CDMS:
A Broadband Health Service for Transforming Chronic Disease Management

Michael Georgeff
Heather Maddern
Jon Hilton

precedence healthcare

Chronic Disease: Threat to Sustainability

- Numbers
  - 7 million Australians with major chronic disease, growing 9% pa
  - Diabetes: 780,000 diagnosed, 500,000 undiagnosed , 1.5 million pre
- Health System costs
  - Diabetes $3.5 billion
  - Cardiovascular $5.5 billion
  - Respiratory $3.7 billion
  - Mental disorders $3.7 billion
- Consumer costs of same magnitude
  - Diabetes ➔ heart attack, stroke, amputation, blindness, kidney failure
  - Diabetes ➔ 4 million people die worldwide, up by 80% next decade
- Human capital loss
  - Diabetes ➔ 12% lower workforce participation, 30% lower productivity
  - Impact on Australian GDP over $5.5 billion

Reasons for Action

- Over 50% of doctors do not follow best practice guidelines
- Less than 25% of chronic disease patients on care plans, less than 2% tracked for adherence
- 15-30% of people don’t take prescribed medications
- 50% unnecessary acute episodes/hospitalisation from lack of knowledge of patient condition
- 50% variation in practice outcomes across regions
- Care team operates in silos, information not shared across care team
- No support for patient in adhering to care plan, ensuring appointments made, visits attended, medications renewed

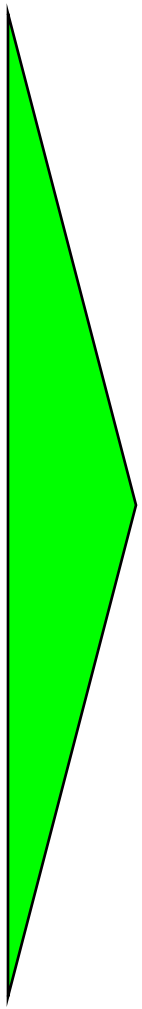
CDMS Objectives

IDMS (Intelligent Disease Management Network)

- Eastern Goldfields (WA)
- Initial prototype service
- Diabetes, 300 users
- $2.3 million (DoHA, WA Dept Health, industry, WA University, and key healthcare stakeholders)

CDM-Net (Chronic Disease Management Network)

- Barwon South Western (Vic)
- Fully operational service
- Diabetes plus co-morbidities, 3000 users
- $8.7 million (DBCDE, Vic Gov, industry, universities, and key healthcare stakeholders)



- Increase uptake and adherence to best practice care plans
- Improve health outcomes
- Improve equity of access
- Reduce hospital admissions
- Improve sharing of health information
- Increase revenues into GP practices (via increased EPC payments)
- Establish scalable and sustainable business model
- Extensible across regions, states and nationally
- Drive revenue streams into e-Health infrastructure
- Support and leverage other e-Health initiatives

CDMS: What it does

A broadband-based health service to assist health care providers and consumers to continuously monitor and manage chronic disease

