Public Health in an Age of Genomics

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Findings from an OECD / Genomics Network study of:

- "the drivers and criteria shaping application of genomics to public health in different national settings, and the barriers to implementation nationally and internationally"

- Looking at:
  - Stratified medicine
  - Infectious disease control

Methods

- **A small qualitative study of seven self-selected countries:**
  - **China**
  - **Finland**
  - **Israel**
  - **Luxembourg**
  - **Mexico**
  - **South Africa**
  - **United Kingdom**

Methods ctd.

- Country case studies, not comparative survey
- Questionnaires distributed by “country coordinators”: WPB members or invited experts
- Respondents: “individuals well placed to comment on national strategies for promoting genomics for public health”

Findings: stratified medicine

- All countries except South Africa
- Primarily research-led
- Driven by expectations of increased clinical and cost-efficiency of medical interventions, especially for chronic diseases

Findings: stratified medicine ctd.

- European countries see few barriers to research; other countries cite research funding and access to international research networks as barriers
- *All* countries see barriers to translation and implementation
  - Including lack of funding for translational research, healthcare reimbursement regimes, and lack of understanding among policy makers

Findings: stratified medicine ctd.

- Implementation seen to be principally a local / national matter, that depends on:
  - national health care systems
  - knowledge of local populations – especially national biobanks

- Some concern about international matters, e.g. regulatory and IP regimes – but this is surprisingly muted

Findings: stratified medicine ctd.

- **Pursuit of stratified medicine is tending to orient public health concern towards *national*, not international contexts and actions**

Findings: genomics for infectious disease control

- Scarcely discussed by Finland, Luxembourg – discussed in the UK chiefly in terms of assistance for the developing world

- China, Mexico, Israel: infectious disease control is a major concern – and for South Africa is the *only* focus of genomics for public health

Findings: genomics for infectious disease control ctd.

- These countries carry the heaviest burden of infectious disease – and controlling these is a national priority

- These countries are also the most concerned about infectious diseases that pose not just a national but a global threat
  - especially SARS and influenza

Findings: genomics for infectious disease control ctd.

- These countries also stress the importance of international collaboration for infectious disease control, both national and global, including:
  - research
  - data sharing
  - surveillance

Findings: genomics for infectious disease control ctd.

- **Pursuit of genomics for infectious disease control is tending to orient public health concern towards *international* as well as national contexts and actions**

Conclusions

- There is a divergence between
  - stratified medicine, with a primarily national focus
  - infectious disease control, including global diseases, which depends heavily on international collaboration

Conclusions ctd.

- and between
  - those countries that concentrate primarily on stratified medicine
  - those countries that also emphasise infectious disease control
- (though our data on this point need to be approached with caution)

Conclusions ctd.

- **International action to promote global public health might most usefully focus on infectious disease control, rather than stratified medicine**

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