Planning and evaluation of oral health improvement programmes.

Prof Richard G Watt
University College London

OHP Workshop
2006 National Oral Health Conference
Workshop objectives

- Outline principles of oral health promotion
- Develop examples of good practice
- Review principles of health promotion evaluation
- Develop evaluation plans for oral health programs
Key Features of Dental Programs

- Treatment dominated
- Delivered by health professionals
- Targeted on priority groups
  - Different ages
  - High risk groups
  - Social and political needs
Key Features (2)

- Individual focus - screening
- Prevention - mainly clinically based
- Educational element - knowledge change
CLASSIC HIGH RISK APPROACH
Effectiveness Reviews of DHE

- Brown (1994)
- Schou and Locker (1994)
- Kay and Locker (1996)
- Sprod, Anderson and Treasure (1996)
- Kay and Locker (1998)
- Department of Human Services (1999)
- Watt and Marinho (2005)
Limitations with health education

- Ineffective in reducing inequalities
- Individualist – ignores determinants of health
- Costly - high professional input
- Non sustainable
- Duplication of effort
- Theoretically flawed
- Public apathy and resistance
Public health agenda
What did the Ottawa Charter say?

- The Ottawa Charter is a consensus statement developed by WHO at the 1st international conference on health promotion in Ottawa in 1986.
- It uses the term “health promotion” to summarize new approaches to public health intervention. The Charter defines health promotion as:

  “the process of enabling people to increase control over the determinants of health and thereby improve their health” WHO, (1986)
What did the Ottawa Charter say?

Five major themes to the “New Public Health”:

- Build *healthy public policy*
- Create *supportive environments for health*
- Strengthen *community action for health*
- Develop *personal skills, and*
- *Re-orient health services*
Bangkok Charter for Health Promotion in a Globalized World

- Advocate for health based on human rights
- Invest in sustainable policies, actions and infrastructure to address health determinants
- Build capacity for policy development, leadership, health promotion practice & knowledge transfer
- Regulate and legislate for health protection & to enable equal opportunity for health
- Partner and build alliances with public, private, NGOs and civil society to create sustainable action

(WHO 2005)
The main determinants of health

Source: Dahlgren and Whitehead, 1991
“The causative role of individual behaviours have been exaggerated. They should be seen as indicators of other factors which are more straightforwardly related to the social structure, and which are the true aetiiological agents.”

Blane, (1985)
Oral health determinants

Bio-medical perspective
- Oral hygiene
- Sugars consumption
- Smoking and alcohol
- Exposure to fluoride
- Use of dental services
Evaluating role of dental behaviour in oral health inequalities

“To reduce social inequalities in adult oral health, efforts need to be directed to factors other than the dental behaviours of individuals…. Rather than focusing on individuals alone, the approach needs to achieve a better balance of targeting both individual level factors and also the social environments in which health behaviours of individuals are developed and sustained.”

Sanders, Spencer & Slade (2006)
Determinants of oral health

Economic, Political & Environmental Conditions
- Poverty
- Housing
- Sanitation
- Leisure Facilities
- Shopping Facilities
- Employment
- Work/educational environment
- Income
- Policy - International
  - National
  - Local
- Commercial Advertising

Social & Community Context
- Social norms
- Peer Groups
- Social Capital
- Cultural Identity
- Religion

Oral Health Related Behaviour
- Diet
- Hygiene
- Smoking
- Alcohol
- Injury
- Service

Individual
- Sex
- Age
- Genes
- Biology

Oral Health

Watt (2003)
Complex influences on health

Wider influences

Lifestyle factors

Health

individuals & communities
Policy Levels for Tackling Inequalities in Health

- Making structural changes to economic, cultural and environmental conditions
- Improving infrastructure and access to services
- Strengthening communities
- Strengthening individuals
Common Risk/Health Factor Approach

Diet → Obesity
Diet → Cancers
Diet → Heart Disease
Diet → Respiratory disease
Diet → Dental caries
Diet → Periodontal diseases
Diet → Trauma

Stress → Heart Disease
Stress → Respiratory disease
Stress → Dental caries
Stress → Periodontal diseases
Stress → Trauma

Control → Obesity
Control → Cancers
Control → Heart Disease
Control → Respiratory disease
Control → Dental caries
Control → Periodontal diseases
Control → Trauma

Hygiene → Smoking
Hygiene → Alcohol
Hygiene → Exercise
Hygiene → Injuries

Sheiham & Watt, (2000)
Health Promotion Actions

- Health Education: eg. alcohol advice
- Clinical Prevention: eg. Immunisation
- Environmental change: eg. Safer roads
- Community Action: eg. Support groups
- Fiscal change: eg. Cheaper healthy foods
- Policy Development: eg. Controls on tobacco advertising
Communities: partnership-working

N.H.S.
- Health Authorities
- Trusts
- Primary Care Groups

LOCAL GOVERNMENT
- Education
- Housing
- Planning & Transport
- Social Services

Voluntary & community groups

Criminal Justice System

Colleges & universities

Business sector
Public health agenda: intervention design

- Empowering
- Participatory
- Holistic
- Inter-sectoral
- Equitable
- Sustainable
- Multi-strategy

WHO (1998)
Conclusion 1

Need for radical change in direction and approaches to achieve sustainable improvements in oral health

- From individual behaviour change to focus on altering social environment
- From isolation to integration
- From implementation of dental health education to adoption of complementary range of strategic actions focusing on determinants of oral health
Workshop 1

Each group to design an oral health improvement plan for defined population group:

Specify:

- Aims and objectives of program
- Outline range of key strategies to improve oral health
- Identify collaborations and local partnerships
Principles of evaluation
"Evaluation is the process of assessing what has been achieved and how it has been achieved."