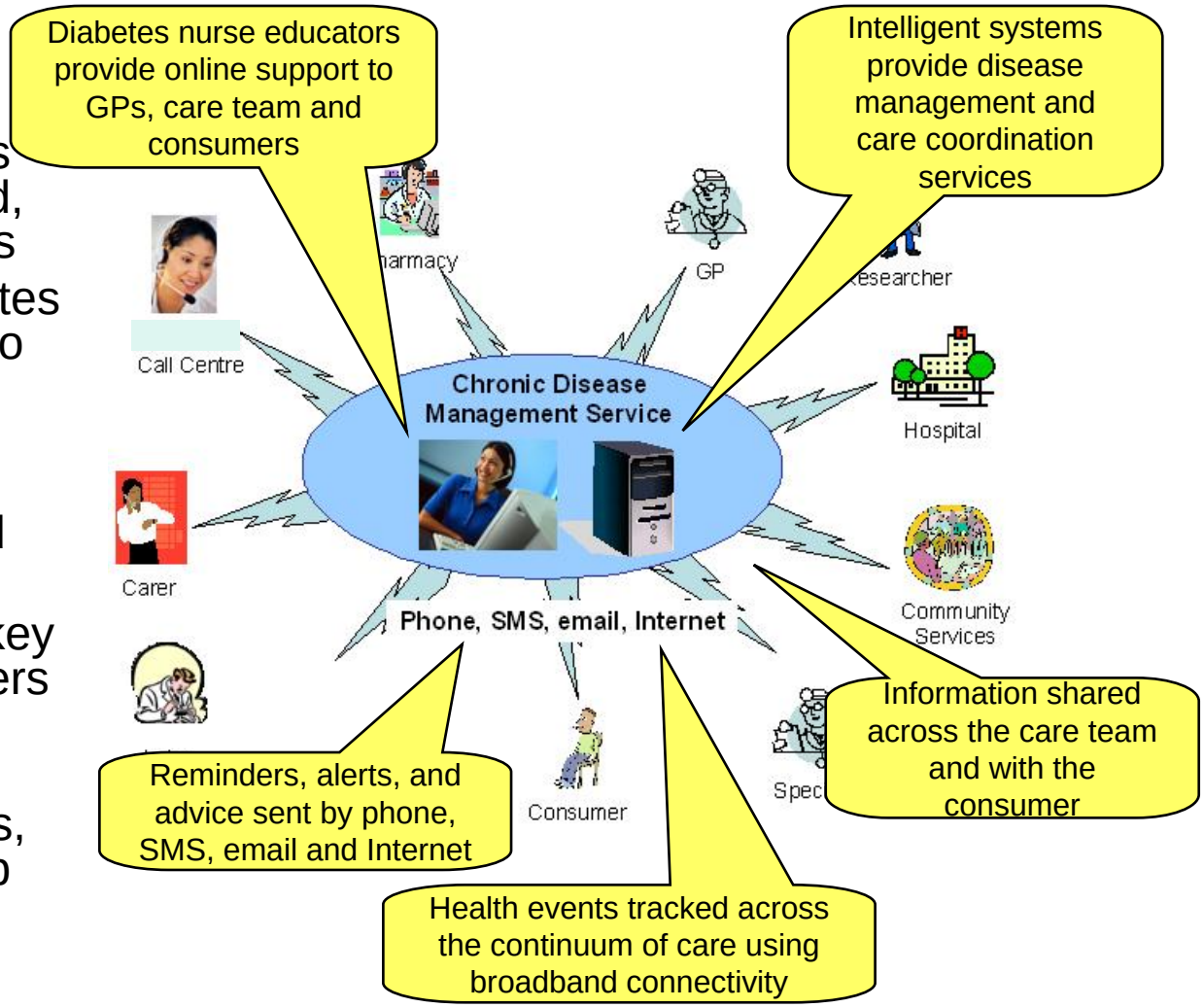
Plan Creation: Creates electronic, personalised, best-practice care plans

Coordination: Distributes care plans and record to care team and patient

Tracking: Tracks compliance with care plans by care team and patient

Monitoring: Monitors key patient health parameters (e.g., blood glucose)

Adherence Support: Sends alerts, reminders, and notifications to help stay on plan



GP Management Plan

Generated by Precedence Health Care

Please visit the CDMS Website for the latest version of this document.

Approved on 15/8/2008

Patient Details	Date of Birth
Mr Peter Hardy	8/10/1930

Contact Information	Medicare/Private Health Insurance Details
18 Heyington Place, Toorak, Victoria, 3142 (08) 9827 1234	3163217724/5

GP	Address	Phone
Dr Michael Georgeff	Level 17, 607 Bourke Street, Melbourne, Victoria, 3000	0408 053 168

Care Team Member	Role	Address	Phone
Mr Jasper Carrot	Optometrist	5 Sloss Pl, Hannans, Western Australia, 6430	08 97645678
Mr Jon Hilton	Podiatrist	12 Mallop Street, Geelong, Victoria, 3220	0417 019 557
Ms Elvira Madigan	Psychologist	10 Cotter Pl, Kalgoorlie, Western Australia, 6430	08 98765432
Ms Heather Mason	Diabetes Educator	91 Mallop Street, Geelong, Victoria, 3220	0409 001 294
Mr Alex Perrington	Pharmacist	22 Jolly Road, Geelong, Victoria, 3220	0407 123 966

