DID WE DO THE RIGHT THINGS RIGHT?

the evaluation of Keep well in NHS Greater Glasgow & Clyde
OVERVIEW

- rationale for ‘doing the right things right’
- the prevention potential of Keep well
- did Keep well achieve its potential?
- notable achievements
‘DOING THE RIGHT THINGS RIGHT’

DOING THE RIGHT THINGS
Selecting evidence based models and approaches

+ DOING THEM RIGHT
Delivery fidelity

POPULATION LEVEL IMPACT
improved health & reduced health inequalities
THE SCALE OF THE CHALLENGE

PREMATURE DEATHS (M&F 0-74YRS) GG&C 2000-2008, BY SIMD QUINTILE

- **All Other Causes**
- **External Causes of Injury/Poisoning**: ICD10 V01 - Y98
- **Digestive Diseases**: ICD10 K00 - K93
- **Respiratory Diseases**: ICD10 J00 - J99
- **Cancers**: ICD10 C00 - D48
- **Circulatory Disease**: ICD10 I00 - I99
PREVENTION POTENTIAL OF KEEP WELL

Source: INTERHEART 2004
JOINT EFFECT OF CVD RISK FACTORS

Source: INTERHEART 2004
## Wider Prevention Potential

<table>
<thead>
<tr>
<th>Examples of Underlying Community Factors</th>
<th>Actual Causes</th>
<th>Major Cause of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RISK:</strong> Advertising, junk food</td>
<td>Diet &amp; Activity Patterns</td>
<td>Heart Disease</td>
</tr>
<tr>
<td><strong>PROTECTIVE:</strong> Safe places for physical activity, access to nutritious food</td>
<td></td>
<td>Cancer</td>
</tr>
<tr>
<td><strong>RISK:</strong> Advertising, access for teens, risk-taking</td>
<td>Tobacco</td>
<td>Stroke</td>
</tr>
<tr>
<td><strong>PROTECTIVE:</strong> Self-esteem, social supports</td>
<td></td>
<td>Diabetes</td>
</tr>
<tr>
<td><strong>RISK:</strong> Advertising, easy access, peer pressure</td>
<td>Alcohol &amp; Drugs</td>
<td>Injuries &amp; Violence</td>
</tr>
<tr>
<td><strong>PROTECTIVE:</strong> Self-esteem, parental involvement, leisure-time options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DID KEEP WELL ACHIEVE ITS POTENTIAL?
# Uptake to 30 September 2010

![Uptake Chart](chart.png)

<table>
<thead>
<tr>
<th>Region</th>
<th>Original Eligible</th>
<th>Invited</th>
<th>Seen</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>North (W1)</td>
<td>9612</td>
<td>7867</td>
<td>11167</td>
<td>6715</td>
</tr>
<tr>
<td>North (W4)</td>
<td>7867</td>
<td>10706</td>
<td>2395</td>
<td>905</td>
</tr>
<tr>
<td>East (W1)</td>
<td>11167</td>
<td>7895</td>
<td>2154</td>
<td>855</td>
</tr>
<tr>
<td>East (W4)</td>
<td>16005</td>
<td>4985</td>
<td>2758</td>
<td>392</td>
</tr>
<tr>
<td>SW (W2)</td>
<td>5393</td>
<td>3009</td>
<td>971</td>
<td>831</td>
</tr>
<tr>
<td>SW (W4)</td>
<td>4187</td>
<td>3566</td>
<td>2356</td>
<td>200</td>
</tr>
<tr>
<td>IC (W2)</td>
<td>4624</td>
<td>5180</td>
<td>1492</td>
<td>64</td>
</tr>
<tr>
<td>IC (W4)</td>
<td>9762</td>
<td>3832</td>
<td>2356</td>
<td>36</td>
</tr>
<tr>
<td>W Dun (W2)</td>
<td>4410</td>
<td>2974</td>
<td>700</td>
<td>64</td>
</tr>
<tr>
<td>W Dun (W4)</td>
<td>12665</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Wave 1 practices time to 50% of patients seen

- Time from 1st Health Check to 50% seen (days)
- Mean time to 50% patients seen
- Median time to 50% patients seen
UNENGAGED NEEDS ASSESSMENT

A Look at NA Patient Populations Within Practices & Related Practice Characteristics

15% to 45%

- Fit HCA
  - "Team effort"
  - Monday late clinic
- Pharmacist sends patients to HCA
  - KW note attached to prescriptions
  - Targeted sickleave
  - KW app/software coded in pink, so all team aware
  - Piggybacking on private clinics
  - Use Outreach Worker

- Practice Nurse
  - Unofficial lane hours occasionally offered
  - Picked up on patients with diabetes through KW health check

- Receptionist
  - Phone KW Nurse + existing nurse
  - Practice calls patient day before appointment as reminder
  - Practice 'open access' for all clinics, every

