North West Adelaide Health Study - Background

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Head

Population Research & Outcome Studies
Aim of presentation

• History and background to the NWAHS
• Methodology

• Aim of today
  – Introducing ourselves
  – Highlight our successes
  – Promote opportunities
THE LATEST RESEARCH SHOWS THAT WE REALLY SHOULD DO SOMETHING WITH ALL THIS RESEARCH
The study ... in a nutshell

- A representative population cohort study
- Original cohort of approximately 4000 adults aged 18 years and over
- Cohort participants recruited from the northern and western regions of Adelaide
- Data both self-reported and biomedically measured
- Study provides baseline and ongoing information about chronic disease and health-related risk factor status
- A unique SA study and a unique, powerful database
Origins

- Originally conceived in 1990’s (building on the success of the Health Omnibus Survey)
- Professor Richard Ruffin – new Mortlock Professor of Medicine at University of Adelaide (based at QEH) – making a difference in the NW suburbs of Adelaide
- Original funding – Florey Grant – University of Adelaide
What were/are the aim of the study?

- To provide quality evidence-based, timely, accurate data to policy makers and planners of health services and programs
- To make a difference to the health of residents of northern and western Adelaide
WHY did we do this study? (1)

• Population Research & Outcome Studies
  – Health Omnibus Survey (since 1990)
  – Health Monitor (since 1995)
  – SA Monitoring & Surveillance System (SAMSS)

• Cross sectional
WHY did we do this study? (2)

• 1979 - WHO Global Strategy – Health for all by the Year 2000

• Australia’s response – National Health Priority Areas
  – 1996 – CVD, Mental health, Injury prevention and Cancer control
  – 1997 – Diabetes
  – 1999 - Asthma
  – 2002 – MSK
  – 2008 - Obesity
• Originally focused on 4 of 6 conditions identified as National Health Priority Areas
  – Stages 1 and 2 (2000-2006) – asthma and diabetes
  as well as
  – COPD (bronchitis and emphysema) and risk factors

• Better description ⇒ better targeting for policy and interventions

• Segmentation of large representative sample according to stage of disease
  – To identify each segment’s characteristics
  – How they change over time
WHY did we do this study?

- Gold standard - South Australian evidence
  
  Use of both self-reported and biomedically measured data

  Example: Overweight and obesity

  When people are asked their height and weight in a survey, they tend to OVER-ESTIMATE their height but UNDER-ESTIMATE their weight.
The aim of prevention:

- To optimise health across lifespan in all populations
- To improve health outcomes
- To maintain a quality of life
- To promote well being
- Early intervention
1. Maximising opportunities
   - Cost-effective
   - Responsive
   - Empowerment

2. Must understand
   - Aetiology
   - Consequences in the population

3. Appreciate
   - Value of experience
   - Value of research
   - Value of data & information
Sir Muir Gray

- Evidence-based health movement
- *The Resourceful Patient*, Muir argues for a radical shift in balance between the knowing professional and the unknowing patient
The application of what we know—our knowledge from research, from data and from experience will have a bigger impact on health and disease than any drug or technology likely to be introduced in the next decade.”

Most important Public Health advance in last 200 years:

CLEAR, CLEAN WATER

Most important requirement for Public Health advancement

CLEAR, CLEAN KNOWLEDGE

(knowledge = evidence + wisdom)
How is the study designed?

- Cohort studies ...
  - Allow direct determination of risk
  - Provide evidence about time lag between exposure and disease
  - Facilitate generalisation of findings
  - Allow examination of multiple outcomes

... but these kinds of studies take time

“In the solving of a mystery, one clue leads to another, then another … one question, instead of yielding easy answers, may lead to more questions.”
Phases of the study

Jan 2000
- Eligible random, representative EWP sample, NW Adelaide
- CATI recruitment interview, ages 18+
  - Attended clinic (Phase 1A)
    - n=2523

Mar 2002
- Telephone Follow Up - Interview 1
  - (of n=2523) n=2231 RR 91.7%

Sept 2002 to June 2003
- Additional attending clinic (Phase 1B)
  - n=1537
- Stage 1 PR 69.4%; RR 49.4%