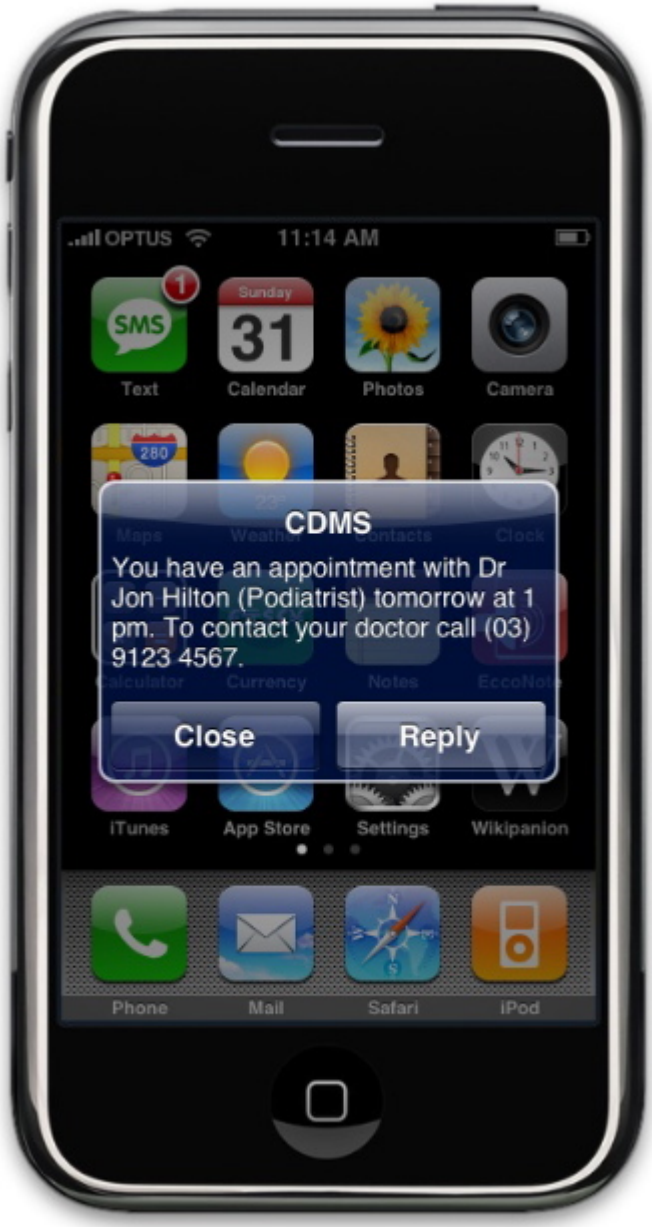
Current Medications

Medication	Strength	Dose
BRICANYL TURBUHALER Turbuhaler	500mcg/dose	1 q.4.h.
CIPROXIN 500 Tablet	500mg	1 b.d.
COLGOUT Tablet	500mcg	2
DIAFORMIN Tablet	500mg	1 b.d.
LANOXIN Tablet	250mcg	1 mane
LOMOTIL Tablet	2.5mg/25mcg	1 mane p.r.n.
MAREVAN Tablet	1mg	
MAREVAN Tablet	5mg	
MICARDIS PLUS 80/12.5mg Tablet	80mg/12.5mg	1 mane
MINIPRESS Tablet	1mg	1/2 b.d.
MYLANTA P (Formerly MYLANTA ORIGINAL) Liquid	200mg-200mg-20mg/5mL	20 mL q.i.d. p.r.n.
NEXIUM Tablet	20mg	1 daily
PARACETAMOL Tablet	500mg	2 q.i.d.
SERETIDE MDI Inhaler	250mcg-25mcg/dose	2 Puffs b.d.
SPIRIVA Capsule	18mcg	1 daily
VISTIL FORTE Eye Drops	3%	1 drop p.r.n.

