



# Imperial College NHS & Isosec Transform Postnatal Maternity Care

**A CASE STUDY**

Edition 1.0

# Introduction

Imperial College NHS Trust has successfully transformed the inefficient paper based process that their pressurised Maternity Department was using into a streamlined and user-friendly digital process using MIA Maternity from Isosec.

The project was led by Deputy CIO Kathy Lanceley and Assistant Director of Maternity Pippa Nightingale who were supported by an award winning team of midwives.

As growing pressure is put on the NHS to perform it has become clear that Postnatal Care for women and babies in the UK has undergone great scrutiny recently. The Royal College of Midwives published a series of reports under the headings of 'Pressure Points' highlighting how transformational action was required to be taken nationally by trusts to improve the performance of their already thinly stretched Maternity Departments.

Isosec has developed a solution to the problem with a clinical mobile application for midwives and admin staff to transform processes and improve efficiency to reduce the pressure all departments are currently facing. NHS Midwifery Departments are typically short of staff, time and resources but with a streamlined solution like MIA Maternity from Isosec the issues they currently face can be significantly improved.

“**We knew our Maternity Department was facing real problems and that an innovative solution would be the only way to address them.**”

”” *Kathy Lanceley,  
Deputy CIO for Imperial*



Imperial College Healthcare NHS Trust have piloted MIA Maternity for six months with great success and are rolling it out to all 105 community midwives. This study describes detail about the partnership between the Trust and Isosec that has pioneered Postnatal Care improvement for the Trust using a clinical mobile software solution.

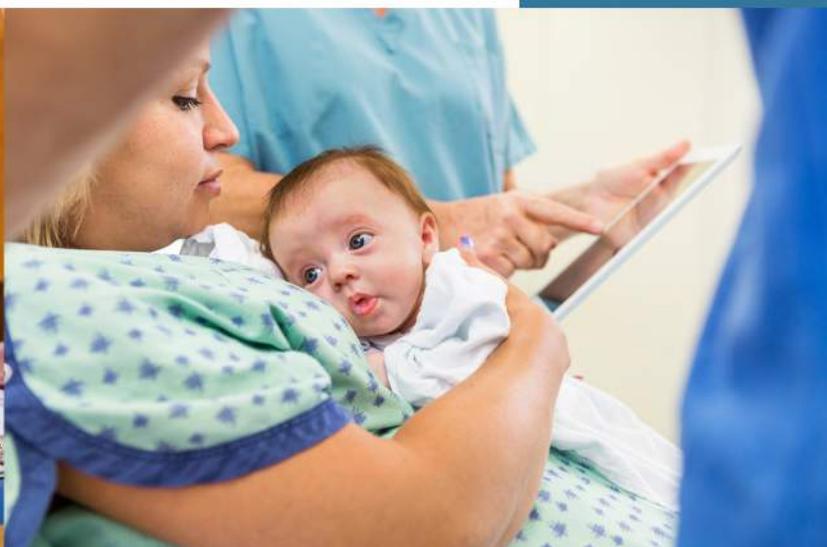
## The Challenges:

- + Inefficient and unproductive use of midwives' time
- + High administrative support overhead
- + Loss of income from missing paper pathway tariff forms
- + Large travel overhead in both cost and time
- + Poor data quality from using paper forms
- + Duplication of processes
- + Reduced patient contact time
- + Lack of consistency, compliance and auditability

## The Solution

### MIA Maternity:

- + Improves data quality by replacing paper forms with an intuitive and user friendly iPad application
- + Ensures compliance using on-screen prompts and checks to prevent processes being circumvented
- + Removes the need to travel back to base by transparently synchronising data with clinical systems when online
- + Works in online and offline (briefcase) mode
- + Frees up time to spend on providing improved patient care
- + Provides valuable metadata for MIS
- + Contributes towards the Paperless NHS target



# The Journey

**'It's true to say that Community Maternity work is one of the most challenging systems to design for from an IT perspective.'**

*- Kathy Lanceley, Deputy CIO for Imperial*

Isosec head back to base and using Isosec's MIA Platform, the idea of a mobile app for Maternity begins to form.



Isosec and Imperial's teams meet to ensure everyone is confident using MIA Maternity.



Imperial and Isosec work together to iron out issues and grow ideas to further develop the app.

Whilst in a meeting about another of Isosec's products that Imperial use, they express that their Maternity Department is having some problems and reach out for Isosec's input.



Using an agile approach, Isosec developers begin to build MIA Maternity and work together with the team at Imperial to add or remove features on a fortnightly cycle.



