

# MEDICAL DEVICES

A QUARTERLY EBULLETIN FROM THE PEOPLE WHO BRING YOU THE MEDICAL DEVICES EXECUTIVE MINDXCHANGE

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## From the Trenches: Hospital Devices Leave Room for Enterprise

From my observations, hospitals have historically approached medical device connectivity projects as a tactical issue. Until relatively recently, technology alone could be used to solve the connectivity issue (i.e. getting data from point A to point B) with little to no negative impact on clinical workflow. Further, the scope of connectivity projects has been mainly departmentally focused, and deployments have been relatively basic. By basic, I refer to projects that have focused on connecting one or two bedside medical devices to a single CIS application or EMR.

But requirements for connectivity have been changing and in some not so subtle ways. Many hospitals are now starting to look beyond departmental connectivity solutions (i.e. the tactical approach) and are now evaluating their enterprise needs. Looking at an entire healthcare enterprise requires a more comprehensive evaluation of the healthcare organizations' goals and requirements – and this requires more strategic thinking and planning in a number of areas. Hospitals that attempt to extend their departmental connectivity strategies and technology platforms in ad-hoc fashion, will hit the wall at some point. And in the end, those hospitals will likely spend a lot more time and resources (not to mention money) unwinding what they have in place in order to achieve the level of results

that most hospitals are looking for.

In the past, patients on general medical-surgical floors did not have biomedical devices. But over the past five to ten years, the acuity level of general ward patients in many hospitals has increased significantly. Now these patients often have one or more IV pumps and patients are always at least periodically monitored via spot check monitoring every 2-4 hours. And there is a shift towards continuous monitoring in the general ward, mainly to provide caregivers an early warning of rapid decline in state. Rapid response teams are being formed in many hospitals as a means for dealing with early intervention to prevent patient crashes. In all of these cases, the connectivity requirements are distinctly different as compare to a high-acuity (i.e. ICU) environment.

More hospitals recognize this situation, and as a result they are assessing connectivity requirements across their entire healthcare enterprise. In addition to increasing acuity levels across all care areas, hospitals are also thinking about some of the challenges around their EMR. Many institutions have one main EMR vendor but many of them have to also deal with the fact that they have several “point EMR solutions” in specialty areas. For example, many times a hospital will have a different vendor in the OR for the anesthesia charting application, and

another in the ED for emergency department management. This adds both complexity and confusion for the hospital trying to evaluate their medical device connectivity options, mainly because their departmental applications often come with their own niche solution for solving device connectivity in the specialty care environment.

There are three main use models or categories of medical devices and this has an impact on the connectivity solution and workflow.

**Category #1** includes the fixed devices – such as anesthesia machines in the OR, or a patient monitor mounted to the wall in a patient's ICU room. These devices are not going anywhere, so managing connectivity tends to be slightly easier (sometimes via networks gateways).

**Category #2** includes devices that can move from patient to patient periodically, but once moved, they remain with the new patient until he or she is transferred or discharged. These would be devices like patient-worn telemetry, IV pumps and ventilators.

**Category #3** is transient devices that come and go, moving from patient to patient frequently. Unlike categories 1 and 2, these devices could contain data for more than one patient. Examples of these include POC blood testing devices and vital signs spot check monitors used on general medical-surgical floors.

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Hospitals are also recognizing workflow and patient safety implications — i.e. data from a medical device going to the wrong patient's record, or alarms from a device not getting to the appropriate caregiver. Perhaps the largest area for potential gains in both workflow and patient safety can be realized by implementing common methods (the

workflow steps) for managing the clinician interaction with medical devices, regardless of device type, make/model, category (as described above), or care environment. The process of managing patient ID and association to medical devices is one key area where standardization needs to be thought about and planned for.

#### **About the Author:**

*Brian McAlpine is Director of Strategic Products at CapsuleTech's Andover, MA office. He's been in health care for over 18 years, and has focused on medical devices, technology, and connectivity most of that time. Brian can be followed on Twitter at: [brianmcapsule](#)*