A whole-person perspective on recovery for people with psychotic illness.

Data from the 2010 Australian national psychosis survey

Prof Vera Morgan
The University of Western Australia
Outline

- Survey aims, design and methods (very brief)
- Overview of profile of people with a psychotic illness
  - prevalence
  - mental health and functioning
  - cognition
  - personal, social and living circumstances
  - physical health
- Costs
- Challenges

What *are* the challenges for people with a psychotic illness?
Aims, design and methods
Aims: 2010 Australian national survey of psychosis

1. Estimate treated prevalence of psychotic illness in public specialised mental health services and non-government organisations funded to support people with mental illness.

2. Describe the profile of people with a psychotic illness.

3. Determine their use of health and other services.

4. Assess the impact of their psychotic illness.

*Public specialised mental health services include public inpatient, outpatient and ambulatory/community mental health services.
SHIP survey sites

- 7 sites across 5 States
- Catchment site population aged 18-64 years: 1.5 million (~10% of Australian population aged 18-64 years)
SHIP Technical Advisory Group and survey sites

Convenor TAG / National Project Director................. Prof Vera Morgan
National Project Coordinator................................. Assist Prof Anna Waterreus
Chief Scientific Advisor................................. Prof Assen Jablensky
Chief Statistical Advisor.......................... Prof Andrew Mackinnon

NSW: Hunter New England ................................................... Dr Martin Cohen
NSW: Orange ................................................................. Dr Helen Stain
QLD: West Moreton .............................................................. Profs John McGrath/Robert Bush
SA: Northern Mental Health ........................................... Prof Cherrie Galletly
VIC: North West Area Mental Health Service ................. Profs Carol Harvey/Pat McGorry
VIC: St Vincent’s ............................................................... Prof David Castle
WA: Fremantle, Peel and Rockingham / Kwinana .......... Profs Vera Morgan/Assen Jablensky

Health Economics Advisor.............................. Dr Amanda Neil
Community/consumer/carer representative ........ Ms Barbara Hocking (SANE Australia)
Australian Schizophrenia Research Bank ............. Prof Vaughan Carr
Australian Government Dept of Health & Ageing .. Ms Suzy Saw

*Chair: Brief Cognitive Assessment Tool working group: Prof Johanna Badcock

Funding: Australian Government Dept. of Health and Ageing
Phase 1: Census enumeration
- Screening for psychosis
- 7,955 screen positive and eligible

Public specialised mental health services
- Census month March 2010

Non-government organisations funded to support people with mental illness
- Census month March 2010

Public specialised mental health services
- 11 months prior to census

Phase 2: Data collection
- 1,825 screen positive + 164 screen negative

Randomisation and sampling for interview at 7 sites stratified by age group (18-34 and 35-64 years)

Diagnostic interview

- 31 additional interview modules
  - Physical examination and fasting blood test
  - Questionnaires filled in by general practitioners

Screening weights applied to interviews to get 1 month prevalence estimates

Sampling weights applied to interviews to get 1 month prevalence estimates

Detailed descriptive data on interview sample
## Interview schedule and assessments

> 1500 items

### Psychopathology
- Onset, course, duration, symptoms
  - [Diagnostic Interview for Psychosis – Diagnostic Module]
  - Negative symptoms, worry, panic, anxiety and obsession

### Suicidality

### Substance use
- alcohol
- drugs
- tobacco

### General cognitive ability
- Premorbid
- Current

### Physical health
- Physical health / medical history
- Metabolic measures
- Nutrition
- Physical activity

**Physical measures**
- height
- weight
- body mass index
- waist circumference
- blood pressure

**Fasting blood test**
- high density lipoproteins
- triglycerides
- plasma glucose

### Service utilisation and need
- Inpatient
- Emergency
- Outpatient/community mental health
- Rehabilitation programs
- Non-government organisations
- General practice
- Other sources of support
- Mental health care and unmet need

### Medication use and side effects

### GP questionnaires
- target patient
- general practice

### Sociodemographics, roles
- Demographics
- Education
- Employment
- Finances
- Housing, homelessness
- Parenting
- Care of others
- Stigma
- Victimisation and offending