After an initial parallel run with one midwife, the first team of Imperial Midwives use MIA Maternity for a six week pilot.



MIA Maternity pilot is deemed a huge success and Imperial already begin to reap the financial, clinical and midwife satisfactory benefits.

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# Technology

## Implementation

The MIA Server is virtually hosted in Imperial's datacentre, integrated with their existing SQL service layer. This provides a resilient and highly available service for when the MIA Maternity clients need to synchronise their patient data.

N3 and internet connectivity is provided by either wifi hotspots to the N3 network or via Cisco VPN connectivity from the midwives home or public wifi hotspot.

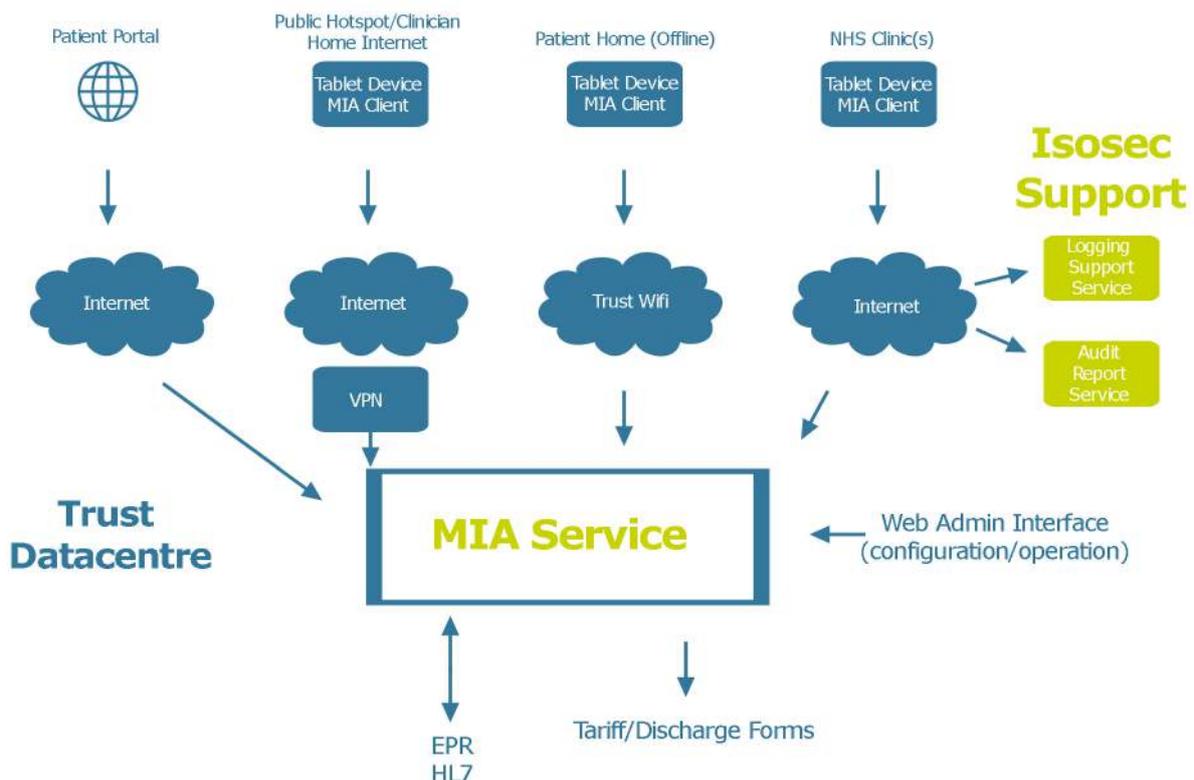
As new mums come under the care of the postnatal team, information flows through Cerner Millennium using HL7 messages in to the MIA Server. This then gets pushed out when each midwife synchronises with the MIA Server. In turn any patient information created by the midwives is pulled and pushed out to all the other midwives in the team when they synchronise. The MIA Server will also send this information in to Cerner Millennium using HL7 messages.

When mums are discharged, this triggers the generation of the discharge document which is created as a PDF and also sends the information to Cerner Millennium.

## Rollout

To enable a midwife to use MIA initially, the MIA Client is downloaded from the Apple App Store – it can be found by searching for "Isosec MIA". Once downloaded and run, MIA prompts for a customisation profile for the Trust, which is Imperial in this case.

The midwife inserts their smartcard to authenticate and is then prompted to register for MIA Maternity. Separately, an administrator accepts the registration and allocates the midwife to a team. The midwife is then ready to start using MIA Maternity.





