Segmentation Towards Enabling Pathways (STEP)

An approach to integrate health and support delivery

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THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

SCIENCE
DEPARTMENT OF STATISTICS

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 operando.

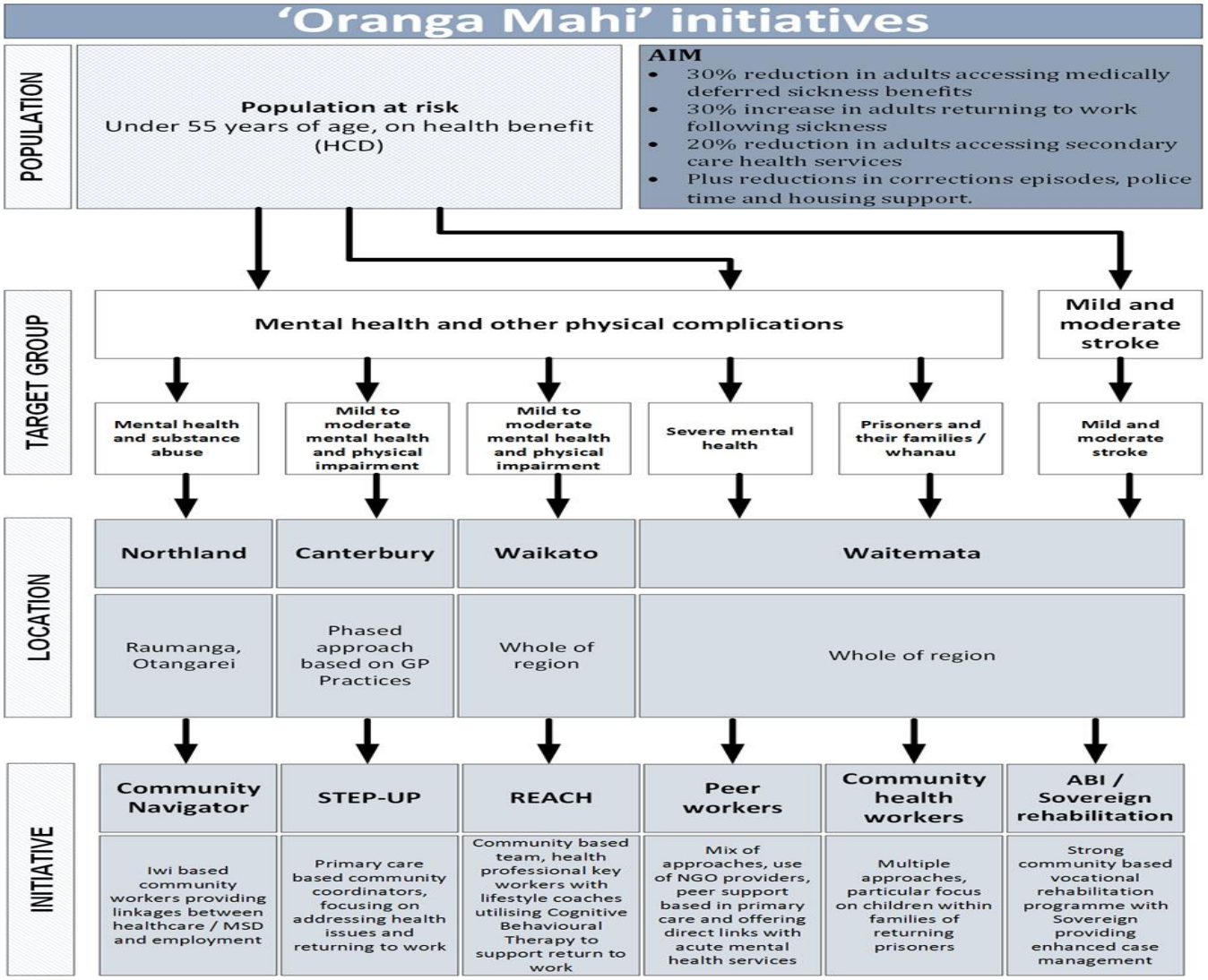
Oranga Mahi

- 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)

