Bermuda Hospitals Board today outlined what’s in store for the new electronic medical record (EMR), called PEARL (Patient Electronic & Administrative Records Log) and reviewed the project’s success.

PEARL is a replacement for a number of BHB systems, most notably BHB’s main clinical system, which was so old, it was no longer supported by the vendor. Replacing it addressed a critical risk to care, but the full investment in PEARL has been made to catalyse improvements in care across BHB and for Bermuda.

PEARL went live on 29 October 2022 and is now used in all clinical and support areas, and within the billing areas of Finance. Two months following go-live, BHB is transitioning from the implementation phase to a period of optimisation, in which improvements are made based on experience using the system to better work for staff and patients. Future phases are also planned, and this includes the introduction of a portal for patients to view their medical information.

CEO & President, Michael Richmond, comments: “PEARL is a national investment that has been significantly funded by internal cost savings at BHB, with our capped revenue being flat for the last four years. Our focus has been on ensuring the implementation was successful and that patient quality and safety is enhanced through its use. We are taking this moment to reflect on the programme and look forward to what is ahead. EMR implementations are extremely complex projects and research indicates more than 50% of similar implementations either fail or fail to be properly utilised\(^1\). Given the level of investment required, failure or significant and costly delays were not an option and BHB staff along with our partners have worked tirelessly for over 18 months to deliver the system effectively.

“The biggest thank you must go to our staff, who have shouldered a vast amount of work, from design and build workshops to extensive training, and adjusting to a new way of working. They have been working on this project since April 2021, and continued through some of the most devastating COVID waves.

“Although the work leading up to and including go-live was always anticipate to be the hardest part of the PEARL project, this is really just the beginning. We have addressed most of the issues that emerged as we went live with the new system, and our work now focuses on where PEARL can be optimised and improved for staff and patients to create value in the system.”

Chief of Staff, Dr Wesley Miller, adds: “We did everything required to ensure go-live succeeded, but what happens next excites us the most, not just in the coming weeks and months, but throughout the ten year contracted term. We are very appreciative of the community’s understanding as PEARL has gone live. Improving the care and experience of patients at the very heart of this project, but it does take time. We started looking at how to realise the benefits of PEARL this year, and so we are ready to act and ensure our community gets the best value possible out of the new system.”

The EMR implementation had to navigate numerous COVID waves, including the delta wave which was by far the hardest period for BHB, as well as a hurricane in the countdown to go-live. The project adapted to ensure key milestones were met, and staff had increased support for the implementation to succeed. Activities and issues were all reported through a project governance structure up to the Board.

- About $1.3 million was saved in costs by nearly all the design and build workshops and EMR meetings (over 1,000 meetings in 2021 alone) being hosted remotely, due to COVID-19.
The go-live date was reassessed once, moving from the beginning of September to the end of October, based on readiness assessments in early summer 2022. This was mostly due to the impact of COVID throughout the project’s duration.

Additional resources were recruited to support the project as COVID impacted internal resources and increased reliance on partners.

Chief Hospital Information Officer, Keltie Jamieson, explains: “Right now, we are going into a period of PEARL optimisation. This is when we take the experience of actually working in the system to identify any additional adjustments and actions to support better processes and staff utilisation of the system. We are also moving towards future phases which will see other parts of PEARL go-live, such as the patient portal. Beyond that, it is about using PEARL every day to make improvements and that continues for the next ten years. We look forward to sharing more in 2023.”

Chief Financial Officer, Arthur Ebbin, comments: “Every effort has been made to ensure we had a successful go-live so that the project remained affordable. We’ve had a tight governance and accountability framework in place, reporting through senior committees up to the Board. We have also been proactive in getting the support our staff needed to succeed, and worked hard to make the cost savings needed to pay for the project. The major contract with Cerner is paid over ten years, so it is a lot in total, but is affordable for us over time. EMRs help make savings too and the work now takes place to ensure this happens. Cost savings are achieved through system integration, automation of processes, digitisation of records, more efficient services reduced delays and duplications, and the retirement of a number of legacy systems that PEARL replaces.”

**EMR background information:**

**Who is the main vendor for BHB’s electronic medical record PEARL?**

The main contract is with Cerner Oracle who is the vendor for the electronic medical record, Millennium. The contract runs over ten years to 2030 and includes implementation and operational costs. Phase 1 of the project saw the successful go-live across all BHB locations and services. Future phases of the project will include the implementation of already-paid-for packages, including a patient portal.

**How was Cerner Millennium selected?**

A competitive request-for-proposal was issued in 2018. Over 100 staff helped evaluation bids and the recommended vendor then went to the Board for approval.

**Who are the other vendors associated with the implementation project?**

BHB had the assistance of two main vendors, S&P Consultants and Channel 3, who had extensive electronic medical record implementation experience. They provided design, build & project advice, on-the-ground-support, as well as governance and assurance checks to ensure we were ready for a successful go-live. Readiness assessments, in particular, are seen as key to ensuring implementation success(1). Channel 3 also assisted with a benefits realisation process to help us get the best value from PEARL after go-live. There were a few vendors who helped with system interfaces. Contracts for these vendors went through a competitive selection process.

**How has BHB paid for the electronic medical record?**
EMR implementations are known to be complex and challenging, even outside of pandemics. BHB has managed most of the costs of the project within its capped revenue budget set by Government, which has remained static for the last four years, supported by a programme of cost savings over multiple years. There was one $4.5 million grant for government that was reallocated from an MWI capital project to the EMR in 2021, but there have been no other additional grants or supplemental payments.

**How much will the EMR actually cost in total to BHB?**

There are many cost savings anticipated, including efficiencies and the retirement of multiple older systems. The net cost of the project over ten years is expected to be in the order of $30 million.

**PATI listed contracts in 2022 related to the EMR:**

- To support BHB staff, especially with delays and resource issues caused by COVID, BHB entered into contracts with two main support consultants, S&P and Channel 3. Contracts in the PATI listing 2022 were for this support, with contracts for just over $3 million.
- Work with other vendors related to building interfaces that were needed to connect to PEARL accounted for $513,000.
- An executive administrator managed all the meetings and arrangements for the EMR implementation project and go-live of $110,000.
- On-the-ground support and training from our overseas partners in the period leading up to and just after go-live cost $1.7 million. This includes the Hamilton Princess contract in the 2022 PATI listing, although other hotels and accommodations were used. This was less than the expected $3 million budgeted for on-island support throughout the project as most pre-go-live meetings were held remotely. Intensive in-person support is critical for the success of any EMR go-live, so could not be done remotely. Staff must be fully trained ahead of go-live and needed subject matter experts immediately available to trouble-shoot issues so that care can continue to be safely delivered through the go-live transition. Unlike hospitals overseas, BHB cannot transfer care or emergency services to another hospital during a transition, so continuity of safe services was even more critical. On-the-ground support included over 160 additional people on-island over the go-live period.

**Footnote:**

(1) Barriers to Electronic Health Record System Implementation and Information Systems Resources: A Structured Review by Jaillah Mae Gesulga, Alamarie Berjame, Kristelle Sheen Moquiala, Adrian Galido