# A Day Working With MIA

First thing in the morning Alice from the Ladbroke Grove Maternity Team launches the MIA Maternity app on her iPad and connects to a network at home. MIA automatically synchronises all patient and observations data from their team as well as Alice's appointment list for the day. This takes seconds. Alice can then pack the iPad away and start her day.

MIA Maternity knows the location of each mother and baby and will automatically display the nearest patient based on proximity to Alice saving time having to search for her patient.

Whilst with mum, observations are recorded easily into MIA on the iPad, together with the patient's next appointment or discharge details. A dashboard highlights whether a Pathway form must be completed, together with reminders for items such as Newborn Bloodspot Screening Tests.

Each midwife in the team has access to all patient information for that team and so can quickly review notes for any patient. So any information Alice inputs to MIA will be available for the whole team to see, most importantly for the next midwife who comes to visit mum and baby.

At the end of the day Alice can go online anywhere and MIA automatically synchronises all patient records, pathway forms, observations and appointments. After just a few seconds the synchronisation is complete and the iPad can be packed away or used normally as a personal device - as no NHS data can be accessed without the smartcard.

# MIA Maternity provides an ROI in under 6 months and will save a typical Trust £1.2M over 3 years

## The Benefits:

- ✓ Costs reduced
- ✓ Productivity increased
- ✓ Improved performance
- ✓ Increase in staff morale
- ✓ Time spent travelling reduced
- ✓ Increase in patient engagement

## The Savings:

A conservative estimate of the time that can be saved per midwife is 5 hours per week (4 hours travelling and 1 hour admin)\*. This equates to an annual saving of over £9,000\*\* per midwife. There are also further savings in expenses (from the reduced travelling) of £600pa\*

For a team of 50 FTEs this equates to a potential saving of over £450,000pa and MIA Maternity will pay for itself in under 4 months. Over a 3 year period MIA Maternity will save a Trust nearly £1.2M.

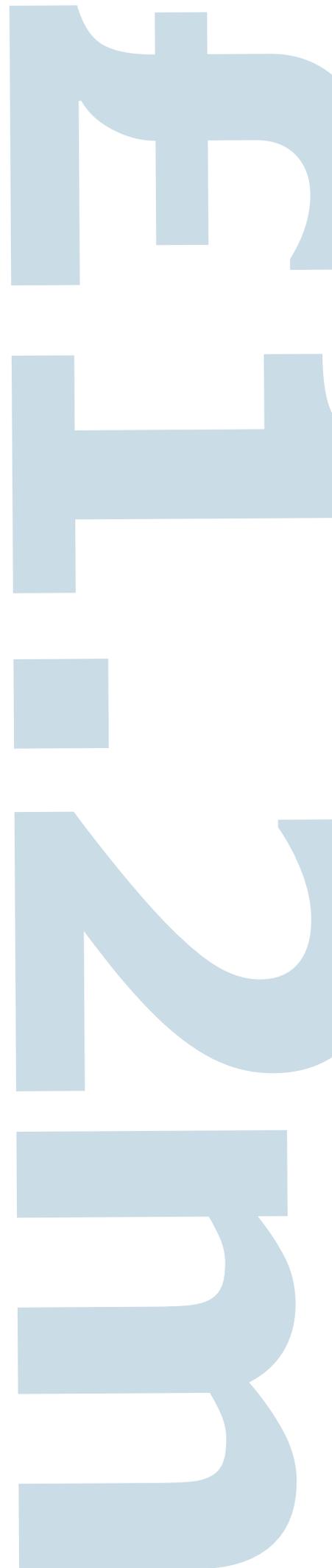
The improvements in care means there are also potential knock-on benefits including:

- Reduction of GP visits
- Reduction of out-patient appointments
- Reduction in hospital stays

### Sources

\* Based on MIA Maternity Metadata from Imperial College NHS Trust

\*\* HSCIC Unit Costs of Health 2014





**MIA Maternity has transformed the Postnatal Maternity process. It is now much more streamlined; the midwives now only capture information once. Lost forms are a thing of the past and patients and staff are much happier with the tablet based system. Isosec listened to our requirements worked well with our IM&T and midwifery teams and were very flexible in delivering what we needed. Return on Investment was under 6 months too!** ””

Pippa Nightingale  
Head of Maternity Services at Imperial

Imperial have now been using MIA Maternity for several months and it has proven to be a great success, resulting in MIA being rolled out to their whole department of 105 midwives.



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