Lifestyle

Goal Statement	Expected Outcomes	Steps Required
Maintain healthy diet	- Patient maintaining healthy diet	- Nutrition education, From 15/8/2008 and then every 2 years (Ms Heather Mason) - Nutrition review, From 15/8/2008 and then once a year (Dr Michael Georgeff) - Nutrition self management, From 15/8/2008 and then ongoing (Patient)
Maintain physical well-being	- 30 Minutes per day of selected excercise 5 days per week	- Physical activity education, From 15/8/2008 and then every 2 years (Ms Heather Mason) - Physical well-being management review, From 15/8/2008 and then once a year (Dr Michael Georgeff) - Physical well-being self management, From 15/8/2008 and then ongoing (Patient)
Body weight	- Body weight < 71 kg	- Body weight assessment and counselling, From 15/8/2008 and then every 2 years (Ms Heather Mason) - Body weight self management, From 15/8/2008 and then ongoing (Patient) - Review body weight, From 15/8/2008 and then once a year (Dr Michael Georgeff)
Cease smoking	- Complete cessation	- Cease smoking, From 15/8/2008 and then ongoing (Patient) - Counselling, From 15/8/2008 and then once a year (Ms Heather Mason) - Smoking review, From 15/8/2008 and then once a year (Dr Michael Georgeff)
Manage alcohol consumption	- <= 2 Standard Drinks per day	- Alcohol consumption education and counselling, From 15/8/2008 and then every 2 years (Ms Heather Mason) - Alcohol consumption self management, From 15/8/2008 and then ongoing (Patient) - Alcohol review, From 15/8/2008 and then every 6 months (Dr Michael Georgeff)

Tracking and Alerting



GP Benefits

Task	Without CDMS	With CDMS
Plan Creation	• Slow (15-30 mins) • Costly (resources) • Text based	• Faster (2-5 mins) • Cheaper (no resources) • Better (electronic, evidence-based)
Tracking	• Too hard, rarely done	• Automated, alerted
Monitoring	• Patient only, no alerts	• Continuous, alerted, shared
Coordination	• Difficult, slow, costly	• Shared, monitored, alerted
Adherence Support	• Rarely done	• Continuous, personalised, reminders, alerts

Increased Revenues: $50,000 increase per GP pa

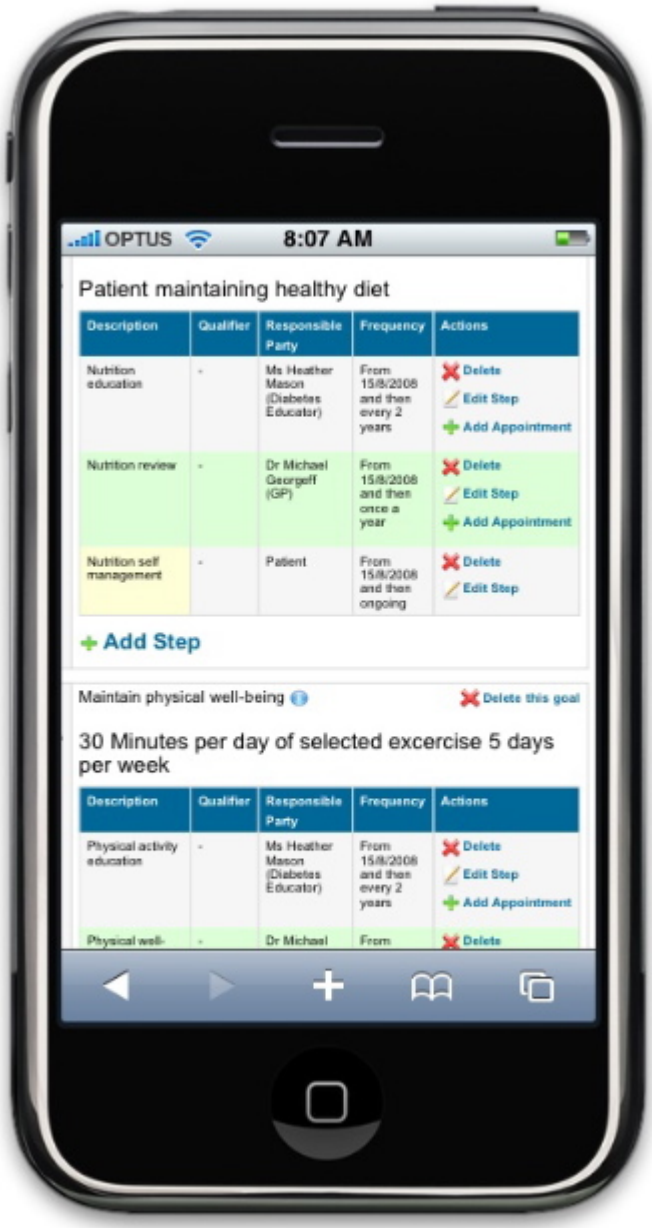
Reduced risk: Eliminates “duty of care” gap