(Ewles & Simment, 2002)
Importance of Evaluation

- Minimise negative or harmful outcomes
- Improve job satisfaction and motivate staff
- Assess whether interventions are ethical
- Provide feedback to population
- Make best use of resources
- Disseminate good practice
- Improve oral health promotion practice & quality
- Inform policy
Need for development

- Lack of knowledge, skills and confidence
- Limited resources
- Lack of support - isolation
- Poor evaluation design
- Inappropriate outcomes
- Inappropriate timescale

Watt et al., (2002)
Basic Principles of Evaluation

- Set aims and objectives for intervention
- Clarify purpose of evaluation
- Consider both process and outcome measures
- Select appropriate methods to collect info
- Disseminate information
Purpose of evaluation

- Delivery – is the programme being implemented as planned?
- Effectiveness – are the intended outcomes being achieved?
- Efficiency – are resources being used to best effect?
- Sustainable – are the changes maintained in the longer term?
- Quality – are agreed standards of practice being met?
Process evaluation

- Programme reach – Is the intervention reaching the target group?

- Programme acceptability – Are all participants satisfied with the intervention?

- Programme integrity – Are all aspects of the intervention being delivered as planned?

- Programme quality - Are the intervention materials and resources of good quality?
Outcome evaluation

- Assesses what was achieved by the intervention - were objectives met?
- Range of outcomes appropriate
- Need to reflect nature of intervention & timescale for change
- Should NOT rely only on clinical measures
Assessment of cost and benefits (financial, social, political)

Epidemiology and Demography

Community needs and analysis

Stages of Research and Evaluation

Problem definition

Solution generation

Innovation testing

Intervention demonstration

Intervention dissemination

Programme management

What is the problem?

How might it be solved?

Did the solution work?

Can the programme be repeated/refined?

Can the programme be widely reproduced?

Can the programme be sustained?

Key Research Questions

Assessment of Outcome

Understanding of Process
Evaluation methods
Health Promotion Evaluation: Recommendations to Policymakers

Report of the WHO European Working Group on Health Promotion Evaluation
WHO Recommendations

“The use of randomised control trials to evaluate health promotion initiatives is, in most cases, inappropriate, misleading and unnecessarily expensive.”

“Policy makers should support the use of multiple methods to evaluate health promotion initiatives.”

“Policy makers should support further research into the development of appropriate approaches to evaluating health promotion initiatives.”

WHO 1998
Range of methods available

Quantitative
- Experimental
- Quasi-experimental
- Observational
- Economic

Qualitative
- Semi-structured interviews
- Focus groups
- Documentary analysis
Evaluation outcomes for public health interventions
Fig 1. Outcome model for health promotion

<p>| Health Promotion Actions | Health Promotion Outcomes (intervention impact measures) | Intermediate Health Outcomes (modifiable determinants of health) | Social and Health Outcomes |</p>
<table>
<thead>
<tr>
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<tbody>
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<td>Examples include:</td>
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<td>patient education,</td>
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<td>school education,</td>
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<td>broadcast media</td>
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<td>communication</td>
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<td>policy statements, legislation, regulation, resource</td>
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<td>Examples include: patient education, school education, broadcast media communication</td>
<td>Measures include: health-related knowledge, attitude, motivation, behavioural intentions, personal skills, self-efficacy</td>
<td>Measures include: tooth brushing and related oral hygiene, food choices</td>
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<td><strong>Effective health service</strong></td>
<td></td>
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<tr>
<td>Examples include: community development, group facilitation, technical advice</td>
<td>Measures include: social norms, public opinion, community action</td>
<td>Measures include: provision of preventive services, access to and appropriateness of oral health services</td>
<td></td>
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<td><strong>Healthy public policy &amp; organisational practice</strong></td>
<td><strong>Healthy Environments</strong></td>
<td></td>
</tr>
<tr>
<td>Examples include: lobbying, political organisation and activism, overcoming bureaucratic inertia</td>
<td>Measures include: policy statements, legislation, regulation, resource allocation organisational practices</td>
<td>Measures include: fluoridated water, access to affordability of oral health care products</td>
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</tr>
<tr>
<td>patient education, school education, broadcast media communication</td>
<td>health-related knowledge, attitude, motivation, behavioural intentions, personal skills, self-efficacy</td>
<td>food choices, oral hygiene, smoking, service utilization</td>
<td>quality of life, functional independence, freedom from pain</td>
</tr>
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<tr>
<td>Examples include:</td>
<td>Measures include:</td>
<td>Measures include:</td>
<td></td>
</tr>
<tr>
<td>lobbying, political organisation and activism, overcoming bureaucratic inertia</td>
<td>policy statements, legislation, regulation, resource allocation organisational practices</td>
<td>fluoridated water, access to/ affordability of food choices, reduced morbidity, disability, avoidable mortality (reduced DMF)</td>
<td>Nutbeam (1998)</td>
</tr>
</tbody>
</table>
Oral health promotion evaluation toolkit
Review and testing of oral health promotion outcome evaluation measures