- Data Manager
  - Looks after KW

- Practice Nurse
  - High hours for KW
  - Late clinic 'several evenings' per week
  - Use Outreach Worker
  - Letters to patients titled with "Keep Well Project"

- Practice Nurse
  - Employed full time for KW 'team effort' additional evening hours added
  - Recall focused on non-engaged patients
  - KW reviews done opportunistically - Dr takes bloods sometimes
  - No OW used
  - Very large practice

- Practice Nurse
  - Saturday morning clinics
  - Extended hours
  - Housebound visits
  - 1 out of the 3 GPs is anti-KW - doesn't believe in it at all

- Practice Manager
  - HCA + 2 Practice Nurses
  - New patients who are eligible for KW are automatically given a KW check

- Admin (Test Tool) + PN (P1)
  - Tried late clinic - security an issue
  - Use Practice letterhead instead of KW logo - higher success rate
  - No OW used
  - On 3rd nurse - lack of continuity
Independent predictors of non-engagement:
- Younger age
- Less frequent health services utilisation

Utilisation of health services in last year:
- 202/287 (70%) of unengaged
- 274/280 (98%) of attendees
### WAVE 1: independent predictors of uptake

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted Odds Ratio</th>
<th>Lower limit 95% CI</th>
<th>Upper limit 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger age</td>
<td>0.953</td>
<td>0.948</td>
<td>0.958</td>
</tr>
<tr>
<td>SIMD quintile (within CHCP)</td>
<td>0.944</td>
<td>0.916</td>
<td>0.973</td>
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<tr>
<td>Male sex</td>
<td>0.639</td>
<td>0.601</td>
<td>0.679</td>
</tr>
</tbody>
</table>
N & E GLASGOW: Uptake by age & residential deprivation characteristics
THE LAW OF DIMINISHING RETURNS

Costs of Engagement Methods Used

- Attended (n=192): 214.1 hours
- Partial Engagement (n=92): 28.76 hours
- Failed to Engage (n=262): 65.19 hours
- Excluded Patients (n=343): 28.68 hours

Unengaged Sample of 889 Patients from 6 Practices
DID KEEP WELL ACHIEVE ITS POTENTIAL?
OBJECTIVES OF KEEP WELL

**INPUTS**

- **LOCAL SERVICE DELIVERY**
  - **Resources invested:**
    - £1m per CHP for 2 years from April 2006
    - £0.4m per CHP smoking cessation for additional staff time
  - **Target population:** those aged 46-65 who are registered with a GP
  - **Activities:**
    - GP practices
    - Identify population
    - Engage
    - Assess
    - Provide a range of effective clinical Rx
    - Refer to other local services
    - Maintain, monitor and follow-up
  - **Other local services:** Accommodate additional demand

- **INFRASTRUCTURE**
  - **Resources invested:**
    - £25m over 3 years + Counterweight HS (staff time)
    - ISD (staff time)
    - CHPs
    - NHS boards
  - **Target groups:**
    - Boards & CHPs
    - Snr leaders
    - GP practices
    - Local NHS and comm. services
    - Community
  - **Planning & evaluation**
    - Social marketing
    - Capacity building
  - **Boards/CHPs**
    - Engage with GPs & PC teams
    - Recruit and train staff
    - Monitoring and reporting

**OUTPUTS**

- **ACTIVITIES**
- **PARTICIPATION**
- **SHORT**
- **MEDIUM**
- **LONG**

- **OUTCOMES**
  - **CVD risk factor modification**
    - Quit rate
    - Smoking
    - BMI
    - Cholesterol
    - Blood pressure
    - Diabetes management
  - **Additional risk factors**
    - Inc PA levels
    - Healthier diet (F&V, fat, salt)
    - Less alcohol consumption
  - **Patient satisfaction**
    - Health-related QoL
    - Quality of GP consultations
  - **Service impacts**
    - Increased prescribing
    - Increased use of GP practices and local services
  - **Reach**
    - No. on risk register
  - **Uptake**
    - Improved access
    - % received clinical interventions
    - % referred
    - Compliance
    - % continuing treatment at follow-up
  - **Service impacts**
  - **Reduction premature CVD mortality in dep areas**
  - **Reduced health inequalities**
  - **Annual reporting**
  - **By 2 years (end of pilot)**
  - **By 5-10 years from roll-out**
  - **Resources invested:**
    - SE (£25m over 3 years + Counterweight HS (staff time))
    - ISD (staff time)
    - CHPs
    - NHS boards
    - Health info & IT
    - Planning & evaluation
    - Social marketing
    - Capacity building
    - Boards/CHPs
    - Engage with GPs & PC teams
    - Monitoring and reporting
    - Additional demand
    - Engagement with GPs & PC teams
    - Monitoring and reporting
    - Increased use of GP practices and local services
    - Healthier diet (F&V, fat, salt)
    - Less alcohol consumption
    - Health-related QoL
    - Quality of GP consultations
## MODIFIABLE CVD RISK FACTORS

