Making the Case for Informatics in Global Health

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Description
- Health Informatics: the scientific field that deals with the storage, retrieval, sharing, and optimal use of biomedical information, data, and knowledge for problem solving and decision making\textsuperscript{1}.
- Its application for improving global health and achieving health equity for all people worldwide\textsuperscript{2} can be called Global Health Informatics.
- Informatics has the potential to improve healthcare quality and enable the next generation of biomedical and translational research through the use of technology and complex analytics.
- We present example informatics methods, infrastructure, and projects undertaken by the Department of Biomedical Informatics, College of Nursing, and Informatics faculty in the Center for Clinical Translational Sciences.
- Generalized methods and infrastructure developed at the University are applicable to Global Health and under-resourced settings.

Informatics Infrastructure: Studying the Environment

- **Exposure**
  - Quantity of Air Pollutant, Duration, Frequency, Person and Biological Characteristics
- **Selection of Relevant Sensor Data Sources**
- **Modeling for a High Spatio-temporal Grid**
- **Characterizing Uncertainty**
- **Data Integration to Support Ease of Use**

Air Quality Sensors

- PRISMS Big Data Integration Architecture\textsuperscript{5}

300 million children live in areas where outdoor air pollution exceeds international guidelines by at least six times.
- Around 2 billion children live in areas that exceed the World Health Organization annual limit for fine particles (PM2.5) of 10 μg/m\textsuperscript{3}
- Air pollution is linked with 1 out of every 8 deaths globally.
- In 2012 around 600,000 of these were children under 5 years old.
- Almost one million children die from pneumonia each year, more than half of which are directly related to air pollution.

References

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