Kent Pharmaceuticals: a live pharmaceutical serialisation and verification system

by **Jason Webb,**
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Abstract

In the UK, out-of-hours patients could not always receive the medication they needed during their consultation. These patients had to rely on the few medicines their general practitioner was carrying and had to wait until the pharmacy opened to receive their full medication. As a provider of pharmaceutical supplies to out of-hours doctor services, Kent Pharmaceuticals developed a system using GS1 Standards to ensure a safer and more efficient medicines management solution.

Introduction

Traditionally, out-of-hours doctors were expected to rely on the few medicines they were able to carry in their doctor's bag to meet the demands of patients requiring treatment outside normal surgery hours. It was not uncommon for patients to be provided with "one or two tablets in a brown envelope to tide them over" until they could visit a pharmacy and receive the necessary treatment in the usual way. In 2000, the Carson Review: "Raising Standards for Patients – new Partnerships in Out-Of-Hours (OOH) Care", made a number of recommendations aimed at improving both the safety and efficiency of OOH dispensing including:

• **Recommendation Nineteen:**
Other than in exceptional circumstances, patients should be able to receive the medication they need at the same time and in the same place as the out-of-hours consultation.

• **Recommendation Twenty:**
The existing remuneration and contractual arrangements for out-of-hours providers and pharmaceutical services should be reviewed and, where appropriate, modified to allow for the provision of all appropriate medicines in the manner set out in Recommendation Nineteen.

The implementation of these two recommendations clearly necessitated a root-and-branch review of how medicines were made available to doctors and nurses providing out-of-hours care.

"For the efficiency savings, I find about booking-in of stock 40%-60% quicker. This will go up again once I am able to log a whole box in with just one scan. Dispensing stock is much quicker with the 2D scanner as I am able to do multiple drugs within a fraction of the time. I would say dispensing stock is now over 60% faster."

Sarah Workman, Medicines Management Team at East Berkshire Primary Care Out-of-Hours Services

Kent Pharmaceuticals, a UK pharmaceutical manufacturer and wholesaler who supplies to of out-of-hours doctor services, partnered with Advanced Health & Care (developers of Adastra) and Melior Solutions Ltd. (Melior). They employed the GS1 System of Standards to provide the fundamental keys to enable the accurate identification of all pharmaceutical product packs, efficient capture of the required information and the ability to share and verify this information.

Applying GS1 Standards

The Adastra clinical patient management system is designed specifically to manage episodes of care in unscheduled settings such as out-of-hours services. The system monitors in real-time any drug issued by the clinician for his patient, as well as allows drivers or clinicians to check the availability of cars stock at the start of a visit to a patient and then monitors in real-time any drug issued by the clinician for his patient. This information, along with the relevant details of the consultation, are transmitted electronically to the 'in-hours' general practitioner system before 9.00 a.m. the following morning.

Kent sources the products from their own production or from other manufacturers. All products destined to be used in the out-of-hours service were then relabelled to indicate that they belonged to the service. This re-labelling requires (according to GS1 Healthcare Global Trade Item Number (GTIN) allocation rules) a new GTIN for each product and Kent Pharmaceuticals accordingly allocated these numbers using their

GS1 prefix. Each pack was relabelled with a GS1 DataMatrix and was marked with the following information on the secondary packaging:

- Global Trade Item Number (GTIN);
- serial number;
- batch/lot number; and
- expiration date.

During the re-labelling process, the Melior system scans and verifies each printed code for accuracy and uniqueness. The information contained in the GS1 DataMatrix on the re-labelled products is then uploaded via simple software tools to a secure external data repository (the Kent Secure Server). The data repository is equipped with secure web service connections used by Adastra when checking and verifying packs.

When the re-labelled product is received by the out-of-hours services, each pack is scanned in turn. The data from the scan activity is sent to the data repository where it is checked for validity, the status of the pack updated and a detailed response is then returned providing Adastra with further pack information that is used by Adastra when adding the product to stock.

The solution was piloted and assessed in two critical business processes:

1. Inventory management (goods receipt and stock management) - To assess the scanning and verification of the stock received from Kent and the movement of stock around the out-of-hours providers,

2. Medication Dispensing - To assess the feasibility of clinicians scanning the product, as well as the verification of the product, which ensures the product being prescribed is the right product going to the right patient, and embedding the batch number and expiry details into the patients records.

Matching the product prescribed and dispensed through standardised identification reduces dispensing errors.

