

How a real time clinical data retrieval system might be applied to a tobacco cessation program

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We all live in a community or society, and in health care we work within a macro-organisation in that society, in this case the hospital. The microsystem is a unit that functions within the macro-organisation to affect patients on the individual and population level. Patients are at the centre of this society and function inside and outside of the health care microsystem in order to sustain themselves.

The use of real time data collection and transfer in the microsystem of the clinical environment can be a very effective tool within the health care system.

This real time use of information in our microsystem at the Dartmouth-Hitchcock Medical Center plays a unique role in the delivery of health care, and introduces an intervention model that can be used effectively to help those involved desist from smoking. We believe the microsystem model in which technology (touch pad computers) is incorporated provides a new paradigm for overcoming the current barriers for microsystems to be successful.

Using real time clinical data, we are able to: improve the quality of care at the patient and population level; measure our outcomes/improvement; evaluate the program's ability to effect change over time, and make changes in the program over time; effect continuous improvement; and use technology within the microsystem to reduce the burden of data collection.

We reduce the burden for the patients with friendly, less time consuming surveys that are responsive to the patient's needs. We reduce

the burden for the staff by eliminating data entry or coordinating paper forms, and we reduce the burden for caregivers and administrators by providing information in useful summaries which are immediately available to the patient and referring physician.

This microsystem introduces technology (touch pad computers) into the system as part of the process. A clinical data system was constructed for real time and longitudinal analysis using touch screen technology. Reports are automated and meaningful data are readily available to care providers, patients, and management. When a patient enters the system at Dartmouth, they are encountered as in any centre, without interfering with normal practice patterns. The difference with the computer touch pad is at that interface, and the patient controls it. This process enhances the physician/patient encounter, speeds the feedback to the primary care physician and employer, allows for real time and longitudinal program evaluation/benchmarking, and incorporates outcomes analysis into daily practice.

In summary, we are able to bring technology into the patient arena and, most importantly, to the benefit of the patients. Such a program has broad application, and the area of smoking cessation is no exception. We are able to provide interactive customised reporting, benchmarking, and longitudinal assessment. It is our belief that bringing the technology of the computer into the clinical practice setting will more readily effect change and reduce the burden of disease related to smoking.

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