Consequential Epidemiology and Essential Public Health Dentistry

Eugenio D. Beltrán-Aguilar
Simple interventions for complex diseases?

- “The magic bullet approach.” One size may not fit all, e.g., fluorides
- Contemporary approaches: genetics, -omics, -biomes
- How inequalities are created?
- “Non-biological” determinants of health
- “What we do NOW” (The art of making decisions in an imperfect world… provide services when therapeutic information is less than perfect)
Should the mission of epidemiology include the eradication of poverty?

Kenneth J Rothman, Hans-Olov Adami, Dimitrios Trichopoulos

Physicists seem to have escaped the old criticism that their work is impractical. Perhaps the criticism was blunted by technological innovations that rest on physical theory. Nevertheless, even astrophysicists, whose work seldom induces engineering breakthroughs, can now pursue knowledge for its own sake without fear of being badgered about the practical relevance of their work. What physicists have gained, however, epidemiologists seem to have lost. Accusations have been mounting that epidemiologists have abandoned their public-health mission of being “physician-scientist” to society in favour of studying the scientific arcana of disease causation. Smallpox could not have been eradicated without a clever, global strategy to contain it, and malnutrition rooted in poverty cannot be prevented without societal interventions that ease the burden of poverty or that address malnutrition directly.

The distinction between individual and societal applications of epidemiological knowledge are at the core of the new wave of criticism. The central complaint is that epidemiologists have focused on individual risk factors to the exclusion of broader societal causes of disease. Thus, wrote Shy, epidemiologists

“tell us that a lower fat content of the diet, a lower

...
Issues

- Epidemiology is too individualistic
- Epidemiologists need more moral and political fibre
- Too much preoccupation with causation
- Epidemiologists tepid on early tobacco intervention
- No focus on when an intervention is most effective
- What is the public health solution to poverty?
- All poverty is unacceptable. The biological path should not be ignored. Epidemiologists are not social engineers.
- Humanistic approach: no need to establish the health effects of poverty to know that society should try to eliminate it
An Argument for a Consequentialist Epidemiology

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Epidemiology is the study of the causes and distributions of diseases in human populations so that we may identify ways to prevent and control disease. Although this definition broadly serves us well, I suggest that in recent decades, our discipline’s robust interest in identifying causes has come at the expense of a more rigorous engagement with the second part of our vision for ourselves—the intent for us to intervene—and that this approach threatens to diminish our field’s relevance. I argue here for a consequentialist epidemiology, a formalization and recalibration of the philosophical foundations of our discipline. I discuss how epidemiology is, at its core, more comfortably a consequentialist, as opposed to a deontological, discipline. A more consequentialist approach to epidemiology has several implications. It clarifies our research priorities, offers a perspective on the place of novel epidemiologic approaches and a metric to evaluate the utility of new methods, elevates the importance of global health and considerations about equity to the discipline, brings into sharp focus our engagement in implementation and translational science, and has implications for how we teach our students. I intend this article to be a provocation that can help clarify our disciplinary intentions.
Caries in Children Interventions

What is a success?
How do we measure it?

Reachable short-, middle- and end-points
Within reasonable time
Using available and reasonable resources
WHO Global Consultation on Public Health Intervention against Early Childhood Caries

Bangkok, Thailand, 26-28 January 2016
Recommendations

- ECC case definition into WHO-ICD11
- Include 3-year-olds as index age in WHO Basic Methods
- Include non-cavitated lesions
- Report impact of ECC on quality of life
- Emphasize ECC prevention & control to health professionals
- Integrate interventions into the vaccination program
- Integrate WHO policies on reduce use of added (free) sugars
- Integrate ECC within NCDs (non-communicable diseases)
- Develop training packages for PHCP (primary health care professionals)
- Reinforce fluorides and SDF, sealants, ART/SMART/ITRs
- Promote Require evaluation of interventions, surveillance
Oral Urgent Treatment (OUT) for the emergency management of oral pain, infection and trauma 15

Preventing dental caries through Affordable Fluoride Toothpaste (AFT) 21

Managing dental caries through the Atraumatic Restorative Treatment (ART) approach 29

Basic Package of Oral Care

WHO Collaborating Centre for Oral Health Care Planning and Future Scenarios
College of Dental Science University of Nijmegen, The Netherlands
Taller de Capacitación

Proyecto SOFAR

Salud Oral y Factores de Riesgo

2013
SoFAR

Based on shared risk factors for NCDs, availability of useful interventions, and use of Primary Health Care Professionals (PHCP)

- Do, recognize, educate, intervene, refer
- Used by Ministries of Health in many Latin American Countries
- Train-the-trainer workshops
SoFAR

- Any health encounter is an opportunity for intervention. The earlier the better: vaccination schedule.
- Recognize normal from disease by non-dentists.
- Repeat health promotion and health prevention messages (in the field of dental hygiene).
- Use preventive interventions, i.e., varnishes.
- Refer for early treatment. Follow-up. Become an advocate for your patient.
- Tough at Ministries of Health in many Latin American Countries.
SoFAR: Limitations

- Does not include F-Ag compounds
- Local regulations on who does what
- Focus only on children
- No population impact, so far
- Continuity