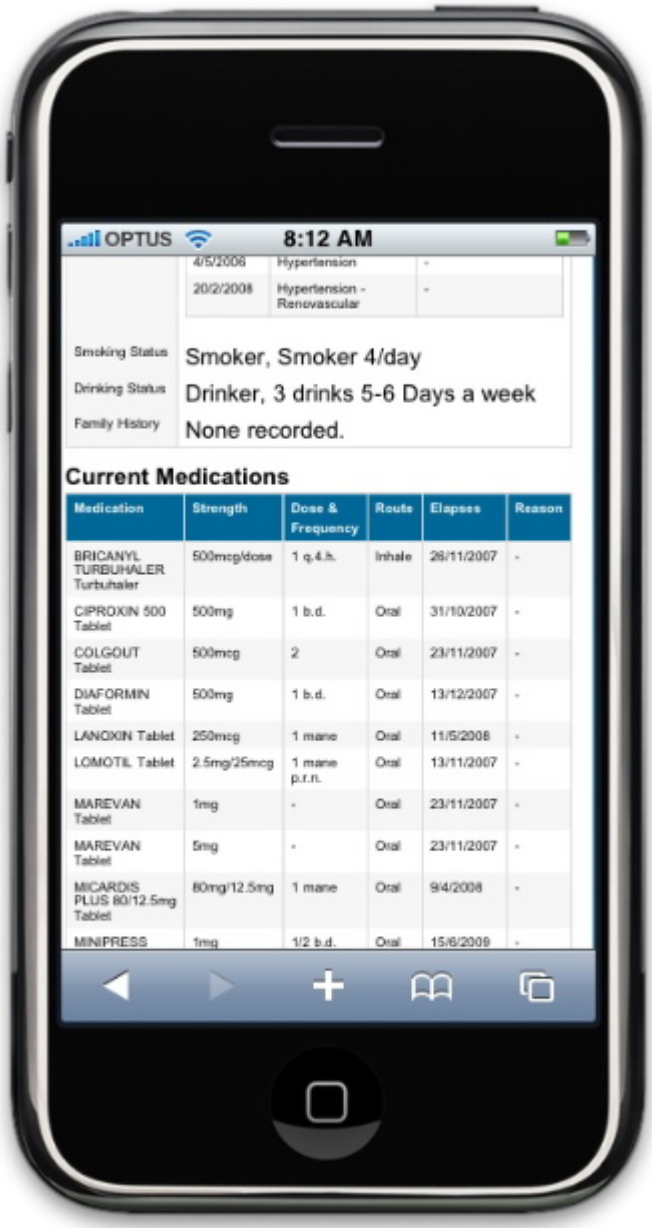
Improved patient outcomes: less adverse events, improved quality of life, lower patient/carer costs

National Benefits: COAG Agenda

Outcomes	Increase the effectiveness of the health system in achieving health outcomes	Reduce the proportion of the working-age population who are under-participating in paid employment due to illness, injury or disability
Intermediate Outcomes	GPs who comply with clinical guidelines in treating patients with diabetes	Improvement in absenteeism associated with obesity and diabetes
	Increased proportion of eligible newly diagnosed who effectively self-mana	
	Reduced rate of avoidable hospital admissions for people with diabetes	
Intermediate Measures	Completed Annual Cycle of Care (MBS) and utilisation of related MBS items for diabetes by GP	Improvement in self-reporting of participation and productivity levels
	Development and completion of a care plan which includes a referral to a self-management intervention	
	Decrease in avoidable hospital admissions associated with diabetes	

