



Case Study Saint Francis Hospital and Medical Center Hartford, Connecticut

Saint Francis Hospital and Medical Center has been an anchor institution in North Central Connecticut since its founding in 1897 by the Sisters of Saint Joseph of Chambery. Licensed for 617 beds, it is one of the largest hospitals in Connecticut and the largest Catholic hospital in New England.

As a tertiary hospital affiliated with the University Of Connecticut School Of Medicine, Saint Francis provides sophisticated, contemporary medicine with major clinical concentrations in cardiology, oncology, women's and children's services, behavioral health, emergency/trauma care and rehabilitation. The achievement of excellence is emphasized through the establishment of centers of excellence, which focus on quality, compassionate caring and the dignity of every patient. The commitment to these values is evident in Saint Francis' mission of commitment to health and healing through excellence, compassionate care and reverence for the spirituality of each person.

The hospital operates using the IDX Care Cast[®] healthcare information system which provides pharmacy information system functions in addition to computerized prescriber order entry (CPOE) and bar code point-of-care (BPOC) medication administrator.

The Pharmacy Department at Saint Francis Hospital and Medical Center operates 24 hours a day, seven days a week. The IV Admixture program produces 3300 doses per day, of which 3000 are small-volume parenteral doses.

The medication distribution system is automated with pneumatic tubes, Pyxis[®] medication cabinets, Talyst[®] medication carousel system, a Baxa EM2400[®] TPN compounder and the IntelliFill i.v. robot from ForHealth Technologies, Inc.

According to Mary Inguanti, Vice President of Operations and former Director of Pharmacy, the installation of IntelliFill i.v. established the cornerstone of their current i.v. admixture program. Installing the device allowed them to convert the current nursing practice of preparing flush doses on the patient care areas to receiving ready-to-administer flush syringes, thereby meeting both cost and patient-safety goals. This was quickly followed by the preparation of commonly used antibiotics.

Small-volume parenteral doses in syringes are administered with a syringe infuser, which provides consistency and safety for this cost-effective dosage form.

Expanding the role of IntelliFill i.v. to other, less obvious, roles began when there was a national shortage of single-dose vials of Methylprednisolone. The Pharmacy determined that the Methylprednisolone inventory could be maximized, and patient care improved, by preparing ready-to-administer doses in syringes in IntelliFill i.v.

The Pharmacy currently produces three different flush syringes and eight different drugs using IntelliFill i.v. Bar codes on each syringe drive the BPOC system. The pharmacy uses the robot 18 hours per day, five days per week, producing an average of 20,000 syringes per week, and holds the current national record for the most syringes produced in one day (over 6,900.)

The drugs presently prepared by IntelliFill i.v. at Saint Francis Hospital and Medical Center are:

Adenosine Phosphate
Buffered Lidocaine
Cefazolin Sodium
Cefepime
Ceftriaxone
Cefuroxime
Famotidine
Magnesium Sulfate
Methylprednisolone

0.9% Sodium Chloride (flush)

Heparin 1 unit/mL in 0.9% Sodium Chloride (flush)

Heparin 10 units/mL in 0.9% Sodium Chloride (flush)

With the exception of Cefepime, all doses are produced in reservoir mode. IntelliFill i.v. prepares Cefepime doses from vials in SNAP (extemporaneous) mode. Cefepime is now available only in 1 gm and 2 gm vials, so having IntelliFill i.v. reconstitute those vials and prepare the doses offers a distinct advantage to the pharmacy.

Flushes are produced, checked, bagged, and stored in totes that are sealed and distributed to the patient care areas through Materials Management.

Numerous technicians are trained as operators of the device. According to Mike Culligan, IV Supervisor, operation of IntelliFill i.v. is not a full-time job. Operators carry a variety of other responsibilities including delivery of medications, performing departmental quality assurance tasks, assisting in manual IV production, and other duties as assigned. They interact with IntelliFill i.v. at regular intervals to replenish supplies.

In addition to achieving patient safety and medication quality goals, the implementation of IntelliFill i.v. has proven cost-effective. While not all doses prepared show dramatic cost savings, the pharmacy documents regular monthly savings, which provided a rapid return on investment.

The Saint Francis Hospital pharmacy continues to develop new applications for IntelliFill i.v. and has plans to initiate an interface with their IDX system to produce doses for NICU, as well as expand their presence in the preparation of labeled doses for the OR and, potentially, the packaging of narcotic syringes. The addition of the serial dilution feature will permit the pharmacy to prepare pediatric dilutions on IntelliFill i.v.

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