



NATIONAL INSTITUTE OF CLINICAL STUDIES LEADERSHIP PROGRAM

Improving the effectiveness of doctors using evidence through electronic decision support

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Electronic decision support systems can provide clinicians with ready access to electronically stored medical evidence which can be compared with specific patient data to aid decision making in clinical settings.

These systems can incorporate evidence-based guidelines, protocols and other recommendations for care, and have the capacity to support improved adherence and treatment outcomes for patients. It is therefore important to understand the information needs of clinicians and develop electronic decision support systems (EDSS) that meet these needs.

NICS Research Fellowship 2004-2006

Dr Vitali Sintchenko was awarded a NICS Research Fellowship 2004-2006. This two-year half-time Fellowship enabled Dr Sintchenko to work with colleagues at the Centre for Health Informatics at the University of New South Wales to develop a project to evaluate the information needs of GPs across Australia and develop recommendations to improve uptake.

The project comprised:

- systematically reviewing the literature on the effectiveness of EDSS as a means of improving clinical decision making
- surveying GPs across Australia, exploring their information needs and preferences with respect to clinical decisions using three case studies: community acquired pneumonia; herpes simplex virus assessment; and genetic susceptibility to breast cancer, and
- identifying specific tasks and “windows of opportunity” during the continuum of disease when electronic decision support would have the greatest potential to improve decision effectiveness.

Key messages

- A ‘one size fits all’ model for electronic decision support systems doesn’t fit in general practice. The information needs of GPs differ depending on the different care model i.e. chronic care vs acute care.
- Task specific variables in information seeking and processing improve decision making as well as the rate of sustainable adoption in the clinical environment.
- Electronic decision support systems improve adherence to protocols and the treatment outcomes of acutely ill patients in hospital settings, especially where high

level evidence is provided but they are less effective in changing doctors' performance or health outcomes in primary care.

- The type of decision task (acute care, chronic care or preventive care associated) and the functionality of clinical decision support (passive guidelines, interactive electronic guidelines, patient-specific risk calculators) are likely to influence the impact of the system on patient outcomes.
- Systems that target preventive care decisions (eg risk calculators for breast cancer) generally have a higher rate of adoption.

Future directions

Dr Sintchenko plans to play a key role in the emerging field of communicable disease informatics. He will use the knowledge he gained through his NICS Research Fellowship to set up a multi-disciplinary group focusing on local and international collaborative programs in the detection, monitoring and control of infections with epidemic potential.