### Functioning, disability and quality of life
- Activities of daily living
- Socialising
- Satisfaction with life
- Quality of life
- Global ratings: occupational and social functioning
## Interview schedule and assessments

**> 1500 items**

<table>
<thead>
<tr>
<th>Psychopathology</th>
<th>Physical health</th>
<th>Service utilisation and need</th>
<th>Sociodemographics, roles</th>
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<td>Inpatient</td>
<td>Demographics</td>
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### Psychopathology
- Onset, course, duration, symptoms
- Negative symptoms
- Worry, pain and obsession

### Physical health
- Physical health / medical history

### Service utilisation and need
- Inpatient

### Sociodemographics, roles
- Demographics

### Contemporaneous assessment of:
- Mental health
- Physical health, including blood tests
- General cognitive ability

### Comparable data items included to allow benchmarking against:
- First national psychosis survey, 1997
- Australian general population surveys

### General cognitive ability
- Premorbid
- Current

### Medication use and side effects
- Target patient
- General practice

### GP questionnaires
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### Physical health
- Physical health / medical history

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- Target patient
- General practice
North Metro SHIP

North Metro SHIP 2012
- funded by NMHS MH and WA Mental Health Commission
- Replicates SHIP in Perth North Metro

North Metro:
- Patrick Marwick
- Leanne Sultan / Nathan Gibson
- Danny Rock

UWA:
- Vera Morgan (Chair / Project Director)
- Anna Waterreus (Project Coordinator)
- Assen Jablensky
- Nikos Stefanis

Interviewed: 250 people
Prevalence*

* Prevalence calculations:
  Prof Andrew Mackinnon, Chief Statistical Advisor SHIP
### Characteristics of the interviewed sample (%)

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Males</td>
<td>59.6</td>
</tr>
<tr>
<td>Older age group 35-64 years</td>
<td>57.6</td>
</tr>
<tr>
<td>Born in Australia</td>
<td>82.2</td>
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**Interviewed participants (N)** 1,825
## Estimated 1 month prevalence of psychosis Combining 1997-98 and 2010 psychosis surveys

**Rate per 1,000 population aged 18-64 years**

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*Public specialised mental health services: public inpatient, outpatient, ambulatory and community mental health services
†Does not count those not homeless and not receiving treatment services or people in prison during the census month

Morgan VA et al. Psychosis prevalence and physical, metabolic and cognitive comorbidity. *Psychological Medicine*, 2014, 44, 2163-76
### Estimated 1 month prevalence of psychosis

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<tr>
<td>GPs and private psychiatrists (1997-98)</td>
<td>1.4</td>
</tr>
<tr>
<td>Homeless, not in contact with services (1997-98)</td>
<td>0.4</td>
</tr>
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<td><strong>TOTAL (2010/1997-98; all sectors combined)</strong>†</td>
<td><strong>5.3</strong></td>
</tr>
</tbody>
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Morgan VA et al. Psychosis prevalence and physical, metabolic and cognitive comorbidity. *Psychological Medicine*, 2014, 44, 2163-76
Mental health
ICD-10 diagnosis (%)

- Schizophrenia: 47.0%
- Schizoaffective disorder: 16.1%
- Bipolar, mania: 17.5%
- Depressive psychosis: 4.4%
- Other psychoses: 5.0%
- Other: 10.0%
Symptom profile: past year (%)

Key symptoms of psychosis
- Delusions: 60.9%
- Hallucinations: 55.8%
- Subjective thought disorder: 32.3%
- Elevated or irritable mood: 23.5%

Comorbidities
- Anxiety/phobia: 59.8%
- Depression: 54.5%
- Dysfunction in socialising: 63.2%
- Diminished sense of purpose: 52.0%
- Loss of interest: 51.7%
- Diminished emotional range: 51.6%
- Restricted affect: 43.6%

Negative symptoms
- Poverty of speech: 19.0%

At least one: 85.2%
Five or more: 22.0%
Course of illness (%)

