TOWARD A TRANSLATIONAL EPIDEMIOLOGY OF RELIGION: Challenges and Applications

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The Center for Spirituality, Theology, and Health, Duke University School of Medicine,
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How do we get from population-health data on the risk or protective effects of religious identity & participation to real-world applications?

What do we do with all of these data?

Does any of this matter?
1) Translational epidemiology
2) Epidemiology of religion
3) Three types of translational epidemiology of religion
1. Translational epidemiology
Translational Research

- Term first used in the mid 1980s
- >1.5 million hits on Google Scholar

Practical application of:
- (a) scientific discoveries to
- (b) producing knowledge & solving problems

Referenced in relation to science & technology, engineering, education, biomedicine, & other fields
Translational Medicine

- Term first used in the 1990s

- >59,000 hits on PubMed

- Bridges from:
  - (a) preclinical (i.e., basic science, biomedical, bench, wet) research to
  - (b) clinical (D&T&P) applications

- Applies research “from bench to bedside” or “from lab to clinic”
Translational Medicine: Example

From bench . . .

Vaccine research
(D.A. Henderson, Johns Hopkins)

Smallpox eradication
(Bill Foege, Emory & CDC)

. . . to bedside*

*or village, in this instance
Established in 2011
Proposed by Dr. Francis Collins
FY 2022 budget = $879 million
Translational Epidemiology

- Term first used in ~2010
- >1,500 hits on PubMed
- Bridges from:
  - (a) epidemiologic research findings to
  - (b) the care of individuals & populations
- Applies research “from scientific discovery to population or community health”
Translational Epidemiology: Applications

Applications to Population & Community Health

- Knowledge about risk factors & prevention
- Contributions to vital statistics
- Planning behavioral interventions & programs
- Health services planning & policymaking
- Environmental health policies
- Innovative medical treatments
- etc.
EPIDEMIOLOGY: Definition

“THE STUDY OF THE DISTRIBUTION AND DETERMINANTS OF HEALTH-RELATED STATES OR EVENTS IN SPECIFIED POPULATIONS, AND THE APPLICATION OF THIS STUDY TO CONTROL OF HEALTH PROBLEMS.”

JOHN M. LAST, A DICTIONARY OF EPIDEMIOLOGY
Deconstructing the Definition of Epidemiology

- “Distribution”
  (descriptive epidemiology)

- “Determinants”
  (analytic epidemiology)

- “Application”
  (applied epidemiology)

• How much of this is out there, by PPT?

• What are its causes or antecedents or predictors?

• What do we do with this information to address (public) health issues?
Translation is not just about developing new treatments or interventions but also about communicating findings to the constituencies that can make use of them.
Applying epidemiologic findings on religion to address (public) health issues requires outreach to at least 3 populations, the “3 P’s”

Pastors

Physicians

Public health professionals

{We’ll come back to this shortly.}
2. Epidemiology of religion
Epidemiology of Religion: Resources

Handbook of Religion and Health

Harold G. Koenig
Tyler J. VanderWeele
John R. Peteet

RELIGION AND THE SOCIAL SCIENCES
Basic and Applied Research Perspectives

Edited by Jeff Levin
### Disease entity
- **Heart disease morbidity & mortality**
- **Hypertension & cerebrovascular disease**
- **Cancer morbidity & mortality**
- **All-causes mortality**
- **Self-rated health**
- **Pain & somatic symptoms**
- **Physical disability**
- **Depression**
- **Anxiety**

### Positive (salutary) findings for religion
- 47 of 64 studies (73.4%) pos. findings
- 55 of 87 studies (63.2%) " "
- 64 of 84 studies (76.2%) " "
- 92 of 116 studies (79.3%) " "
- 44 of 70 studies (62.9%) " "
- 50 of 118 studies (42.4%) " "
- 30 of 64 studies (46.9%) " "
- 317 of 459 studies (69.1%) " "
- 170 of 314 studies (54.1%) " "

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*Based on the first two editions of the Koenig et al. handbook.*
3. Three types of translational epidemiology of religion
## Translational Epidemiology of Religion: Three Types of Translation

<table>
<thead>
<tr>
<th>Outreach to . . .</th>
<th>Type of translation</th>
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</thead>
<tbody>
<tr>
<td><strong>1) Pastors</strong></td>
<td><strong>Pastoral translation</strong></td>
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<td>Application to encounters within medical care facilities, as well as privately, e.g. spiritual counseling</td>
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<td><strong>2) Physicians</strong></td>
<td><strong>Clinical translation</strong></td>
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<tr>
<td></td>
<td>Application to hospital, outpatient, &amp; primary care medical encounters</td>
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<td><strong>3) Public health professionals</strong></td>
<td><strong>Public health translation</strong></td>
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<td></td>
<td>Application to HPDP, public health policy, environmental activism, &amp; global health development</td>
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<tr>
<td>Issues &amp; Challenges</td>
<td>Recommendations</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
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<tr>
<td>• How to communicate findings to frontline pastoral professionals</td>
<td>• Detail implications of population-wide findings for individual patient encounters</td>
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<tr>
<td>• How to provide information useful to spiritual counselors</td>
<td>• Discuss relevance of findings to the faith lives of people facing physical &amp; mental health challenges</td>
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<td>• How to marshal evidence supporting CPE &amp; hospital chaplaincy in an era of cutbacks</td>
<td>• Greater focus on studies of clinical-epidemiologic &amp; health services outcomes</td>
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## Clinical Translation

### Issues & Challenges
- How to define research questions that make biological sense
- How findings are worded
- How findings are made relevant
- How to identify meaningful follow-up research

### Recommendations
- Seek out collaboration with clinicians or bench scientists
- Use correct medical terminology
- **Spell out clinical implications** (i.e., for D, T, or P)
- **Consult with clinicians before proposing new research agendas**
Public Health Translation

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<th>Recommendations</th>
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<td>How to identify priorities for research on risk &amp; protective factors</td>
<td>Focus on outcomes responsible for the greatest proportional morbidity or mortality</td>
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<tr>
<td>How to inform behavioral change &amp; other HPDP interventions</td>
<td>Work with congregational &amp; denominational committees to establish faith-based programs</td>
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<tr>
<td>How to inform public health &amp; environmental policymaking</td>
<td>Outreach to legislators, NGOs, think-tanks, media contacts, &amp; civil-society sector</td>
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Ethics of Translation: Questions

- Is it unethical not to attend to translation?  **YES** *(otherwise why do the work?)*

- Are there consequences to failing to adequately translate findings?  **YES** *(study findings won’t be applied or will be buried)*

- Are there consequences to mis-communicating findings to intended audiences?  **YES** *(research may end up wasted or doing harm)*
Findings from population-health research on religion are of greatest use only if they can be communicated to pastors, physicians, and public health professionals for purposes of translation.
“It is the responsibility of those of us involved in today’s biomedical research enterprise to translate the remarkable scientific innovations we are witnessing into health gains for the nation. . . . At no other time has the need for a robust, bidirectional information flow between basic and translational scientists been so necessary.”

Elias A. Zerhouni, M.D.
Former Director of the NIH