Leveraging Web-based Team Collaboration Environment for Clinical, Research and Education in a Tertiary Care Academic Hospital

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BACKGROUND:
Hospital Intranets have been there for a long time but they fail to offer collaborative tools required to manage complex information needs of modern hospitals. Microsoft® Windows® SharePoint™ Services (WSS) and Oracle Content services are collaboration environments that enable teams of workers to more easily access and share information than with traditional file servers. WSS is viewed as a tool only suitable for the corporate environment. However, the tool is much more flexible and can be leveraged by academic medical community to help address clinical, research and educational needs.

SETTING:
Cleveland Clinic Foundation, a tertiary care academic hospital has been utilizing the WSS since 2002. It was originally deployed as an alternative for a project team to share documents without the limitations of a shared drive on computer network. SOLUTION:
In this paper, we describe our experience in developing novel clinical, research and educational applications created from WSS and its Web Parts. The details of usability and evaluation results will be presented at the poster session.

As a survey tool: Among the many features that WSS offers, is a survey tool. The use of Active Directory at our Institute allows for accessing the full range of SharePoint services, including group mailing lists. This obviates the need for individual emails since surveys can be send in group to housestaff, faculty, nurses for 360 degree evaluations.

As a Learning Management System: We have customized WSS to serve as a low-cost learning management system. This has been possible because WSS has built-in support for providing secure access based on user roles (teacher, student, admin etc.), search of repository of learning materials, announcements, news, task lists, discussion groups and calendar applications. These key applications can be integrated with digital dashboards and Web parts, to create portals with personalised content for students, teachers, and administrators.

As a web-based patient signout system: By customizing the “List View” Web Parts, we have been able to develop a web-based patient signout system for Internal Medicine Department. This application has become a part of routine workflow for clinicians, incurring an average of 13,000 total hits/month. Use of active directory, role-based access and custom programming code has allowed us to address many confidentiality and security issues.

As a Research Project Portal: We have successfully leveraged WSS for collaborative grant write-ups. Document management facilities help keep track of version control, and publishing major revisions. Project and grant submission deadlines can be displayed in the calendar and notifications of any additions, modifications or deletions of document can be immediately emailed to the key investigators. Further, role-based access allows for complete access to principle investigator while limiting access of confidential information (budgets etc.) to other personnel. The portal has been averaging around 330 hits/month with peaks on manuscript submission days.

As a Human Resource (HR) solution: We have developed and hosted a series of self-service forms such as travel expense report, check request form, application for meeting attendance etc. SharePoint site also provides free customized application templates for vacation schedule management, change management, employee timesheet, help desk dashboard and many others.

Other uses: An internet search on SharePoint based healthcare applications reveals that WSS has also been utilized as an information-gathering program for Patient Documentation Record. Currently, we are also exploring the use of WSS and InfoPath as an electronic data collection tool to support clinical trials at the point of care.

CONCLUSIONS:
Our experience with Sharepoint Portal suggests that it is a very flexible solution that can be successfully harnessed by academic medical community. Furthermore, since many hospitals have already invested into WSS for operational needs, leveraging WSS for academic needs will provide an incremental value to the hospitals without any added cost.