- Continuous chronic illness with deterioration: 9.9%
- Continuous chronic illness: 20.6%
- Single episode: 8.1%
- Multiple episodes - partial recovery in between: 31.8%
- Multiple episodes - good recovery in between: 29.7%
Age at onset and interview; duration of illness

Mean age at onset
- Male: 23 years
- Females: 24 years
- Persons: 24 years

Mean duration of illness
- Male: 14 years
- Females: 15 years
- Persons: 15 years
Global independent functioning* (work, study, home), past 4 weeks (%)

Deterioration in functioning after illness onset

- Significantly, extremely, totally disabled: 22.8%
- Normal or mildly disabled: 24.0%
- Somewhat or moderately disabled: 53.3%

* Multidimensional Scale of Independent Functioning (J Jaeger)
## Overall social functioning (%)

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impaired social functioning, past year</td>
<td>63.2</td>
</tr>
<tr>
<td>Mental illness made it hard to maintain relationships</td>
<td>69.3</td>
</tr>
<tr>
<td>Felt socially isolated and lonely</td>
<td>22.4</td>
</tr>
<tr>
<td>No friends at all</td>
<td>13.3</td>
</tr>
</tbody>
</table>

- Of note, poor social functioning was correlated with higher rates of service utilisation incl. psychiatric admissions and emergency department presentations
Service utilisation and treatments – past year (%)
Cognition

* Chair: Brief Cognitive Assessment Tool working group
  Prof Johanna Badcock
### General cognitive ability

<table>
<thead>
<tr>
<th></th>
<th>Psychosis survey 2010</th>
<th>Population*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Premorbid IQ</strong> (mean, SD) (NART)</td>
<td>98.1 (SD 11.3)</td>
<td>107.4 (SD 17.1)</td>
</tr>
<tr>
<td><strong>Current general cognitive ability</strong> (mean, SD) (Speed of processing: Digit Symbol Coding Test)</td>
<td>38.6 (SD 10.7)</td>
<td>54.2 (SD 9.8)</td>
</tr>
</tbody>
</table>

- Premorbid IQ – lower score but within normal range
- Current general cognitive ability – 1.6 SD below population mean

→ some cognitive impairment prior to illness onset that is amplified over the course of illness

*Population norms:
NART: NART-R standardised norms
RBANS Digit Symbol Coding test: Australian Schizophrenia Research Bank population data
Personal and living circumstances
<table>
<thead>
<tr>
<th>Education</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Completed final year of schooling*</td>
<td>31.5</td>
</tr>
</tbody>
</table>

*ABS: Final year of schooling completed, general population aged 18-64 years: 53.0%
## Employment and finances (%)

### Main source of income

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government pension</td>
<td>85.0</td>
</tr>
</tbody>
</table>

### Paid employment

<table>
<thead>
<tr>
<th>Period</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past year</td>
<td>32.7</td>
</tr>
<tr>
<td>Past week</td>
<td>21.5</td>
</tr>
</tbody>
</table>

ABS: General population aged 15-64 years employed (July 2010): 72.4%

- Only 30% of those looking for work were getting help from the most appropriate service
- Evidence of system-wide deviation from evidence-based Individual Placement and Support principles
# Homelessness (%)

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Current (%)</td>
<td>5.2</td>
</tr>
<tr>
<td>Past year (%)</td>
<td>12.8</td>
</tr>
</tbody>
</table>

*Homelessness in Australia, Census 2006: 0.5%*

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Mean no. of days (past year)</td>
<td>155</td>
</tr>
<tr>
<td>Median no. of days (past year)</td>
<td>99</td>
</tr>
</tbody>
</table>
## Victimisation

### Childhood abuse (%)

<table>
<thead>
<tr>
<th></th>
<th>Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any childhood abuse</td>
<td>30.6</td>
</tr>
</tbody>
</table>

*National Mental Health Survey 2007: 15.5%*


### Victimisation in year prior to interview (%)

<table>
<thead>
<tr>
<th></th>
<th>Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any victimisation</td>
<td>38.6</td>
</tr>
<tr>
<td>Actual assault</td>
<td>16.6</td>
</tr>
</tbody>
</table>

