

**WORKSTATIONS ON
WHEELS: WHAT'S YOUR
TOTAL COST OF OWNERSHIP?**



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In today's tough economic times, hospital capital spending is under intense scrutiny. With many competing IT demands and priorities, return on investment (ROI) is often a decisive factor in evaluating IT initiatives. Total Cost of Ownership (TCO) is a key element in ROI calculations. Lowest cost does not equate to highest ROI.

Electronic Medical Records (EMRs) continue to drive healthcare IT spending. Virtually every hospital is acquiring or extending EMR capabilities, many focused on point of care (POC) solutions.

In measuring return on EMR investments, it is critical to factor in costs of mobile devices. While market shares of portable, hand held and in-room solutions are all growing, workstations on wheels (WOWs) remain the dominant hospital clinical mobile device form factor. Many WOWs are now moving from hallway use to the POC.

Bar-code-enabled Medication Administration (BCMA) is a high priority initiative for many hospitals. BCMA "forced" EMRs and enabling devices to the POC, spawning a new generation of hospital WOW acquisitions and vendor innovations.

Organizations acquiring WOWs today are increasingly cost-conscious. Yet savvy buyers recognize need for prudent investments in clinician adoption and WOW use at the POC. Hospitals armed with industry "lessons learned" recognize the critical role of POC mobile device adoption in optimizing EMR benefits and ROI.

TCO analyses include assumptions regarding device availability and life expectancy. WOW durability, battery performance and longevity are key performance factors. To be widely adopted by clinicians, WOWs must be continually available, 100% reliable, easy to maneuver and well supported. With robust EMR implementations, each user requires a dedicated device to achieve targeted productivity enhancements, patient outcomes and clinician satisfaction goals. This may conflict with IT “philosophy” and budget.

Most importantly, WOWs must be well integrated into new care models and redesigned clinician workflows. The relationship between processes redesign and IT benefits realization cannot be overstated.

Past WOW TCO estimates focused mainly on acquisition, repair and replacement costs. Hospitals often failed to account for “hidden” capital and operating expenses. WOW price doesn’t necessarily correlate to device performance. The “lowest cost” solution may, in the end, be the most expensive if it fails to meet rigorous demands inherent in continual clinician use. Under-spending on WOWs or WOW support can result in poor ROI.

In more progressive organizations, WOW support resembles a “medical device”—rather than hardware—model. Medical device-level support includes commitment to near real-time problem resolution and replacement of non-functioning WOWs. This level of support staff contributes to optimal adoption rates that generate EMR and device benefits.

Clear accountability should be assigned for preventive maintenance and infection control (cleaning and disinfecting) tasks. Preventive maintenance in proactive hospitals has shown to take approximately 2 FTEs per 500 WOWs including clinical engineering and IT staff. While spending on additional resources increases TCO, it is necessary to achieve WOW use that drives EMR benefits and ROI.

Although it's impossible to precisely estimate all direct and indirect costs associated with WOW lifecycle support, the following items should be included in TCO calculations:

1. WOW acquisition

- Hardware (cart, computer, attachments, servers, complementary IT, e.g. bar-code scanner, RFID, etc.)
- Software (security, operating systems, connectivity software, medication cabinet interfaces, etc.)
- Infrastructure upgrades (wireless network, facility costs, etc.)
- Executive, clinician and IT personnel costs (selection process)

2. WOW assembly, integration and testing resources (in-house and/or outsourced)

- Wide variation from “build your own” to “out of the box” solutions
- Each release of EMR and new IT can impact device performance

3. EMR configuration changes (if any)

- Varies by form factor and features

4. Implementation and Training

- Adoption depends on integration into redesigned clinician workflows
- Point of care IT requires change in care models (more “real time” charting)
- Training includes application use on targeted device with instructions regarding policies and/or procedures for battery management, disinfection, storage, etc.

5. Service and support

- Infection Control – typically housekeeping and nursing shared responsibilities
- Device and battery preventive maintenance – clinical engineering
- Cart and computer “repair and replace” services – IT
- Asset Tracking – often performed with complementary RFID tracking system (anti-theft and data security protection)
- “Medical devices” level support (<15min. response time / 24 x 7 support goals)

6. Battery replacement time – based on:

- Vendor battery technology and lifecycle
- Hospital clinician usage and user battery management

7. Disposal cost

The critical role of device adoption in achieving EMR benefit as well as device costs over a lifetime have been woefully underestimated across the industry. Current and future generation buyers of mobile and in-room solutions will need a broader yet more user-centric strategy and process-driven approach to device selection, implementation and support. Traditional hardware-oriented acquisition approaches are being replaced with more “clinical device” models aimed at integrating devices into clinician culture and workflow.

Conclusion

As the device market continues to mature and new technologies are introduced, devices will continue to evolve and become even more powerful and “clinician friendly”. While it is tempting, especially in hard economic times, to under fund clinical device initiatives, it is critical that hospitals’ budgets focus on clinician adoption and satisfaction goals. This includes investments in targeted clinicians’ informed involvement in device selection and implementation, adequate application training using selected devices(s) and provision of a sufficient number of continuously available, high performing and well-supported and maintained device solutions.

In empowering highly mobile clinician “knowledge workers” with ready access to more accurate, near real-time patient data, the hospital can reap substantial rewards – for the organization, its clinicians and, ultimately, the patients it serves.

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