days in hospital, outpatient care, MSD benefit, PAYE

• Explore differences in outcomes that relate to different contextual data
  – e.g. people working <15 hours per week have more days in hospital, but cost ACC less
## Waitemata stroke case management

<table>
<thead>
<tr>
<th>PCCL</th>
<th>Long-term disability</th>
<th>Mean cohort age</th>
<th>Cost JOB</th>
<th>Cost No-JOB</th>
<th>p RTW (%)</th>
<th>Cost Total*</th>
<th>Count</th>
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<tbody>
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<td>0</td>
<td>Yes</td>
<td>52.9</td>
<td>-$110,713</td>
<td>$70,385</td>
<td>0.40 (40%)</td>
<td>-$1,761</td>
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<td>1</td>
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<td>Suppressed</td>
<td>-$29,984</td>
<td>$13,855</td>
<td>0.31 (31%)</td>
<td>$274</td>
<td>Suppressed</td>
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<td>2</td>
<td>Yes</td>
<td>54.6</td>
<td>-$96,674</td>
<td>$61,237</td>
<td>0.29 (29%)</td>
<td>$15,323</td>
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<tr>
<td>3</td>
<td>Yes</td>
<td>55.1</td>
<td>-$89,337</td>
<td>$56,456</td>
<td>0.22 (22%)</td>
<td>$24,465</td>
<td>198</td>
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<tr>
<td>4</td>
<td>Yes</td>
<td>54.8</td>
<td>-$96,674</td>
<td>$61,237</td>
<td>0.11 (11%)</td>
<td>$44,031</td>
<td>66</td>
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<tr>
<td>0</td>
<td>No</td>
<td>51.8</td>
<td>-$117,427</td>
<td>$74,761</td>
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<td>52.1</td>
<td>-$110,713</td>
<td>$70,385</td>
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<td>3</td>
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<td>54.3</td>
<td>-$96,674</td>
<td>$61,237</td>
<td>0.62 (62%)</td>
<td>-$37,019</td>
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<tr>
<td>4</td>
<td>No</td>
<td>55.7</td>
<td>-$89,337</td>
<td>$56,456</td>
<td>0.42 (42%)</td>
<td>-$4,400</td>
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## Waikato REACH

<table>
<thead>
<tr>
<th>Long-term disability</th>
<th>Years on Benefit</th>
<th>Mean cohort age</th>
<th>Cost Job</th>
<th>Cost No-Job</th>
<th>pRTW</th>
<th>Cost Total</th>
<th>Count</th>
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<tbody>
<tr>
<td>Yes</td>
<td>Up to 1 year</td>
<td>43.6</td>
<td>$1,378</td>
<td>$200,350</td>
<td>0.18</td>
<td>$164,245</td>
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<td>No</td>
<td>Up to 1 year</td>
<td>34.3</td>
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<td>$251,442</td>
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<td>Yes</td>
<td>1 to 2.5 years</td>
<td>43.4</td>
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<td>$200,350</td>
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<td>$178,901</td>
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<td>1 to 2.5 years</td>
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<td>2.5 to 4 years</td>
<td>45.5</td>
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<td>No</td>
<td>2.5 to 4 years</td>
<td>43.3</td>
<td>$1,378</td>
<td>$200,350</td>
<td>0.15</td>
<td>$170,017</td>
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<td>Greater than 4 years</td>
<td>48.3</td>
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<td>Greater than 4 years</td>
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<td>$1,004</td>
<td>$172,898</td>
<td>0.11</td>
<td>$153,687</td>
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<td>Pacific Island</td>
<td>Disabled</td>
<td>Years on Benefit</td>
<td>Mean cohort age</td>
<td>Cost Job</td>
<td>Cost No-Job</td>
<td>P RTW (%)</td>
<td>Cost Total</td>
</tr>
<tr>
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<tr>
<td>0</td>
<td>Yes</td>
<td>Up to 1 year</td>
<td>30.8</td>
<td>-$2,263</td>
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<td>Up to 1 year</td>
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<td>Up to 1 year</td>
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<td>-$2,135</td>
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<tr>
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<td>1 to 2.5 years</td>
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<td>$198,071</td>
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<td>1 to 2.5 years</td>
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<td>$159,104</td>
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<tr>
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<td>1 to 2.5 years</td>
<td>35.9</td>
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<td>$233,201</td>
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<td>2.5 to 4 years</td>
<td>36.9</td>
<td>-$2,107</td>
<td>$233,201</td>
<td>0.14</td>
<td>$201,218</td>
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<td>2.5 to 4 years</td>
<td>39.1</td>
<td>-$2,018</td>
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<td>-$2,107</td>
<td>$233,201</td>
<td>0.31</td>
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<td>No</td>
<td>2.5 to 4 years</td>
<td>36.6</td>
<td>-$2,048</td>
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<td>$193,544</td>
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<td>Greater than 4 years</td>
<td>41.5</td>
<td>-$1,954</td>
<td>$205,857</td>
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<td>$191,255</td>
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<td>Yes</td>
<td>Greater than 4 years</td>
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<td>$195,030</td>
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<td>Greater than 4 years</td>
<td>39.7</td>
<td>-$2,018</td>
<td>$217,281</td>
<td>0.18</td>
<td>$177,754</td>
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<tr>
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<td>No</td>
<td>Greater than 4 years</td>
<td>Suppressed</td>
<td>-$1,886</td>
<td>$193,736</td>
<td>0.07</td>
<td>$180,643</td>
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</tbody>
</table>
Results

• Separate reports for each DHB; Waitemata, Waikato, and Canterbury

• Informed on the probability of RTW, given clinical and statistical variables, for different segmentation/profiles of people

• Inform on the costs associated with RTW and no RTW, for each segmentation/profile
Lessons learned

• What has been hard?
  – Data (quality and quantity has been variable)
  – Implementation (moving from successful research prototype to pilot implementation)
  – Solutions (these are hard problems to solve!)
Definitions

- The ‘Cost Job’ and ‘Cost No-Job’ columns in the Tables refer to the total costs and are the mean total government cost per year for an individual across government.

- It is calculated from the sum of In-patient, Out-patient, Police, Corrections, MSD Benefit less Benefit-PAYE, PAYE on Wage and GST.

- Dollar (NZ$) amounts have been indexed to 2015 using the NZ Consumer Price Index (CPI).

- Costs for each cohort have been calculated from the mean age of that cohort to aged 65, using the Treasury discount rate of three percent.
Next steps

• A ‘feedback’ loop is essential!
  – Results from IDI work fed through to stakeholders and DHB

• Do the results help?
  – Beneficial to the people delivering the intervention(s)

• Updated data in the IDI.
  – Results from analyses informing interventions might be different a year on

• Was the initiative successful?