*ABS Crime Victimisation Survey 2009-10. Actual Assault: 3.4%*


- 4.8 times general population rate
- Significant correlates in MVA:
  - Young age, living in a disadvantaged neighbourhood, homelessness, lifetime alcohol abuse / dependence, prior offending
  - Clinical variables: manic episode and self-harm
Physical health

* Population comparisons provided by Dr Tim Slade from 2007 National Mental Health Survey unless otherwise indicated
Mortality (SMR)

Modelled using SHIP screening population data

65 deaths by time of interview vs expected 16
Standardised mortality ratio (SMR) 5.5

Saha et al. Modelling the incidence and mortality of psychotic disorders: ANZ J Psychiatry, 2014, 48, 352-359
Suicide attempts and self-harm (%)

<table>
<thead>
<tr>
<th>Suicide attempt, lifetime</th>
<th>49.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliberate self-harm, past year</td>
<td>16.6</td>
</tr>
<tr>
<td>Hospitalised after self-harm, past year</td>
<td>8.8</td>
</tr>
</tbody>
</table>
Rates for physical health conditions were higher in people with psychosis compared to the general population aged 18-64 years.
Metabolic syndrome & cardiometabolic profile (%)

**Metabolic syndrome**
- is characterised by insulin resistance
- consists of a cluster of metabolic risk factors
- is associated with:
  - fivefold increased risk of type 2 diabetes
  - twofold increased risk of cardiovascular disease
  - associated risk of mortality
Metabolic syndrome & cardiometabolic profile (%)

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<tr>
<th>Metabolic syndrome (harmonised criteria 2009)</th>
<th>54.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.6% Australians aged 25+ years have IDF metabolic syndrome (Ausdiab, 2005)</td>
<td></td>
</tr>
</tbody>
</table>

Met threshold criteria for individual measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waist circumference</td>
<td>82.1</td>
</tr>
<tr>
<td>High density lipoproteins*</td>
<td>49.7</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>48.8</td>
</tr>
<tr>
<td>Triglycerides*</td>
<td>48.0</td>
</tr>
<tr>
<td>Plasma glucose*</td>
<td>28.6</td>
</tr>
</tbody>
</table>

*fasting
Cardiometabolic profile by age and sex

Waist circumference (below the risk threshold is better)

- risk factors for metabolic syndrome were present from a very young age
- peak prevalence of diabetes was 20-30 years earlier than would be expected in the general population
- very early elevation of risk factors and a different pattern of correlations between risk factors (cf. general population) suggest current CVD predictive instruments may be unsuitable for people with psychotic illness

Foley D et al. Cardiometabolic risk indicators that distinguish adults with psychosis from the general population PLoS ONE, 2013, 8, e82606
Proportion on medication for their condition

- **hypertension** 51.7%
- **diabetes/hyperglycaemia** 39.8%
- **dyslipidemia (hypercholesterolaemia)** 39.4%

Modifiable risk factors for cardiometabolic disease
Lifestyle: Smoking (%)

Currently smoking 66.1

If currently smoking

Cigarettes per day (mean) 21

Tried to stop, ever (%) 72

Tried to stop, past year (%) 31
Lifestyle: Substance use

2.0 times

6.1 times

Lifetime alcohol abuse/dependence

Lifetime illicit drug abuse/dependence
Lifestyle: Body Mass Index (%)

Proportion by category of body mass index (%)

- Underweight/normal: Psychosis survey (23.8%), Population data (43.2%)
- Overweight: Psychosis survey (28.3%), Population data (34.2%)
- Obese: Psychosis survey (45.1%), Population data (21.0%)
- Missing: Psychosis survey (2.8%), Population data (1.6%)
Lifestyle: Physical activity (%)
# Medication: Use, past 4 weeks (%)