May 2004 to Feb 2006
- Second visit / clinic assessment of cohort (n=3205)
  - PR 90.1%; RR 81.0%

July to Nov 2007
- Telephone Follow Up - Interview 2 (of n=3622) RR 79.7%

June 2008 to Aug 2010
- Third visit / clinic assessment of cohort (n=2487) PR 77.4%; RR 67.0%
  - incl 1 randomly selected child of each participant (n=230)

Stage 1
- Timeline
- Stage 2
- Stage 3
Methodology (CATI recruitment)

- Using CATI (Computer Assisted Telephone Interview) technology
- Households randomly selected from EWP (Electronic White Pages)
- North-west area of Adelaide selected
- Introductory letter and brochure sent
- Appointment made to attend clinic
Participants were sent a folder which included:

- Clinic appointment details
- Information sheets about clinic visit
- Map
- Refrigerator magnet
- Change of address notification and return to sender envelope

...as well as the following to be completed and returned to the clinic appointment:

- Questionnaire (and a food frequency questionnaire, Stage 3 only)
- Form detailing the contact details of their general practitioner – so a copy of their results could be sent to them
- Form detailing the contact details of a family member or friend not living with them – in case the study team were unable to locate the participant
Clinic procedures

- Consent – both for the clinic procedures and Medicare data
- Urine sample (albumin, creatinine)
- Blood pressure
- Height and weight measurements
- Waist and hip circumference measurements
- Fasting blood test (including glucose, lipid profile, glycated haemoglobin, creatinine)
Clinic procedures

- **Arthritis**
  - hand grip strength (Stages 2 & 3)
  - hand photograph, shoulder range of movement, foot pain (Stage 2 only)

- **Lung function spirometry**

- **Allergy skin test:** rye grass, cat, house dust mite, alternaria, feather and cockroach (Stage 1 only)

- **Health literacy (Stage 3 only)**

*Sub-studies: DEXA bone scan (ages 50+), saline challenge, aortic stenosis, adverse outcomes questionnaire*
Pocket PCs

• Entry of clinic running sheet into Pocket PCs during clinic appointment
• Checking of personal details currently in our database
• Immediate recall of previous results for height, weight, blood pressure and spirometry for participant
• Direct downloading of clinic results into Access database for ready generation of result letters to be sent to participants and their doctors
What information do we collect?
CORE – All 3 stages

• Conditions
  – **asthma**, bronchitis, emphysema (incl **lung function testing**)
  – **diabetes** (incl **blood sample testing for glucose and HbA1C for diabetes**)
  – cardiovascular disease (heart attack, stroke, angina) (incl **blood pressure testing** and **blood sample testing for cholesterol and triglycerides**)
  – mental health (anxiety, depression, stress-related, any other mental health conditions)

• Risk Factors
  – smoking
  – alcohol
  – obesity and central adiposity (incl **height & weight for body mass index, waist and hip circumference**)
  – quality of life (SF36)
  – physical activity (National Health Survey/Active Australia)
  – health care utilisation
  – family history (diabetes, heart disease, stroke)

• Demographics
  – education, household income, marital status, work status, pension benefit
What information do we collect?
MATCHED – 2 of 3 stages

• Conditions
  – cardiovascular disease (TIA/mini-stroke)
  – musculoskeletal conditions - osteoporosis, arthritis (low back, hips, knees, feet, shoulders, hands), injury (incl hand grip strength)
  – depression (CES-D)
  – kidney health (incl urine sample testing for albumin & creatinine)

• Risk Factors
  – family history (osteoporosis)

• Demographics
  – occupation, family structure
What information do we collect?
SINGLE MEASURES – Stages 1, 2 & 3 and TFU2

Stage 1:
Risk factors: skin allergies
Demographics: age, date of birth, sex, number of people <18 and 18+ in household, country of birth, Aboriginal/Torres Strait Islander status

Stage 2:
Conditions: mental health (GHQ12), arthritis (shoulder movements; hand photos)
Risk factors: sunlight, menopause

Telephone Follow Up 2:
Supplementary information including demographics (occupation, study and other life commitments), life-course information (parents’ country of birth, etc), neighbourhood migration, lifestyle, nutrition, psychological distress (K10)

