

PACS upgrades can be a rocky road

By Frances Rylands-Monk, AuntMinnieEurope.com staff writer

September 12, 2017 -- Radiologists need to be early birds for optimal PACS upgrades, and this means voicing their frustrations with the current systems, getting a headstart, and communicating directly with suppliers in person rather than leaving it to managers, according to an experienced practitioner.

There should be no like-for-like replacements but a new approach to image exchange and archiving, noted Dr. Rizwan Malik, a consultant radiologist at the Bolton National Health Service (NHS) Foundation Trust in the U.K. He provided tips and guidance during the opening day of the Royal College of Radiologists' (RCR) annual scientific meeting, which takes place in Liverpool from 11 to 13 September.



Dr. Rizwan Malik from the Bolton NHS Foundation Trust.

The National Program for IT provisioned PACS throughout the NHS in England via a series of Local Service Provider (LSP) contracts, he explained in an interview with *AuntMinnieEurope.com* before the congress. Given the financial constraints of the time, not every facility would have been able to afford PACS without this scheme, but these systems are now approaching obsolescence and hospitals need to upgrade with an enterprise image archive (or vendor-neutral archive, VNA) and enhanced workflows in mind, not simply with slight improvements to existing PACS.

Original LSP PACS implementation brought some disadvantages, Malik said. Hospital IT services were not involved with PACS, leading to frustrations of round-robin negotiations with suppliers even when there was local technical expertise to deal with server-related issues.

Furthermore, there was little interest from radiologists who left interaction with suppliers in the hands of the PACS managers.

"This lack of engagement has done little to push suppliers to innovate and improve systems and this has held back the development of solutions for some years," he said. "Sitting down and chatting on your own terms can be helpful. As a chest radiologist, one of my complaints with the existing system was that I couldn't compare coronal images side by side. When I told this to a vendor, he started laughing; the company in question had already fixed that particular problem."

Tips for success

Reasons to change PACS may include the need to improve image sharing, the

possibility of leveraging savings from a reprocurement, or a transformation in organization such as the creation of regional clinical pathways or hospital mergers. Furthermore, PACS needs to evolve to extend outside of radiology, in line with the current trend toward the creation of a single medical image archive.

While no procurement process will be easy, Malik said the need to start the process early and engage all stakeholders from the beginning is of paramount importance. This means bringing together IT staff, experienced PACS managers, clinicians, finance and procurement personnel, multidisciplinary team coordinators, and even the incumbent supplier, who might appreciate the feedback and then up its game to provide the solution needed.

PACS or VNA procurement teams will also have to be clear on the scope of their mission, Malik said.

"Teams should envisage a VNA for a multisite or multispecialty infrastructure, supporting, in time, other disciplines including cardiology, digital pathology, alongside radiology, among others. They should also consider whether RIS replacement falls in or outside of the procurement scope," he said.

The Greater Manchester procurement project, for instance, has chosen to exclude RIS, opting instead to review this separately afterwards. This safety net will allow for a degree of stability during the transition period, he noted.

Do's and Don'ts

Radiologists must become the informed customer, and they should specify what functional and technical requirements they have, as well as the need for quality and user-friendliness, while remaining generic.

"Avoid using labels such as PACS, VNA, or RIS. It's all fluid these days as these suppliers all try to muscle in on each other's territories. Instead, focus on desired outcomes, usually through providing a context. Clinical scenarios can help suppliers understand your needs and make discussion useful," Malik said. "At the same time, don't overspecify your questions."

For example, procurers should not suggest web-based solutions that work on specific browsers. Given that solutions may be implemented two years later, default current browsers may have changed, leading to further costs to update the solution for new browsers. Nor should they lead suppliers to answers by hinting at solutions based on potentially outdated ways of working with older systems.

"Stay clear of asking 'Can you do?'-type questions. They will likely say yes to each of your suggestions,

Do's and Don'ts

Do's:

- Engage all stakeholders, start early
- Include incumbent supplier in process
- Challenge R&D, state problems
- Think big: VNA versus like-for-like
- Provide scenarios
- Consider workflows: teaching, multidisciplinary teams, discrepancy, audits and analytics
- Be transparent
- Visit demonstrations and sites, vary interaction

even if their method is clunky and inefficient. They should solve the problems you pose them independently. Don't 'solutionize' for them," he said.

Malik started Bolton's procurement process locally in March 2015, but 12 months later this escalated to a regional process for Greater Manchester that is still ongoing. The procurement team provided 12 clinical scenarios that needed improved solutions.

The challenges included how staff surplus at one network hospital might solve an understaffing problem at another through homeworking or insourcing managed by the system. The team also wanted a system in which radiologists could use spare time in their hotel rooms to catch up on the reporting backlog while they were away at conferences.

Another scenario involved the need to make a patient's history with notes and images available to all hospitals at all sites within the group. Allowing cases to be channeled automatically to multidisciplinary team (MDT) meetings across different hospitals in the region via videoconferencing was a problem posed to suppliers.

Open discussion

Meaningful exchange with suppliers will involve challenging them, Malik said. When exploring the market, equitability and transparency are advisable; not every supplier needs to be contacted, but procurement teams should use logic and validated benchmarks such as Gartner scoring to justify why it engages with some groups and not others. Furthermore, teams should vary their interactions.

"Go to demonstrations and presentations, organize roundtable discussions where suppliers can propose ideas, particularly with the research and development personnel rather than the sales team," Malik noted, pointing to one event to which he invited several suppliers at the same time and which, despite their initial reluctance, they afterwards lauded as an innovative and productive meeting. "Most importantly go and see systems at work in live clinical environments. Only by seeing live demos and visiting sites will you understand what is concretely feasible."

Solution requirements

Solutions should not only make reporting more

Don'ts

- Overspecify or use labels
- Solutionize for suppliers, particularly with near-obsolete technology
- Opt for proprietary architecture

Feature requirements comprise the following 3 components:

1. The "viewer" with advanced visualization (e.g., PACS)
 - Features to support efficient diagnosis & reporting
 - "CAD" integrated workflows & other advanced tools now standard in all modern solutions
2. The enterprise image archive (e.g., VNA)
 - Transition from radiology PACS to multiregion/multispecialty solution (or infrastructure to allow future transition)
 - Store and display unified view of images and documents from whole enterprise in realtime
 - Store objects in native file format
3. The workflows
 - Multidisciplinary teams & teaching
 - Discrepancy & audit
 - Business & image analytics

efficient and enhance patient care, but also they should encompass a broader spectrum of requirements such as making working at home or cross-site more flexible, making multidisciplinary team workflows more efficient, and improving teaching capabilities, discrepancy exchange, or business and image analytics.

In terms of the solution's technical aspects, a standards-based approach should be implemented to allow for transition from PACS to enterprise imaging. Teams should observe emerging industry standards such as cross-enterprise document sharing (XDS) for simultaneous image and document visualization, and avoid solutions with proprietary architecture.

"An open application programming interface (API) allows future proofing with a 'deconstructible' solution -- meaning one where we can add modules in and remove them as necessary. The ideal would be the development of a full electronic patient record, but a deconstructible enterprise imaging solution is now a feasible goal, and U.K. hospitals must transition toward this over the next five years," Malik concluded.

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