



**FACTS**

**Customer:** Portsmouth Hospitals NHS Trust (PHT), UK.

**Challenge:** Portsmouth Primary Care Trust was looking to improve the quality of service it provides to its patients. Through technology, they wanted to improve and streamline business processes, while delivering additional cost savings.

**Solution:** A digital pen and paper solution from DevelopIQ, based on Digital Pen and Paper technology. It is a mobile solution, enabling data to be sent from the field.

**Benefits:** Annual efficiency savings estimated at over £220,000. Amount of time spent on patient administration has been halved. Time freed up is equivalent to five full-time midwives. Protection against mislaid, damaged or stolen notes. Protection against litigation. Compliance with government legislation.

## Annual savings of £220,000 with Digital Pen and Paper

*“We have freed up ‘time to care’ equivalent to five full-time midwives. The digital pen and paper solution from DevelopIQ will pay for itself and begin generating savings in the first year. In the second and third year it’s all savings.”*

**Richard Sargent, ICT Change Control Specialist/Team Leader at PHT**

Situated on the south coast of England, Portsmouth Hospitals NHS Trust (PHT) provides a full range of acute services to a population of over half a million people. In 2009, PHT opened the new state-of-the-art Queen Alexandra Hospital, a merge between the current Queen Alexandra Hospital, St Mary’s Hospital and the Royal Hospital Haslar. Additional specialist services are provided to a wider area, extending as far as Dorset and Sussex, all part of the South Central Strategic Health Authority.

**The search for a new solution**

In addition to opening a new hospital that will deliver some of the most up-to-date care in the country, PHT has also been examining the provision of care in the community. It is usually dispensed to patients at home by midwives and nurses, who record their activities and notes on paper forms.

The Trust had been looking at providing electronic note-taking with laptops equipped with 3G cards, but the idea had encountered push-back from the carers, who were not comfortable with the technology. They felt it would get in the way of patient care, especially as the laptops had a short battery life and were cumbersome to carry around.

Faced with these objections, Richard Sargent, ICT Change Control Specialist/ Team Leader at PHT, was on the lookout for other technologies that would enable community nurses and midwives to take notes and complete paperwork without changing their current working practice.

He first came across Anoto Digital Pen and Paper technology in November 2008. During a review meeting with the Trust’s mobile operator Telefonica O2, Sargent noticed the account manager taking notes using an unusual looking pen. The mobile operator

then arranged a meeting with DevelopIQ, an Anoto partner that develops the digital pen and paper solution. Sargent discovered that digital pen and paper coupled with BlackBerry® smartphones could facilitate secure, remote note-taking using paper forms.

A presentation to the teamleaders at the Trust was arranged and the head of the Maternity department immediately liked what she saw. Next, a two month pilot was trialled, purposely on six midwives that were resistant to the technology.

After a 90 minute training, they were ready to use the pen. The midwives grew very fond of the pens which they found very user-friendly.

**Previous working practice**

The Maternity department’s midwives provide antenatal care at home,

documenting everything they do in an 80-page paper form, known as the Maternity Notes form. The purpose of this form is to track the mother's health and the baby's development during the pregnancy and the mother is instructed to bring the form to the hospital for the birth.

The midwife updates the form on every visit and is also tasked with writing up this information again when she returns to the hospital. The information might be mistyped or on occasion updating the hospital record may be overlooked. The Maternity Notes form may also be lost or the mother and her partner may forget to take the maternity notes to the birth with the stress of the onset of labour.

The administrative burden for the midwives with the previous process was considerable. With the new solution it was expected that this could be reduced and that the midwives would have more time to care.

#### How it works

The solution consists of a digital pen, a Maternity Notes form with Anoto's dot pattern and a BlackBerry® smartphone.

The digital pen has an infrared camera that scans the barely visible dots in the form and records the coordinates of the pen strokes made by the midwife. When the midwife wants to send data from the pen, she simply ticks a box on the form. The pen sends the data to the BlackBerry® smartphone via Bluetooth®. Once the smartphone receives the data, it encrypts and sends it to the BlackBerry® Enterprise Server installed in the Trust's data centre, from where it is then transmitted to the maternity records system. The transmission is automatic and does not require any user intervention.

Alerts are sent back to the midwife on her BlackBerry® smartphone to confirm successful or incomplete form completion. The midwife can thus update the information if required. This allows the Trust to ensure the quality of the data from the community, reducing mistakes, incomplete information and the need for unnecessary revisits.

#### Benefits

The digital pen and paper solution has been commercial since March 2010. Across a typical midwife's schedule, the solution has halved the time spent on administration,

from 98 minutes to 48 minutes per episode of care and thus the midwives are now able to provide more patient care within their scheduled working hours.

"We have freed up 'time to care' equivalent to five fulltime midwives. The digital pen and paper solution from DevelopIQ will pay for itself and begin generating savings in the first year. In the second and third year it's all savings," says Sargent.

Portsmouth Hospitals NHS Trust estimates that the solution will yield £220,000 in efficiency savings in the second and third year respectively.

"By having patient records safely stored by the Trust, mothers are reassured that if their physical records booklet is mislaid or becomes damaged, their midwife can just request a new printed version of the notes which would contain full details of the check-ups and care given," says Sargent.

"Moreover, the records system chronologically orders every episode of care together with any notes that are taken in exactly the state that they were recorded, which is useful if a case of litigation was brought against the Trust," he adds.

This will generate additional savings by protecting the Trust against any potential litigation costs or from failure to comply with government directives.

In May 2010, the Trust won the global BlackBerry Wireless Leadership Award for their deployment of the digital pen and paper solution. They were awarded in the Business Impact category, which recognises organisations that have deployed a wireless solution that has made a significant impact on their business.

The digital pen and paper solution has been deployed to 130 midwives and Portsmouth Hospitals is planning to expand the usage of the solution to Community Nursing and Accident & Emergency departments later in 2010.

#### Partner profile:

*DevelopIQ is an Elite BlackBerry Alliance Member and a proven technical leader in developing and deploying enterprise and consumer applications for the BlackBerry® smartphone. Its award-winning digital pen and paper platform based on Anoto functionality is marketed under the brand name PaperIQ and the business has a strong track record of successful deployments across many sectors, including healthcare, banking, insurance and local government. More in-depth information about Portsmouth Hospitals NHS Trust's deployment of PaperIQ can be found at [www.paperiq.com/freeing-timetocare](http://www.paperiq.com/freeing-timetocare). DevelopIQ is headquartered in Winchester, UK and is privately funded.*

[www.paperiq.com](http://www.paperiq.com)

#### Customer profile:

*Portsmouth Hospitals NHS Trust (PHT) has over 6,000 employees and provides a range of acute services mainly across two sites including Queen Alexandra Hospital and St Mary's Hospital. The majority of the Trust's acute services are provided at Queen Alexandra. The Emergency department at Queen Alexandra Hospital is one of the busiest in the UK, treating in excess of 100,000 patients each year. The Medical Assessment Unit (MAU) and Surgical Assessment Unit (SAU) provide rapid diagnostic assessment for patients admitted as emergencies.*

[www.porthosp.nhs.uk](http://www.porthosp.nhs.uk)

#### Anoto Digital Pen and Paper technology

*An Anoto Digital Pen looks and feels like a normal ballpoint pen. However, it contains an integrated digital camera, an advanced image microprocessor and a Bluetooth® transmitter. Any paper can be used with a digital pen, if the Anoto dot pattern is added to the layout before printing the paper. The Anoto dot pattern consists of numerous black dots that can be read by the digital pen, but are almost invisible to the naked eye. The pen reads the pattern and registers what and where the user writes.*