Making the Paperless Transition: Marshfield Clinic’s Cattails EHR
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Abstract
CattailsMD, the internally developed Electronic Health Record (EHR) at Marshfield Clinic in Wisconsin, is one of the first electronic medical records systems in the country, with coded diagnoses back to 1960. It also represents a system that had evolved from mainframe “green screens” to a tablet-based suite of tools that support a virtually paperless healthcare workflow. CattailsMD is the first internally developed EHR to be certified by the Certification Commission for Healthcare Information Technology (CCHIT). CattailsMD includes: an internally developed coded medical terminology called MECCA; workflow management tools including charting and coding; user-friendly dashboards; care management and preventive services capabilities; digital “ink-over” forms; customizable templates using voice, script or typing; and highly secure remote access supporting alternate devices (laptops, tablets and PDAs). To date, CattailsMD is deployed on over 2000 wireless tablets and is accessed by over 11,000 additional users throughout Central and Northern Wisconsin and Upper Michigan.

Introduction
As EHRs become more widespread, many organizations are finding that eliminating the paper chart is proving much more difficult than originally envisioned. The Cattails MD system at Marshfield is a system designed specifically for a chartless environment\textsuperscript{1}. The demonstration will discuss some of the design considerations when addressing the “last mile” to a paperless environment.

Background
Founded in 1916, Marshfield Clinic is one of the largest comprehensive medical systems in the nation. This 750-physician, 6000-employee multi-specialty group practice provides patient care, research and medical education across 43 Wisconsin locations. Marshfield Clinic has made a significant commitment to internal development of its information systems over the past 40 years\textsuperscript{3}. Physicians have collaborated with affiliated hospitals, clinics and an in-house development staff of over 300 IT professionals to develop systems.

This dynamic electronic toolset helps to improve quality of care, patient safety and practice efficiency in a large health care network that includes clinics, hospitals, research facilities, pharmacies, a regional referral laboratory and a health maintenance organization.

The demonstration will focus on features of the CattailsMD Suite that will be of interest to system developers and researchers, including:

- Design features that support the variable work flows of multiple specialties spanning different organizations and users (physicians, physician assistants, nurses and medical assistants);
- Design changes that were needed to make the applications “tablet friendly”. Thick-client vs. Thin-client trade-offs in a tablet environment.
- The role of tablet computers in supporting mobile healthcare workers.
- The need for multiple system redundancies when there is no paper backup.
- The use of digital “ink-over” forms, scanned documents and images and structured data entry in optimizing the tablet-based workflow.

Conclusion
The lessons learned by the Cattails MD development team will be instructive to any institution attempting to finally eliminate the paper medical chart.

References