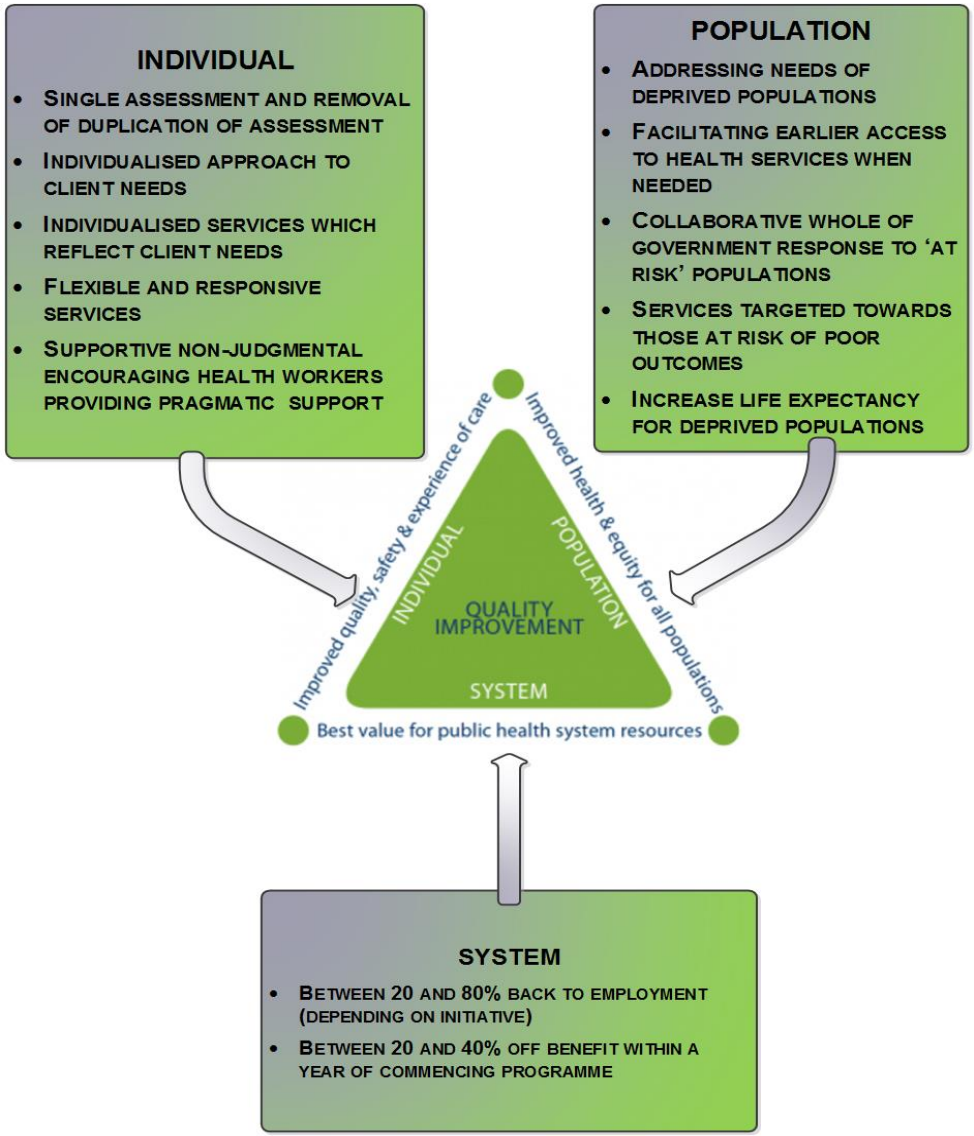
Project working group

- 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
POPULATION
Population at risk
Under 55 years of age, on health benefit (HCD)
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.
TARGET GROUP
Mental health and other physical complications
Mild and moderate stroke
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
Canterbury
Waikato
Waitemata
Raumanga, Otangarei
Phased approach based on GP Practices
Whole of region
Whole of region
INITIATIVE
Community Navigator
STEP-UP
REACH
Peer workers
Community health workers
ABI / Sovereign rehabilitation
Iwi based community workers providing linkages between healthcare / MSD and employment
Primary care based community coordinators, focusing on addressing health issues and returning to work
Community based team, health professional key workers with lifestyle coaches utilising Cognitive Behavioural Therapy to support return to work
Mix of approaches, use of NGO providers, peer support based in primary care and offering direct links with acute mental health services
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



