Geographic Information Systems: Finding the Spatial Parameters of Public Health

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Presentation Overview

- What’s Public Health?
- Public Health Geographic Information Systems (GIS)
- Future Issues in Brief
- Topic in Focus: Community Based Participatory Research (CBPR)
What’s Public Health?
“Public health is the science and the art of preventing diseases, prolonging life, and promoting physical health... ”
What’s Public Health?

“through organized community efforts and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health ...

http://www.sph.tulane.edu/publichealth/bsph/images/public-health-hands_1.jpg
What’s Public Health?

“... the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of diseases.”
Public health is the science and the art of preventing diseases, prolonging life, and promoting physical health through organized community efforts and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health … the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of diseases.”

Charles-Erward Amory Winslow, 1920: “The untilled fields of public health” in Science 51(1306)
Public Health GIS

Dr. John Snow:
**Father of Epidemiology**
Cholera Outbreak
Soho London, 1854

Investigated the epidemic with spatial epidemiology:

1) Ecological scale
2) Case/control reasoning
3) Statistical analysis
Public Health GIS

What’s Public Health?  Public Health GIS  Future Issues  Topic in Focus
Public Health GIS

- Research
- Disease surveillance
- Risk analysis
- Health care planning and policy
- Demographics
- Public outreach communication
Public Health GIS: Disease Surveillance

Public Health GIS: Risk Analysis

Public Health GIS: Health care planning and policy

Public Health GIS: Public outreach communication

Future Issues in Brief

- **Patient privacy and confidentiality**
- **Representing human spatial scale**
- **Availability of spatially referenced health outcome data**
- **Comparability of spatial epidemiological analyses**
- **Differences in spatial resolution between data sets**
- **Intensive computational requirement of bio-statistical analyses**

http://www.esri.com/news/arcnews/winter0607articles/winter0607gifs/p6p2-lg.jpg
Topic in Focus: Community Based Participatory Research

Sustaining Arctic Observing Networks (SAON)

http://portal.inter-map.com/saon/#mapID=26&groupID=441&z=1.0&up=0.0&left=0.0
Topic in Focus: Community Based Participatory Research

Relational autonomy as a social determinant of health

http://www.reviewboard.ca/upload/project_document/EA0809-004_Traditional_Knowledge_and_Use_Study_Tlicho_Government.PDF
What’s Public Health?

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Thank You!

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