Matching research agendas to the action strategies for preventing obesity and diabetes

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Edgar Diabetes and Obesity Research
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Reflections on diabetes and obesity research

• Investments in research
  – Investigator-driven research (the natural inclinations of *Homo Scientificus*) vs targeted research

• Two helpful paradigms
  – Problem-oriented and solution-oriented research
  – ‘Strategic Science’

• Roles and risks of public health research
  – Current *Dirty Politics* saga
  – Example – benchmarking government progress

• Challenges and opportunities ahead
  – *Healthy Families NZ*
Pima Indians

Arizona Pimas
• 70% obesity, 45% diabetes

Mexico Pimas
• 15% obesity, 7% diabetes
Obesity and diabetes research

- Obesity as the normal physiological response to an abnormal (obesogenic) environment
- Overweight and obesity as the driver of type 2 diabetes
Publications in obesity research

Medline journal article numbers referenced with ‘Obesity’ and other key MeSH headings

- 'Gene' or 'metabolism'
- 'Treatment' or 'management'
- 'prevention'

[Graph showing the increase in publications from 1970 to 2009 in intervals of 10 years, with different lines representing different search terms.]
Targeted research

- National Science Challenges
  - Targeted themes and projects
  - Major ‘challenge’ is the low total investment in research
Why invest in science?

1. Productivity and sustainable economic development
2. An evidence base for addressing key concerns, developing good public policy and ensuring a better informed public
3. Ensuring we have the skills in our workforce and society to become an innovation-led economy
Preventing Childhood Obesity

Problem-oriented
• Causes and correlates of disease
• Past orientation
• Reductionist approach
• Understanding the causes may or may not help with solutions
• Usually easier to perform

Solution-oriented
• Causes of improved health, reduced risks
• Future orientation
• Experimental approach
• Solutions need to be tested
• Usually harder to perform
The causes of obesity
Litmus test for research

1. Can you draw conclusions no matter what the result (positive, negative, null)?
2. Will the result change what you would do at a clinical, policy or public level?
‘Strategic Science’ (Kelly Brownell)

1. Policy relevant research questions
   - Preferably co-created

2. Collaborative research with end-users
   - Often end-users as co-investigators
   - Potentially using end-users’ data sets (Integrated Data Infrastructure)

3. Robust knowledge exchange systems
   - Links with policy-makers
   - Practitioner knowledge exchange networks
   - Advocacy organisations
Challenges of public health research

- ‘Public health is politics’
- Clash with commercial interests
- Disease ‘vectors’:  
  - Tobacco  
  - Alcohol  
  - Junk food
“Let me remind you. Not one single country has managed to turn around its obesity epidemic in all age groups. This is not a failure of individual will-power. This is a failure of political will to take on big business”
Adults: NZ is the third fattest in OECD after USA and Mexico

Source: OECD Health Data 2011; national sources for non-OECD countries.
Overweight in European adolescents

(If NZ used WHO definitions, the prevalence would be higher)
Plateau effect in prevalence rise in childhood overweight and obesity

US and UK

Australia
Comparative risk assessment rankings
Lim et al Lancet 2012

#1 risk factor in NZ & Australia

NZ burden 2010
- Poor diet 11.1%
- High BMI 8.9%
- Tobacco 8.6%

Adult high BMI
NZ overweight/obesity by ethnicity

Children 5-14y

%  

0 10 20 30 40 50 60 70 80 90 100

Asian  European  Maori  Pacific

Adults

%  

0 10 20 30 40 50 60 70 80 90 100

Asian  European  Maori  Pacific

O/weight  Obesity
Obesity increase by age group

% obese

Age (yrs)

= environmental influence

Obesity increase by age group

% obese

Age (yrs)

= environmental influence
What needs to be done?
NZMA: Tackling Obesity

- Policy briefing
- Top Ten recommendations
  - Government
  - Local government
  - Health professionals
  - Communities
Recommendations 1-5

1. Health professionals should take every opportunity to engage sensitively with patients who are obese, providing them with advice for healthy living and directing them to exercise and nutrition programmes as appropriate. Recognising and acting on obesity in childhood is of particular importance.

2. Community-based approaches to obesity, as well as nutrition and exercise programmes, should be expanded across the country. These approaches need to be complemented by policy and regulatory initiatives.

3. Greater protection from the marketing of unhealthy food should be afforded to children. This should entail a more stringent statutory regulatory regime that addresses all forms of marketing including product packaging and sponsorships.