Increasing Mobility

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Hypertension
20/2/2008
Hypertension - Renovascular
Smoking Status
Smoker, Smoker 4/day
Drinking Status
Drinker, 3 drinks 5-6 Days a week
Family History
None recorded.
Current Medications
Medication
Strength
Dose & Frequency
Route
Elapses
Reason
BRICANYL TURBUHALER Turbuhaler
500mcg/dose
1 q.4.h.
Inhale
26/11/2007
CIPROXIN 500 Tablet
500mg
1 b.d.
Oral
31/10/2007
COLGOUT Tablet
500mcg
2
Oral
23/11/2007
DIAFORMIN Tablet
500mg
1 b.d.
Oral
13/12/2007
LANOXIN Tablet
250mcg
1 mane
Oral
11/5/2008
LOMOTIL Tablet
2.5mg/25mcg
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Oral
13/11/2007
MAREVAN Tablet
1mg
-
Oral
23/11/2007
MAREVAN Tablet
5mg
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23/11/2007
MICARDIS PLUS 80/12.5mg Tablet
80mg/12.5mg
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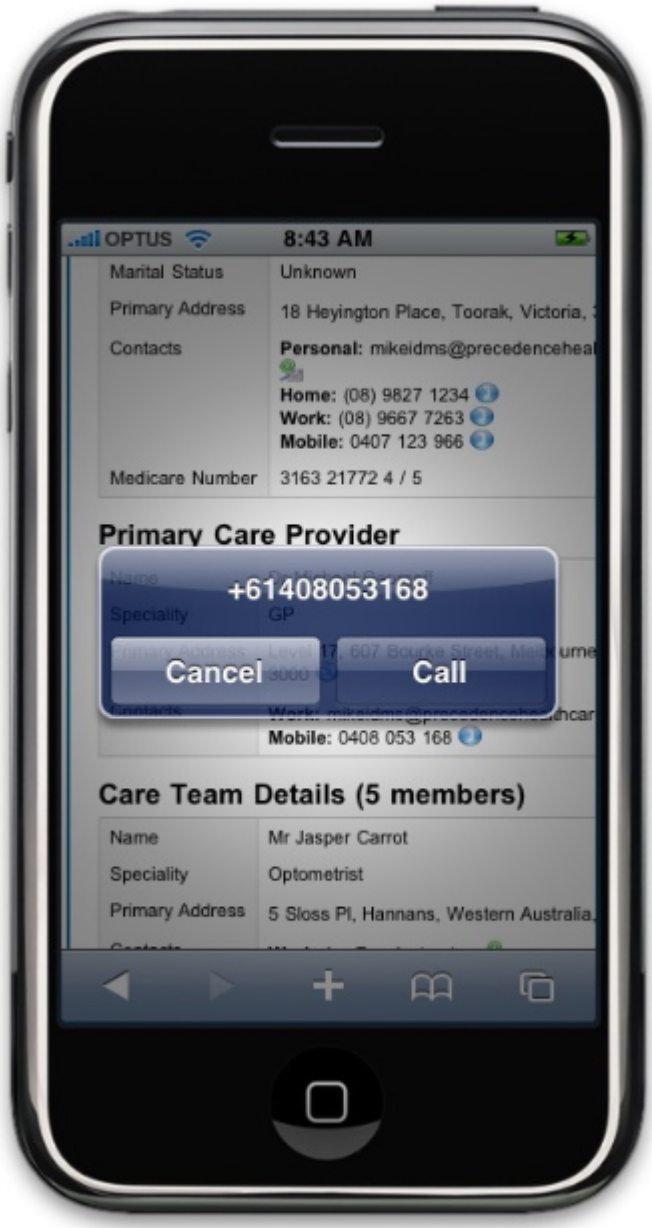
Oral
9/4/2008
MINIPRESS
1mg
1/2 b.d.
Oral
15/6/2009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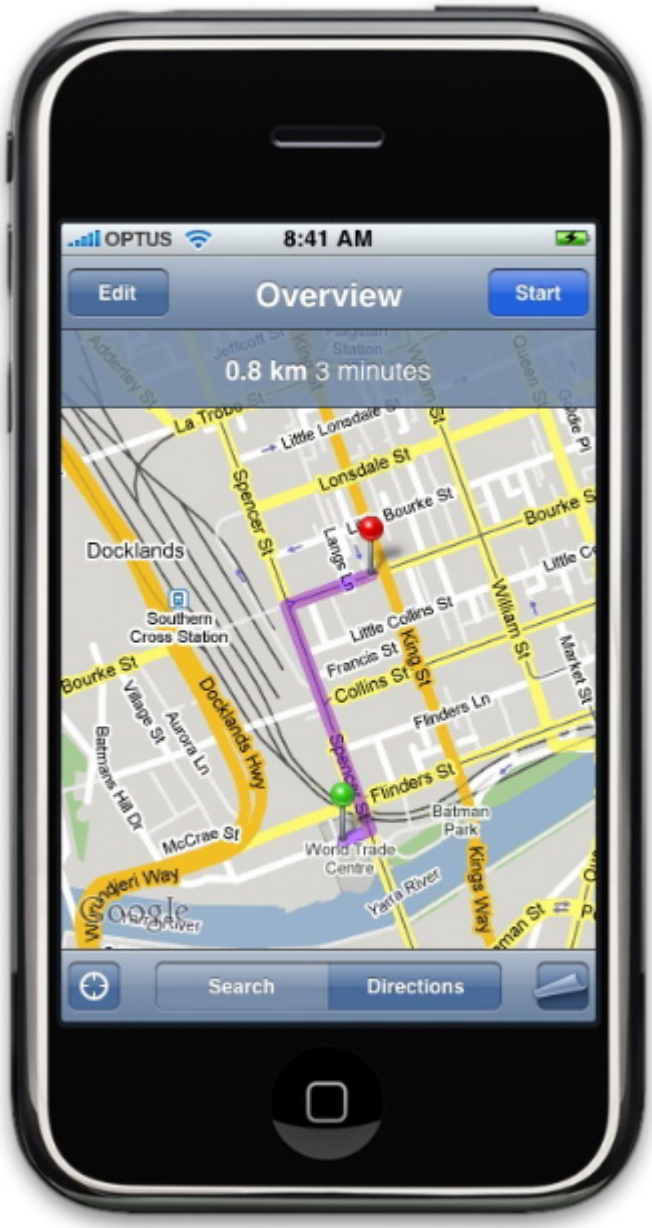
Marital Status
Unknown
Primary Address
18 Heyington Place, Toorak, Victoria,
Contacts
Personal: mikeidms@precedenceheal
Home: (08) 9827 1234
Work: (08) 9667 7263
Mobile: 0407 123 966
Medicare Number
3163 21772 4 / 5