<table>
<thead>
<tr>
<th>Medication for mental health</th>
<th>91.6</th>
</tr>
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<tbody>
<tr>
<td><strong>Class of medication</strong></td>
<td></td>
</tr>
<tr>
<td>Antipsychotic</td>
<td>81.6</td>
</tr>
<tr>
<td><strong>Atypical (any)</strong></td>
<td>74.0</td>
</tr>
<tr>
<td><strong>Typical (any)</strong></td>
<td>15.2</td>
</tr>
<tr>
<td>Antidepressant</td>
<td>37.4</td>
</tr>
<tr>
<td>Mood stabiliser</td>
<td>26.7</td>
</tr>
<tr>
<td>Anxiolytic, hypnotic</td>
<td>17.8</td>
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Any medication side effects 77.4

Increase in weight (past 6 months – meds. related) 37.5

Mean; median

Weight gain (past 6 months - in kilograms) 9; 8
Lifestyle risk factors and metabolic syndrome

Analysis of modifiable risk factors for metabolic syndrome:

- current smoking
- body mass index
- sedentary activity level
- low fruit consumption
- low vegetable consumption

In the multivariate analysis, significant modifiable risk factors:

- current smoking
- body mass index: overweight/obese

After adding medications, cognition and diagnosis – and adjusting for age, sex, illness duration and SES:

- pattern was unchanged
Emerging evidence that cannabis use may have a cardiometabolic protective effect:

- In unadjusted analyses:
  both occasional and frequent cannabis use in the past year were associated with significantly lower odds of metabolic syndrome

- After adjustment for potential confounders:
  e.g. lifestyle, cognition, antipsychotic use, diagnosis, sociodemographics
  the association remained significant for frequent use in the past year:
  odds ratio=0.6, 95% CI=0.4-0.8

- Mechanisms underlying this paradoxical finding require further investigation

Waterreus A et al. Metabolic syndrome in people with a psychotic illness: Is cannabis protective? Psychological Medicine, 2016, 46, 1651-1662
Costs

* SHIP health economics adviser: Dr Amanda Neil
**Costs of psychotic illness: $4,900 m (annual)**

**Health sector costs**
e.g. Inpatient, outpatient, emergency, community mental health services, medical and allied professional services, medication

**Other sector costs**
e.g. Accommodation, employment and other non-health support services, NGOs and other voluntary agencies, legal costs

**Time and productivity loss costs**
e.g. Expected earnings forgone by affected people and their carers, tax forgone due to lost productivity, cost of transfer payments (pensions and other income support)

*Societal perspective*

Challenges
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<th>Challenge</th>
<th>Percentage</th>
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<tr>
<td>Financial problems</td>
<td>42.7</td>
</tr>
<tr>
<td>Loneliness / social isolation</td>
<td>37.2</td>
</tr>
<tr>
<td>Unemployment</td>
<td>35.1</td>
</tr>
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<td>Physical health</td>
<td>27.4</td>
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<td>Mental illness</td>
<td>25.7</td>
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### Challenges for people with psychotic illness (%)

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- 77% believe their circumstances would improve over next 12 months
- This is a challenge for services to improve their circumstances
What are the challenges for services providers?

- Appalling social circumstances relative to the general community (employment, education, housing)
- Complex clinical profile complicated by high levels of social isolation and dysfunction, substance abuse, childhood and adult victimisation and their sequelae, and chronic social disadvantage
- Poor uptake of psychosocial therapies and rehabilitation services
- Very poor physical health profile, incl. high prevalence of risk factors, risk factor thresholds exceeded at an early age, evidence of under-detection and under-treatment

For circumstances to alter substantially for people with psychotic illness, we need to take a holistic and integrated approach to recovery that targets mental and physical wellbeing, quality of life and social circumstances.
“[T]he erosion of social support systems, likely to be associated with the processes of globalization, should be a matter of grave concern. The sobering experience of high rates of chronic disability and dependency associated with schizophrenia in high income countries, despite access to costly biomedical treatment, suggests that something essential to recovery is missing in the social fabric.”

Jablensky and Sartorius (2008)

Overview papers:


Morgan VA et al. Psychosis prevalence and physical, metabolic and cognitive comorbidity. Psychological Medicine, 2014, 44, 2163-76
Thank you