4. The use of fiscal instruments in the New Zealand context should be evaluated as a means of influencing food consumption, with priority given to a tax for SSB.

5. A consistent and easy-to-understand food labelling system, preferably the traffic light concept, should be developed and implemented on the front of packaging to help inform consumers about their food choices. Restaurants and fast food outlets should be encouraged to develop visible calorie indicators.

Engage with & support patients

Community-based approaches

Restrict marketing to children

Tax on sugary drinks

Front of pack labelling
Recommendations 5-10

6. Food and nutrition guidelines should be introduced in school canteens and in all public services including hospitals.

7. Nutrition should be included as part of the mandatory curriculum in schools.

8. The licensing of fast food premises should be audited by local authorities, with a view to reducing the proximity of fast food outlets to schools and leisure centres.

9. Local authorities should work with public health officials to conduct health impact assessments of planning decisions to facilitate urban environments that support physical activity.

10. The concept of a health target around the provision of healthy living advice for pregnant women should be considered, eventually expanding this to all patients.

Healthy food: schools, hospitals

Nutrition in curriculum

Restrict fast food outlets

Urban planning for PA

Health target: advice in pregnancy
Benchmarking food policy progress

- 52 member Expert Panel
- 42 indicators:
  - Policy implementation
  - Infrastructure support
- Verified evidence of implementation
- Benchmarks: international best practice
- Rated implementation
- Prioritised actions
NZ Food-EPI

- Positives: international standard in 6
- Stronger infrastructure than specific policies
- Major gaps in implementation
  - Marketing to children
  - Fiscal policies
  - Comprehensive plans & funding
Top priorities (out of 34 actions)

1. Comprehensive plan
2. Targets
   - Childhood obesity
   - Population intakes Na, SFA, sugar
   - Food composition
3. Funding ($70m/y)
4. Restrict marketing to children
5. Healthy food policies
   - Schools
   - Early childhood settings
6. Health Star Rating food labelling
7. 20% excise tax on sugary drinks
Community-based approaches

- Important complement to policy/regulatory approaches
- *Healthy Families NZ* about to be launched
  - 10 areas in NZ
  - $40m over 4 years
  - Modelled on *Healthy Together Victoria*
- HTV arose out of overarching funding for Australian states/LGAs for obesity prevention
- Based on proof of principle from successful demonstration projects reducing childhood obesity
Healthy Families NZ

• Close links with Victoria
  – MoU, sharing materials, training, support etc
• Sites announced
  – Currently choosing providers
• High speed to implementation
  – Months rather than years
• Important opportunity for regions to seize
  – Political moment
  – HFNZ action at ground level (eg training, networks)
  – National components (eg achievement program, social marketing)
Victoria – a systems approach to prevention

- Using funding to strengthen prevention systems (~$1b over 9 years across Australia)
- Victorian health minister as a champion of government, community and personal action on healthy eating and PA
- A vision of sustained ‘activating systems’ approach – not projects
- Empower and fund local govt and communities
Key components of HTV

• Champions program
  – Mayors Club, Jamie Oliver, local leadership groups

• Achievement Award program
  – Quality assurance system, early progress results

• 12 sites for intensive intervention
  – Randomised pair selection of sites
  – >100 new staff on the ground

• Training and networks of practice

• Evaluation
  – Measuring how to activate systems and what the impacts are – especially on childhood obesity
The Full Prevention House

- Leadership & governance
- Information & intelligence
- Finances & resources
- Networks & partnerships
- Workforce development
- Health in all policies

Service delivery, programs, policies

High Level Policies

Political commitment

Specific actions – people and food & PA envs

System & capacity building blocks

Systems dynamics

Apply arrows everywhere
Implications for NZ and Otago

• HFNZ is an important opportunity to seize
• Sufficient resources in DHBs, councils, NGOs, HFNZ sites, iwi, and community groups for region-wide approaches
• Needs high level leadership to drive the challenges of re-orientation, engagement of many players, co-ordination of efforts, resource mobilisation, new thinking etc
• Could be packaged into building a Prevention System for the region
• Incorporate primary care
Conclusions

• Congratulations to the Edgar Diabetes and Obesity Research team
  – Look forward to their ongoing leadership in ‘strategic’, ‘solution-oriented’ research

• Challenges ahead
  – Insufficient research dollars
  – Implementation research
  – Battling the toxic tactics of ‘Big Junk Food’

• Opportunities ahead
  – Healthy Families NZ
  – Region-wide activation
  – Collaborations on the National Science Challenges