<table>
<thead>
<tr>
<th></th>
<th>% smoker</th>
<th>cholesterol &gt;6</th>
<th>hypertension</th>
<th>global CVD risk &gt;20%</th>
<th>% prescribed statins</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N&amp;E</strong></td>
<td>15.9</td>
<td>25.3</td>
<td>3.2</td>
<td>40.2</td>
<td>31.0</td>
</tr>
<tr>
<td><strong>SW</strong></td>
<td>8.0</td>
<td>21.3</td>
<td>1.4</td>
<td>30.4</td>
<td>31.0</td>
</tr>
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</table>
DIAGNOSED MORBIDITY

<table>
<thead>
<tr>
<th></th>
<th>CHD</th>
<th>diabetes</th>
</tr>
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<tbody>
<tr>
<td>N&amp;E</td>
<td>2</td>
<td>2.6</td>
</tr>
<tr>
<td>SW</td>
<td>0.7</td>
<td>1.2</td>
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</table>
Statin Prescribing Trends 2005-10: East Glasgow

Statin - East Glasgow Community Health & Care Partnership

Quantity (tabs & caps) per 1000 patients per quarter (Keep Well Practices in CHCP = 9)
Overall population impact

- Change in CV risk relative to non-KW practices
- Distribution of benefit
- Diffusion of effects
‘DOING THE RIGHT THINGS RIGHT’

DOING THE RIGHT THINGS
Selecting evidence based models and approaches

+ DOING THEM RIGHT
Delivery fidelity

POPULATION LEVEL IMPACT
improved health & reduced health inequalities
Multiple risk factor interventions for primary prevention of coronary heart disease (Review)

Ebrahim S, Berwick A, Barke M, Davey Smith G
Does the routine use of global coronary heart disease risk scores translate into clinical benefits or harms? A systematic review of the literature.

Sheridan & Crespo, BMC Health Services Research, 2008
NOTABLE ACHIEVEMENTS

- Innovative engagement approaches
- Structured understanding of primary care processes
- Enhanced collaboration with (and between) Health Improvement Services & Primary Care
- New health improvement service models
- Cultural shift
Some examples

NOTABLE ACHIEVEMENTS
UNENGAGED PATIENTS IN WAVE 1: HCNA

Figure 1: Flow chart of programme

Conceptual Framework & Analyses

Case-control study comparing KW NA with KW Attended

Systematic understanding of factors associated with failure to engage with Keep Well

Prototype Model for increasing attendance across 3 North & 3 East Glasgow Keep Well practices

Examination of engagement methods used

Interpretation & dissemination of findings

- September 2009
  - January 2010
- December 2009
  - July 2010
- May 2010
  - July 2010
- March 2010
  - October 2010
**SMOKE FREE ENHANCED SERVICE**

- 12 week brief intervention service
- Single Nicotine Replacement Therapy (NRT) product supplied
- Carbon Monoxide (CO) monitoring at weeks 1, 2, 5 and 12
- 12 week intensive support service
- Option of combination NRT if required
- CO monitoring essential at every week
**EFFECTIVENESS: 4 WEEKS**

<table>
<thead>
<tr>
<th></th>
<th>Basic Pharmacy Service</th>
<th>Enhanced Pharmacy Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Smoker</td>
<td>13.9%</td>
<td>34.0%</td>
</tr>
<tr>
<td>Smoker</td>
<td>74.1%</td>
<td>65.5%</td>
</tr>
<tr>
<td>Unknown</td>
<td>12.1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Total Number</td>
<td>9621</td>
<td>194</td>
</tr>
</tbody>
</table>
• Assuming service dropout = relapse

• Basic pharmacy service: 1295 non-smokers at Week 4
  576 (44.5%) remain smoke free at Week 12

• SFES: 66 non-smokers at Week 4
  40 (60.6%) remain smoke free at Week 12

• Log rank Chi-square 7.278, p=0.007
<table>
<thead>
<tr>
<th></th>
<th>Basic service</th>
<th>SFES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average cost/participant</td>
<td>£152.73</td>
<td>£421.84</td>
</tr>
<tr>
<td>Probability of remaining relapse free at 12 weeks</td>
<td>0.059</td>
<td>0.21</td>
</tr>
<tr>
<td>Cost per quitter</td>
<td>£2,588.64</td>
<td>£2,008.76</td>
</tr>
</tbody>
</table>
WITH THANKS TO

- Heather Jarvie, Planning Manager
- All Keep well coordinators
- Keep well analyst team
  - Mark Menzies, Information Manager
  - Peter McMillan, Analyst
  - Alan Boyd, Analyst
- All members of Keep well Evaluation Group
- Alex Mackenzie, Director North Glasgow
- Linda de Caestecker, Director of Public Health
- Caroline Morrison, Consultant in Public Health