Kent and Melior deployed and tested the solution, which consisted of a mix of standard commercial off-the-shelf products and customised products over a six-month period prior to release. Further enhancements are being discussed to permit the tracking and handling of bulk aggregated product using Serial Shipping Container Codes (SSCCs), which would further enhance the efficiency of the goods-in process.
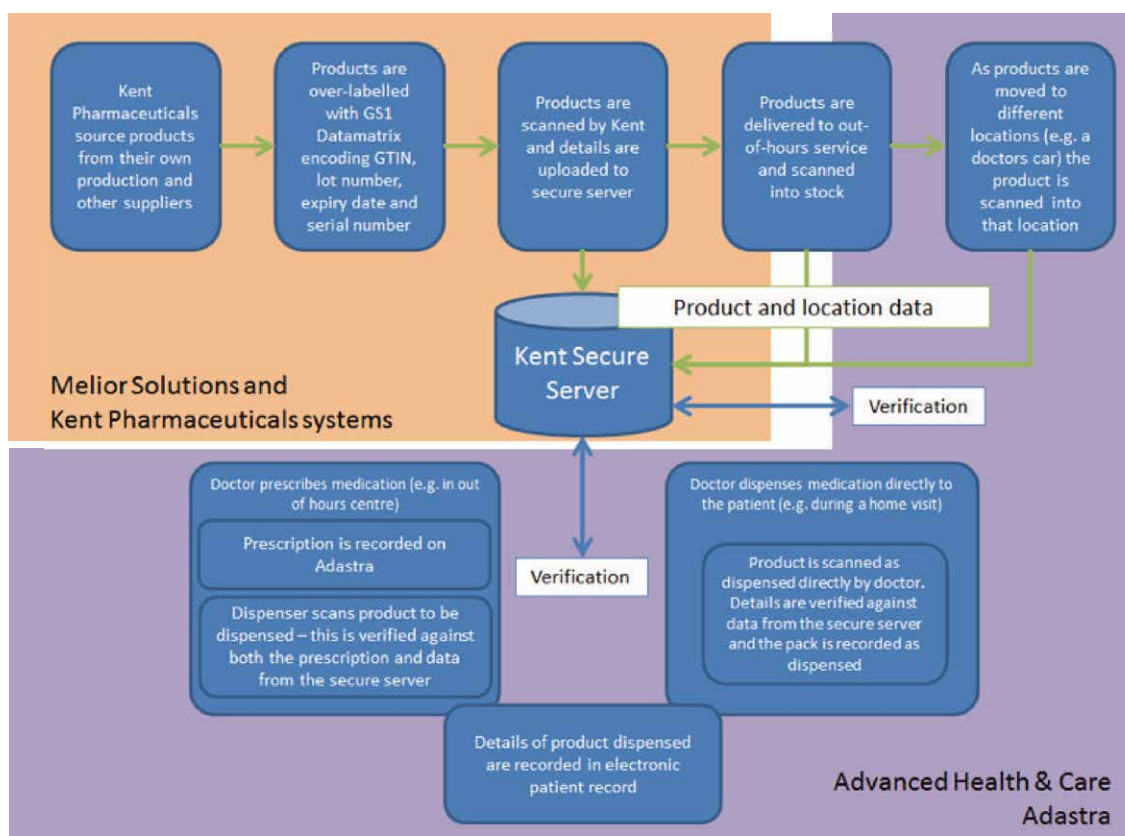
Benefits of using GS1 Standards

By 2013, the system has scanned and verified over 15,000 packs of medicine from the point of relabeling to the point of dispensing. The average time taken by the Kent server to verify a pack was less than 50 ms.

In short, the benefits of the system are:
- improved patient safety through authentication at point of dispensing and tracking of expiry dates;
- reduced risk through elimination of manual entry of stock in database;
- improved tracking system (products are tracked from reception of good to the patient);
- improved recall management (products are located immediately in the event of recall); and
- improved stock efficiency/savings through quick scanning of dispensing stock.

About the author

Jason Webb has been in the pharmaceutical industry for 19 years, starting his career in a manufacturing role before moving into a management role within a parallel import company. In 2005, Jason moved to Kent Pharmaceuticals Ltd. as Contracts Manager and, in 2009, was appointed Public Sector - Sales & Marketing Manager, which is a role he continues with today.

Jason is also Project Manager for the implementation of 2D coding within Kent and is also co-chair of the GS1/Department of Health Working Group on 2D coding within secondary care.

About Kent Pharmaceuticals

Kent Pharmaceuticals, a UK pharmaceutical manufacturer and wholesaler which offers a wide range of manufacturing, importing, re-packaging, sourcing and delivery services to healthcare providers in the UK, supplies to out-of-hours (OOH) doctor services.

Established in 1986, Kent Pharmaceuticals prides itself on dedicated service excellence. Its position as Britain's largest independent generic pharmaceuticals manufacturer and wholesaler has been significantly enhanced following the merger with Fannin Pharma. Kent Pharmaceuticals is now part of DCC Vital.

DCC Vital is a leader in the sales, marketing and distribution of pharmaceuticals and medical devices in Britain and Ireland servicing hospital, pharmacy and homecare channels, as well as specialised logistics provider in the UK through Squadron Medical and TPS.