

Melbourne 19 August 2013

MEDIA RELEASE

INTERNET TECHNOLOGIES MAY BE KEY TO TREATING 'FASTEST GROWING EPIDEMIC IN HUMAN HISTORY'

Study suggests

As diabetes looms as a runaway epidemic in Australia, a Monash University study suggests that Internet technologies may be key to overcoming this challenge to our healthcare system.

The study monitored 577 diabetes patients over 14 months. It showed significant improvements in quality of care and clinical outcomes for patients whose care was supported by an internet-based care management service called **cdmNet**. The study is published in the Medical Journal of Australia issue of 19 August.¹

cdmNet assists General Practitioners (GPs) and patients to manage chronic diseases and other illnesses. Using **cdmNet**, any member of the patient's care team can access the patient's health record and care plan, including the GP, specialists, allied health, pharmacists, and the patient themselves. They can do this from anywhere, anytime, while maintaining data privacy and security. Everyone on the team knows what everyone else is doing, all the time.

The results of the study show that 80% of patients on a care plan created and managed using **cdmNet** were regularly reviewed and followed up compared with national figures indicating less than 20% follow up of (non-cdmNet) patients.

Furthermore, of those patients who received regular reviews, 85% adhered to best practice care compared with 59% otherwise.

Comparing patients before and after the use of **cdmNet**, significant improvements were observed in

- HbA1c*, the surrogate measure of blood glucose levels, fell from a mean of 8.4% to 7.4% for patients with an initially high HbA1c
- Lower total cholesterol (4.6 to 4.3 mmol/L); and
- Lower LDL (bad) cholesterol (2.6 to 2.3 mmol/L)

The greatest improvements were in patients who had regular reviews of their care plan.

Professor Michael Georgeff, CEO of Precedence Health Care, the company that developed **cdmNet**, said the study suggests that improvement in clinical outcomes is related to the level of coordination among the care team and with the patient. It also indicates that patients are more likely to adhere to their plan when it is regularly reviewed and followed up by the GP and the care team.

“How to put this into practice is the challenge. GPs’ waiting rooms are full of people with a chronic illness. Trying to keep track of what everyone is doing or not doing places a huge burden on GPs and practices, especially when communications among the team are limited to fax, telephone tag, and hand delivery of patient information.

“Without the use of advanced Internet and mobile technologies, one simply cannot achieve the level of coordination and follow up needed for these patients.

“More than seven million Australians have a chronic disease, costing the health care system more than \$70 billion per year. The losses to the economy through reduced workforce participation rates and productivity are more than \$8 billion per year. Diabetes alone accounts for nearly a quarter of avoidable hospitalisations and 9% of deaths.

“It will be impossible to maintain a sustainable health care system without the use of these technologies,” Professor Georgeff said.

For GPs on the front line who have adopted **cdmNet** as a patient management tool, the results speak for themselves. Dr Tim Denton, GP in Anglesea, Victoria and chair of the Barwon Medicare Local, said: *“Since using **cdmNet** for ensuring quality of care, we have not had any amputations, strokes or progressive retinopathy in our patients with diabetes. People have fewer complications, are living better lives and living longer.”*

Professor Paul Zimmet, AO, Director Emeritus at the Baker IDI Heart and Diabetes Institute and Adjunct Professor at Monash doesn’t hold back on the level of concern he holds for the “rise and rise” of diabetes in Australia.

“Diabetes in the 21st century is the equivalent of cholera in the 19th century and HIV/AIDS in the 20th century. During this millennium, diabetes is well on the way to cementing its place as the fastest growing epidemic in human history. And the situation in Australia is daunting both from the personal cost to individuals for medical and support care and the economic cost to the nation due to reduced national productivity as type 2 diabetes is now affecting the workforce age group and even children and adolescents.

“In Australia, there are at least 1.5 million known cases of diabetes and a similar number with pre-diabetes. Moreover, for every diagnosed person with diabetes, there is likely to be one undiagnosed case. So, we are looking at potentially more than 4 million people, either with diabetes or who are at risk. It is possible therefore that some 20% of the Australian population are affected by diabetes in some way.

“The medium to long-term answer, of course, is prevention. But, in the meantime, to reduce the burden of this epidemic, people with diabetes require comprehensive support and care from a whole range of allied health professionals along with GPs and specialists. It is a unique healthcare challenge and its treatment is best administered through a management plan involving a complete care team.

“Web-based tools appear to enable this kind of care more easily and, as the Monash study indicates, clinical outcomes are worthwhile and likely to reduce the burden of the sometimes devastating complications of diabetes.

“Diabetes is potentially the greatest epidemic in the history of world. By 2020, the condition will bankrupt the economies of many nations unless urgent action is taken,” Professor Zimmet added.

For further information

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ADDITIONAL INFORMATION

Blood Glucose levels

* For diabetes patients, it is important that their HbA1c (the surrogate measure of blood glucose levels) be less than 7% (or 53 mmol/mol). So if it is above 7%, we want to reduce it, but if it is under, there is no need to reduce it further (in fact, it could be bad to do so). The study showed that those patients whose HbA1c (blood glucose level) is initially (i.e. prior to using cdmNet) above 7% (i.e., in the "bad" range) reduced their HbA1c from an initial mean of 8.4% to a mean (after 13 months on cdmNet) of 7.4%. This is a large overall improvement in what is a key measure for diabetes.

cdmNet

cdmNet is a web-based service that assists General Practitioners (GPs) and patients manage chronic diseases and other illnesses. Using **cdmNet**, any member of the patient's care team can access the patient's health record and care plan, including the GP, specialists, allied health, pharmacists, and the patient themselves. They can do this from anywhere, anytime, while maintaining data privacy and security.

cdmNet helps manage the patient's care by creating a best practice care plan suited to the patient's needs, then tracking the care of the patient according to that plan. It sends reminders to everyone on the care team, including the patient, notifying them of interventions and actions that they need to take. Progress notes and alerts are shared across the whole care team. Everyone on the team knows what everyone else is doing, all the time.

Professor Michael Georgeff

Professor Michael Georgeff is CEO of Precedence Health Care and Adjunct Professor in the Faculty of Medicine, Nursing and Health Sciences at Monash University. He has been at the forefront of software innovation for over 30 years. He was previously Program Director at SRI International (USA). In 1988, he was invited to return to Australia by the Prime Minister, Mr. Bob Hawke, to set up the Australian Artificial Intelligence Institute. During this period, he and his team created the first "intelligent software agents", applying these to the control of NASA's space shuttle.

Professor Georgeff is a thought leader in the application of information technology to healthcare. He was the e-Health advisor to Deloitte for Australia's National e-Health Strategy. He is a founding member of the Australian National Consultative Committee on e-Health and a member of the Health Informatics Society of Australia. He is a Fellow of the American Association for Artificial Intelligence and a Fellow of the Australian Computer Society. In 1990, the Bulletin proclaimed Professor Georgeff one of Australia's "national assets".

ⁱ Wickramasinghe, L., et al, "Impact on diabetes management of General Practice Management Plans, Team Care Arrangements and reviews", Medical Journal of Australia, 19 Aug 2013