Prof Richard Watt
Prof Elizabeth Kay
Prof Elizabeth Treasure
Dr Ruth Nowjack-Raymer
Blanaid Daly

Robert Harnett
Antony Morgan
Sabrina Fuller
Polly Munday

(Funded UK Department of Health - Primary Dental Care programme)
Aim of project

To develop and test a set of appropriate age specific oral health promotion evaluation outcome measures applicable for use in primary dental care settings
Methodology

- Theoretical framework developed by Nutbeam (1998)
- Mix of quantitative and qualitative methods
- Participative approach - key players
- 6 stage procedure
Six stage procedure

- Stage 1: Systematic search
- Stage 2: Quality assessment review
- Stage 3: Validation exercise - method triangulation
- Stage 4: Initial consultation - expert review
- Stage 5: Pilot testing
- Stage 6: Final consultation - users
Evaluation toolkit

- Three target groups
  - Pre-school
  - School children
  - Older people

- Wide range of outcome measures tested for validity and reliability

- Selection of outcomes presented

- Available at www.shancocksLtd.com
Key results

- Search uncovered 1202 measures
- High proportion classified as health literacy and lifestyle outcomes
- 49% passed quality testing
- 82% passed validation testing
- 66% and 75% passed reliability and discriminatory power testing respectively
Results of quality assessment review for each target population group (part 1)

<table>
<thead>
<tr>
<th>Type of measure</th>
<th>Pre-school children</th>
<th>12 year old children</th>
<th>Adults aged 65 years +</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. identified</td>
<td>No. meeting criteria</td>
<td>% meeting criteria</td>
<td></td>
</tr>
<tr>
<td>Morbidity</td>
<td>8</td>
<td>5</td>
<td>63</td>
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<tr>
<td>Quality of Life/ pain</td>
<td>36</td>
<td>12</td>
<td>33</td>
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<tr>
<td>Healthy lifestyles</td>
<td>113</td>
<td>34</td>
<td>30</td>
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<tr>
<td>Effective dental health services:</td>
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<tr>
<td>-Dental Health Services</td>
<td>48</td>
<td>13</td>
<td>27</td>
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<tr>
<td>-Health Visitors</td>
<td>22</td>
<td>19</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>-Pharmacists</td>
<td>19</td>
<td>14</td>
<td>74</td>
<td></td>
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<tr>
<td>Sub total</td>
<td>89</td>
<td>46</td>
<td>52</td>
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<tr>
<td>Healthy environments</td>
<td>25</td>
<td>25</td>
<td>100</td>
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* No items identified for this category.
## Results of quality assessment review for each target population group (part 2)

<table>
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<tr>
<th>Type of measure</th>
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<th>12 year old children</th>
<th>Adults aged 65 years +</th>
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<tr>
<td></td>
<td>No. identified</td>
<td>No. meeting criteria</td>
<td>% meeting criteria</td>
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<tr>
<td>Healthy Public Policy</td>
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<tr>
<td>-Policy Development</td>
<td>3</td>
<td>2</td>
<td>67</td>
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<tr>
<td>-Policy Implementation</td>
<td>2</td>
<td>2</td>
<td>100</td>
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<tr>
<td><strong>Sub total</strong></td>
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<tr>
<td>Social influence and action:</td>
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<tr>
<td>-Awareness</td>
<td>3</td>
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<td>100</td>
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<tr>
<td>-Opinions</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td>13</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>Healthy literacy</td>
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<tr>
<td>-Attitudes</td>
<td>16</td>
<td>11</td>
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<td>-Knowledge</td>
<td>59</td>
<td>33</td>
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<tr>
<td>-perceived control</td>
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<td>15</td>
<td>50</td>
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<tr>
<td><strong>Sub total</strong></td>
<td>105</td>
<td>59</td>
<td>56</td>
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<tr>
<td><strong>Totals</strong></td>
<td><strong>394</strong></td>
<td><strong>198</strong></td>
<td><strong>50%</strong></td>
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WHO Oral health evaluation guide

Watt and Petersen (2006)
Evaluation guide

- Guide to good practice
- Intervention design and planning
- Principles and practice of evaluation
- Practical case studies
Good practice in evaluation

- Participation
- Multiple methods
- Resources
- Measures
- Capacity building
- Dissemination

WHO (1998)
Workshop 2

Each small group to develop evaluation plan:

Consider:
- Evaluation methods
- Selection of process and outcome measures
- Identify resources and support needed
Final conclusion

- Need for public health approach to achieve sustainable oral health improvements
- Interventions need to focus on determinants of oral health & adopt multi-strategy approach
- Evaluation of interventions essential
- Need for appropriate evaluation methods and measures