Stage 3:
Conditions: gout
Risk factors/other: family history (high blood pressure, body type of biological parents, asthma), quality of life (AQOL), sleep and sleep apnoea, mastery and control, major health events, cardiovascular knowledge, household food habits and environment, other people in household, kindergarten attendance, carers role, nutrition (food frequency questionnaire), blood sample (DNA, c-reactive protein, complete blood exam & biochemistry), exhaled nitric oxide, exhaled carbon monoxide, pulse oximetry, health literacy (short form)

Demographics: housing situation, money situation
Tracking

Missing Participants
Either identified from Harrisons or from returned mail

Secondary Contact

Australian Electoral Roll Public Access Records

Check Other States
Send to State Electoral Roll for Checking

Send a Letter for Phone Number

White Pages for Phone Number

Number FOUND
Number NOT FOUND

Phoned DH with New Number

Did Not Phone DH with Phone Number

Returned Mail

National Death Index

Confirmed from Australian Electoral Roll Website, Enrolment Verification

CONFIRMED
NOT FOUND

HIC send letter to Missing Participants

Follow up Call

Registered Mail

Did Not Phone DH with Phone Number

NOT FOUND
Initiatives to improve retention

Welcome to the North West Adelaide Health Study! We are an exciting initiative for the health of all people in the North West area. We aim to make a comprehensive health assessment of the whole adult community and to identify resources needed to achieve much improved health status and services in the future.

Best wishes on your birthday
Governance

• Original chief investigators (2000)
  – Dick Ruffin (Uni Adelaide)
  – David Wilson (SA Health)
  – Julieanne Cheek (Uni SA)
  – Pat Phillips (QEH)
  – Anne Taylor (SA Health)
Governance

Collaborators
- Psychiatry, Diabetes, Renal, MSK
- GISCA, IMVS
- NOBLE, MAILES, FAMAS etc

CI Executive
Anne Taylor (PI/Epid), Robert Adams (PI/Clin), Kay Price, Catherine Hill

Information Management Committee

Associate Investigators
Mark Daniel, James Martin, Sarah Appleton, Tiffany Gill, Janet Grant, Zumin Shi, Lora Dal Grande, Jennifer Buckley and Sandy Pickering
Emeritus – Richard Ruffin, David Wilson, Pat Phillips

Principal Investigator (Epidemiological)
Data, Substudies & Data Requests Management; Dissemination

Principal Investigator (Clinical)
Clinical Co-ordination & Staff
Dissemination

• Reports:
  - Stage 1 overall
  - Stage 2 – summary report and individual four page reports
  - Stage 3 – individual four page reports

• Conference presentations and posters – at local, national and international forums (182)
  ▪ In-house and professional seminars & workshops

• Journal publications (81)

• Media – newspaper, radio and television
Published journal articles

- 2012 – 9
- 2011 – 11
- 2010 – 14
- 2009 – 16
- 2008 – 13
- 2007 – 2
- 2006 – 9
- 2005 – 5
- 2004 – 2
- 2003 – 3
• Taylor AW, Dal Grande E, Grant J, Appleton S, Gill TK, Shi Z, Adams RJ. Weighting of the data and analytical approaches may account for differences in overcoming the inadequate representativeness of the respondents to the third wave of a cohort study. *Journal of Clinical Epidemiology, in press*


• Ng KL, Quinn S, Gill TK, Hill C, Shanahan EM. Impact of the New national health standard for rail safety workers on ischaemic heart disease (IHD) risk factors in train drivers. *Internal Medicine Journal 2012*
2012 Publications (cont)

2011 Publications


2011 Publications (cont)


Results presented today

• Chronic condition
  – MSK (Dr Tiffany Gill)

• Risk Factor
  – Obesity (Dr Sarah Appleton)

• Highlighting additional sub studies undertaken
  – Sleep (Professor Bob Adams)
  – NOBLE – Baby Boomers (Rhiannon Pilkington)
  – Strategies informing self-care decision-making (A/Professor Kay Price)

• Other issues
  – Health Literacy (A/Professor Catherine Hill)
Aim of today

– Introducing ourselves
– Highlight our successes
– Promote opportunities
Contact details

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- North West Adelaide Health Study website
  http://www.nwadelaidehealthstudy.org

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