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

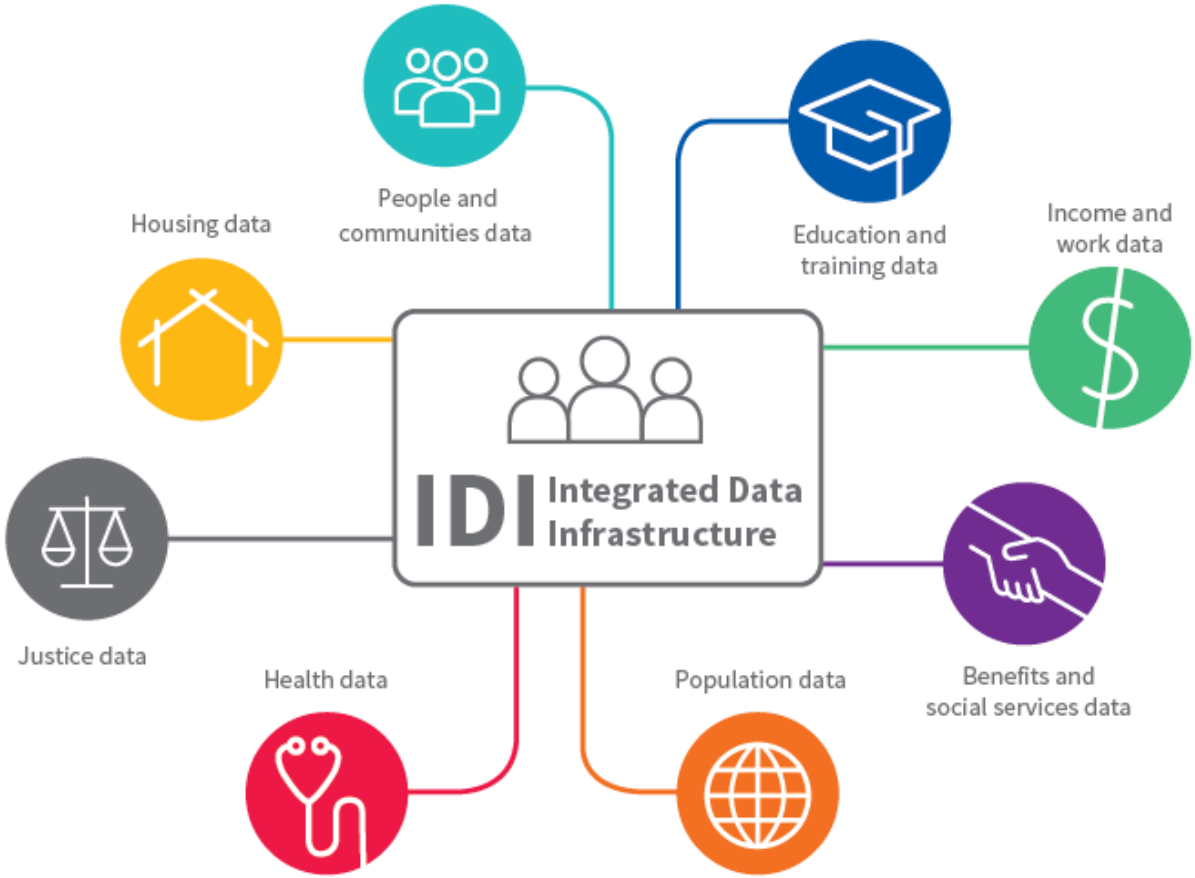
Historically

- 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

Stage	Description	Explanation
1	ANALYSIS AND DEVELOPMENT OF PROFILES	Merging of datasets and statistical analysis to develop profiles
2	DESIGN	Three interlinked stages to design new intersectoral approaches to improving wellbeing, increasing employment whilst minimising life-long benefits
2a	STAKEHOLDER ENGAGEMENT	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
2b	PATHWAYS DEVELOPMENT	Profiling to inform targeted discussions with community stakeholders and identify pathways for groups of beneficiaries
2c	SIMULATION MODELLING	New pathways to be modelled and simulated and anticipated impact of new approaches to be determined and socialised with local and national stakeholders
3	IMPLEMENTATION	Communities to be supported to implement new initiatives in a systematic manner which will inform a national process
4	EVALUATION	Project team to develop appropriate evaluation frameworks utilising profile work and simulation