Primary Care Provider
+61408053168
Speciality
GP
Cancel
Call
Mobile: 0408 053 168
Care Team Details (5 members)
Name
Mr Jasper Carrot
Speciality
Optometrist
Primary Address
5 Sloss Pl, Hannans, Western Australia,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Overview
Start
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Docklands
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Lonsdale St
Bourke St
Spencer St
Little Collins St
Francis St
Collins St
Flinders Ln
Flinders St
Batman Park
World Trade Centre
Yarra River
Kings Way
William St
Kings St
Docklands Hwy
Village St
Aurora Ln
Batmans Hill Dr
McCrae St
Search
Directions

Partners


IBM


intel


CISCO


GLOBAL HEALTH
a working systems company


project.net

Partners


DIABETES
AUSTRALIA
VICTORIA


Barwon
Health


diabeteswa
Freedom from Diabetes


LIONS EYE INSTITUTE


GP ASSOCIATION of GEELONG


Goldfields
Esperance
GP
Network

Partners

Australian Government

Clever Networks

Partners


MONASH
University


VICTORIA
UNIVERSITY


DEAKIN
UNIVERSITY


THE UNIVERSITY OF
WESTERN AUSTRALIA


Centre of Excellence in e-Medicine
Affordable and non-invasive medical imaging technologies for the whole humanity


EHEALTH
RESEARCH CENTRE

Contact and Acknowledgements

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