Supplemental Figure 1. Results of the Observation Section

LASA medicines based on the look-alike packages by storage units and observations of LASA medicine risks associated with the automated dispensing cabinet (ADC). The results are based on a one Pyxis MedStation ES™ ADC system at intensive care unit in HUS Helsinki University Hospital, Finland. Photographed on 18 February 2020. High-alert medication information: ISMP (2018) and HUS (2019) high-alert medication lists. Photo credit and copyright belongs to Henna Ruutiainen. The package design and brand names belong to the manufacturers.

Main unit 5:
In the same compartment: nitroprusside (Nitropress)* and nifedipine (Nifedipin-ratiopharm 20 mg/ml Tropoden) droplets. Nitroprusside is a high-alert medication. LASA group that was not identified in the inventory report analyze.

Main unit 5:
In the same compartment: paracetamol suppository 50 mg (Para-suppo) and 125 mg (Panadol) and dissolving tablets paracetamol 250 mg (Pamol F and Pinex). Pamol F and Pinex can be found in the ADC under the name Pinex, although the product in the 2020 basic medical selection is Pamol F.
Main unit 4:
In the same compartment: antibiotics (tablets) manufactured by Ratiopharm. LASA group that was not identified in the inventory report analyze.

Cabinet 2, door 2:
Thiopental Sodium preparations *Pentocur 0.5 g* and *Pentocur 1 g* stored next to each other in the same compartment. The one-gram preparation has an auxiliary labeling saying “Attention! The strength 1 g must be diluted”. High-alert medications.
Cabinet 2, door 1: Stored next to each other Vitalipid Infant and Nutritrace*. Both are intravenously administrated concentrates: electrolytes, vitamins and trace elements. High-alert medications. LASA group that was not identified in the inventory report analyze.
Cabinet 2, door 2:
In the same compartment: next to each other Orion Pharma’s preparations *Thyroxin 25 microg* and *Hydrocortison 10 mg* without the outer packages. The inner packages look-alike in addition to the outer ones if saved. LASA group that was not identified in the inventory report analyze.

Cabinet 2, door 2:
In the same compartment: next to each other *Hydrocortison 10 mg* and *Prednison 5 mg*, similar outer packages. Can also be mixed because of the similar indications. LASA group that was not identified in the inventory report analyze.
Cabinet 2, door 2: Acetylsalicylic acid preparations Disperin 100 mg tablets and Primaspan 50 mg enteric coated tablets in the same compartment at sites 5 and 14. Especially if there is no outer packaging, there is a high risk of confusion due to Orion Pharma’s similar inner packaging. High-alert medications.
Refrigerator 1 sites 14 and 18:
In the same refrigerator: cisatracurium 2 mg/ml preparations *Cisatracurium Accord* (10 ml) and *Nimbex* (5 ml). *Accordin* 10 ml is being replaced by *Nimbex* 10 ml (red package). High-alert medications.

Refrigerator 2:
Lorazepam 2 mg/ml -preparations *Lorazepam Injection* and *Tavor*. Both are discontinued from the ward. High-alert medications. LASA group that was not identified in the inventory report analyze.
Refrigerator 2 sites 13 and 21:
*Fasturtec 1,5 mg/ml 1,5mg/1ml and 7,5mg/5ml (rasburicase)* in the same refrigerator.
Refrigerator 1 sites 1 and 10:
In the same refrigerator: Adrenalin 1 mg/ml (1 ml) and Lidocain c. adrenalin 10 mg/ml + 10 mikrog/ml (10 ml). Both high-alert medications. Ampoule preparations that can also be mixed because of the inner packaging. The site numbers 1 and 10 can be mixed. Due to the COVID-19 pandemic, all the pictures could not be taken at the ward. Pictures taken by Sini Kuitunen on 1st March 2020.

Cabinet 1, door 7:
In the same compartment: cefotaxime (Cefotaxim Eberth 0.5 g) and cefuroxime (Cefuroxim MIP Pharma 1500 mg) dry substances. Similar powder for solution for injection glass bottles as inner packaging. Due to the COVID-19 pandemic, the pictures could not be taken at the ward.

Refrigerator 1 sites 41 and 43:
HUS Pharmacy -made 100 ml oral suspensions Hydrochlorothiazide 5 mg/ml and Hydrocortisone 5 mg/ml. The appearance of the packets resembles each other (in addition to the LASA medicine risk because of similar names). Due to the COVID-19 pandemic, the pictures could not be taken at the ward.

Based on the packaging and storage of the products, there were a total of 30 LASA medicines (15 LASA groups). Of these, 13 medicines were high-alert medications meaning that about 40% of the LASA medicines based on appearance were high-alert medications. Three products, all high-alert medications, (marked with *) were not classified as LASA medicines because of names unlike others. In total 6 of the LASA groups were not identified in the inventory report analyze.
Several products with similar names. The full name of the product may not appear fully on the display of the ADC. Strengths and pack sizes read in smaller and lighter text. For example, sodium preparations, lidocaine and coagulation factors (generic names and forms are in Finnish):

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