IDI data available



IDI data used

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

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

PCCL	Long-term disability	Mean cohort age	Cost JOB	Cost No-JOB	p RTW (%)	Cost Total*	Count
0	Yes	52.9	-$110,713	$70,385	0.40 (40%)	-$1,761	207
1	Yes	Suppressed	-$29,984	$13,855	0.31 (31%)	$274	Suppressed
2	Yes	54.6	-$96,674	$61,237	0.29 (29%)	$15,323	138
3	Yes	55.1	-$89,337	$56,456	0.22 (22%)	$24,465	198
4	Yes	54.8	-$96,674	$61,237	0.11 (11%)	$44,031	66
0	No	51.8	-$117,427	$74,761	0.80 (80%)	-$78,043	399
1	No	45.5	-$153,799	$98,463	0.72 (72%)	-$84,301	6
2	No	52.1	-$110,713	$70,385	0.71 (71%)	-$57,479	264
3	No	54.3	-$96,674	$61,237	0.62 (62%)	-$37,019	243
4	No	55.7	-$89,337	$56,456	0.42 (42%)	-$4,400	63

Waikato REACH

Long-term disability	Years on Benefit	Mean cohort age	Cost Job	Cost No-Job	pRTW	Cost Total	Count
Yes	Up to 1 year	43.6	$1,378	$200,350	0.18	$164,245	236
No	Up to 1 year	34.3	$2,074	$251,442	0.37	$159,389	216
Yes	1 to 2.5 years	43.4	$1,378	$200,350	0.11	$178,901	249
No	1 to 2.5 years	38.4	$1,787	$230,402	0.24	$175,121	153
Yes	2.5 to 4 years	45.5	$1,197	$187,030	0.06	$175,174	267
No	2.5 to 4 years	43.3	$1,378	$200,350	0.15	$170,017	138
Yes	Greater than 4 years	48.3	$904	$165,512	0.05	$158,023	255
No	Greater than 4 years	47.1	$1,004	$172,898	0.11	$153,687	120

Canterbury STEP-UP

Pacific Island	Disabled	Years on Benefit	Mean cohort age	Cost Job	Cost No-Job	P RTW (%)	Cost Total	Count
0	Yes	Up to 1 year	30.8	-$2,263	$261,101	0.24	$199,178	321
1	Yes	Up to 1 year	32.5	-$2,214	$252,345	0.09	$229,143	12
0	No	Up to 1 year	29.2	-$2,309	$269,355	0.47	$141,101	333
1	No	Up to 1 year	33.7	-$2,135	$238,201	0.23	$183,917	15
0	Yes	1 to 2.5 years	33.9	-$2,188	$247,769	0.17	$204,712	423
1	Yes	1 to 2.5 years	40	-$1,986	$211,653	0.06	$198,071	15
0	No	1 to 2.5 years	31.6	-$2,239	$256,788	0.38	$159,104	330
1	No	1 to 2.5 years	35.9	-$2,107	$233,201	0.16	$194,388	21
0	Yes	2.5 to 4 years	36.9	-$2,107	$233,201	0.14	$201,218	396
1	Yes	2.5 to 4 years	39.1	-$2,018	$217,281	0.05	$206,577	15
0	No	2.5 to 4 years	35.7	-$2,107	$233,201	0.31	$159,325	234
1	No	2.5 to 4 years	36.6	-$2,048	$222,745	0.13	$193,544	15
0	Yes	Greater than 4 years	41.5	-$1,954	$205,857	0.07	$191,255	342
1	Yes	Greater than 4 years	Suppressed	-$1,920	$199,886	0.02	$195,030	Suppressed
0	No	Greater than 4 years	39.7	-$2,018	$217,281	0.18	$177,754	207
1	No	Greater than 4 years	Suppressed	-$1,886	$193,736	0.07	$180,643	Suppressed

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?