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Spatial Health – an Australian focus and request for international interest

Background:

In the field of health, considering space and geography in research or operations is not a new concept. The search for relationships between disease and the various contributing factors has always considered the location of events as part of the study. A well-quoted public health example is provided by Dr John Snow's cholera work in London in 1854.

The challenge today is to ensure that the significant progress in spatial information and technologies is used to its full potential to improve the health of all Australians and to best inform policy formation at local, state and federal levels.

Recent developments in spatial databases, interoperability and computational capabilities have improved the efficiency of gaining access to the wide range of disparate information required for decision making in the health field. Web technologies also provide far greater facility to point of truth data and global access. As a result, spatial analysis techniques have also advanced allowing new relationships to be identified.

Almost every aspect of health care can be enhanced through the application of modern and future spatial technologies, and this is being implemented in Australia in a few important areas. But the developments tend to be project based and lack national coordination.

Indeed, some developing countries have a higher uptake of spatial technology to track infectious disease than in Australia. Recent examples include monitoring the dispersion of Avian Influenza (Bird Flu) in Asia and GIS is helping manage the treatment of people in Africa living with HIV.

Examples from developed countries who have embraced spatial technology within health organisations, in particular the USA, highlight the importance of considering "place". The applications range from within body mapping of disease pathways and tracking patient movement within hospitals through to monitoring changes in disease patterns at the population level.

Australian Status

There is no national coordination of precisely geocoding health records. Organisations and states differ in the rigour and detail recorded. For example, there is no *nationally articulated* spatial database of health service providers or GP locations. In cases where spatial analysis has been used in specific projects the benefits have been far reaching

and all stakeholders supportive of its capability to both improve accuracy of disease estimates, allocation of resources and communication between all players.

Numerous barriers have prevented spatial technology from been incorporated as a core part of the business model for health. Information Technology professionals within Health Departments have limited knowledge or awareness of the advantages spatial technology can bring to their organisation. It has also been difficult to attract expert spatial data analysts; those who need to understand impact of risk factors and other socio-economic factors as well as understand epidemiological statistical techniques and when to apply them. Without such leaders within health agencies, significant investment into spatial infrastructure and training will continue to be limited.

There is a current interest in Australia to develop the area and use of spatial analysis in health and we are interested in establishing dialogue and collaborating with other international bodies to develop this area. Record linkage methodologies will provide an important foundation for this work.