



**PHARMACY
VISION
20/20**

CSHP SEMINAR 20 • OCTOBER 21-25
Disneyland
RESORT

IMPLEMENTING A CENTRAL PHARMACY HUB AND SPOKE DISTRIBUTION MODEL FOR A REGIONAL HEALTH-SYSTEM

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DISCLOSURE

Nothing to disclose

- Suzanne Shea, BS Pharm, MBA
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- Jason Lam, PharmD, Certified Six Sigma Black Belt

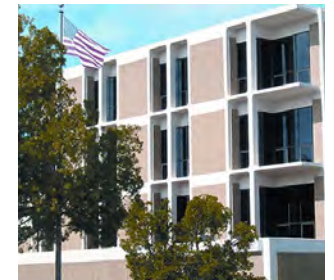
LEARNING OBJECTIVES

- Define the elements of a central pharmacy hub and spoke distribution model
- Develop criteria to assess whether a centralized distribution model is a good fit for your organization
- Develop an elevator speech for pharmacy leadership to propose a central pharmacy distribution.
- Identify key project stakeholders, project management and process improvement tools for a successful implementation of a central pharmacy distribution model

ABOUT SHARP HEALTHCARE

Regional Integrated Health System in San Diego

- Serving 3.2 million SD county residents
 - 2,084 licensed beds
 - 18,000+ employees
 - 2,900+ affiliated physicians
- Care areas
 - 4 acute care hospitals
 - 3 specialty hospitals (women and newborn, behavioral health)
 - 3 affiliated medical groups
- Regional health plan



ELEMENTS OF A CENTRAL PHARMACY HUB AND SPOKE DISTRIBUTION MODEL

*Clarifying who is the 'Hub' and who are the at the ends
of the 'Spokes'*

TRADITIONAL DRUG DISTRIBUTION MODEL

*Sharp
Chula Vista
Hospital*



*Sharp
Coronado
Hospital*

*Sharp
Grossmont
Hospital*

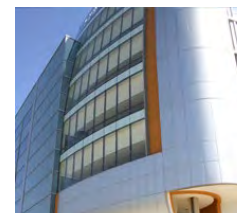


**CardinalHealth
Drug Distributor**



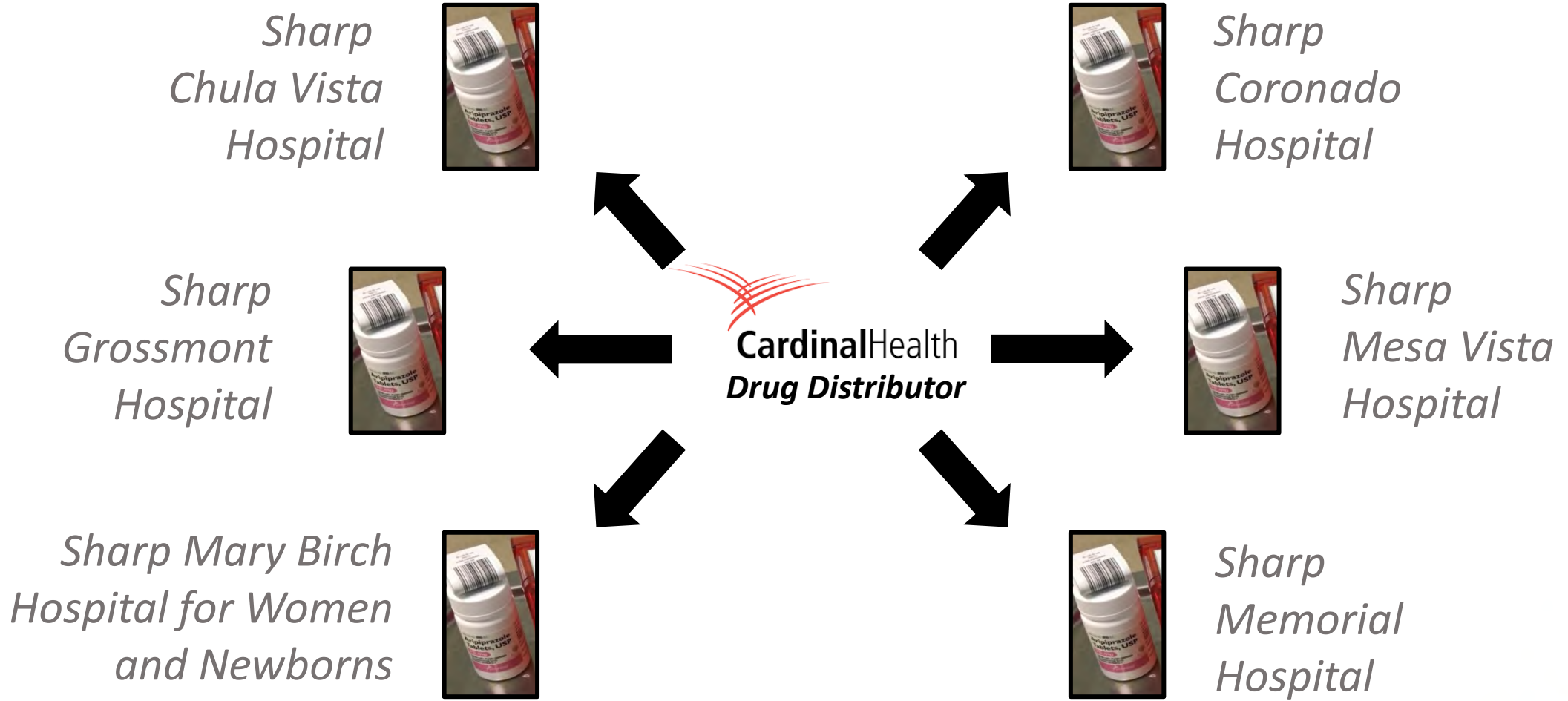
*Sharp
Mesa Vista
Hospital*

*Sharp Mary Birch
Hospital for Women
and Newborns*

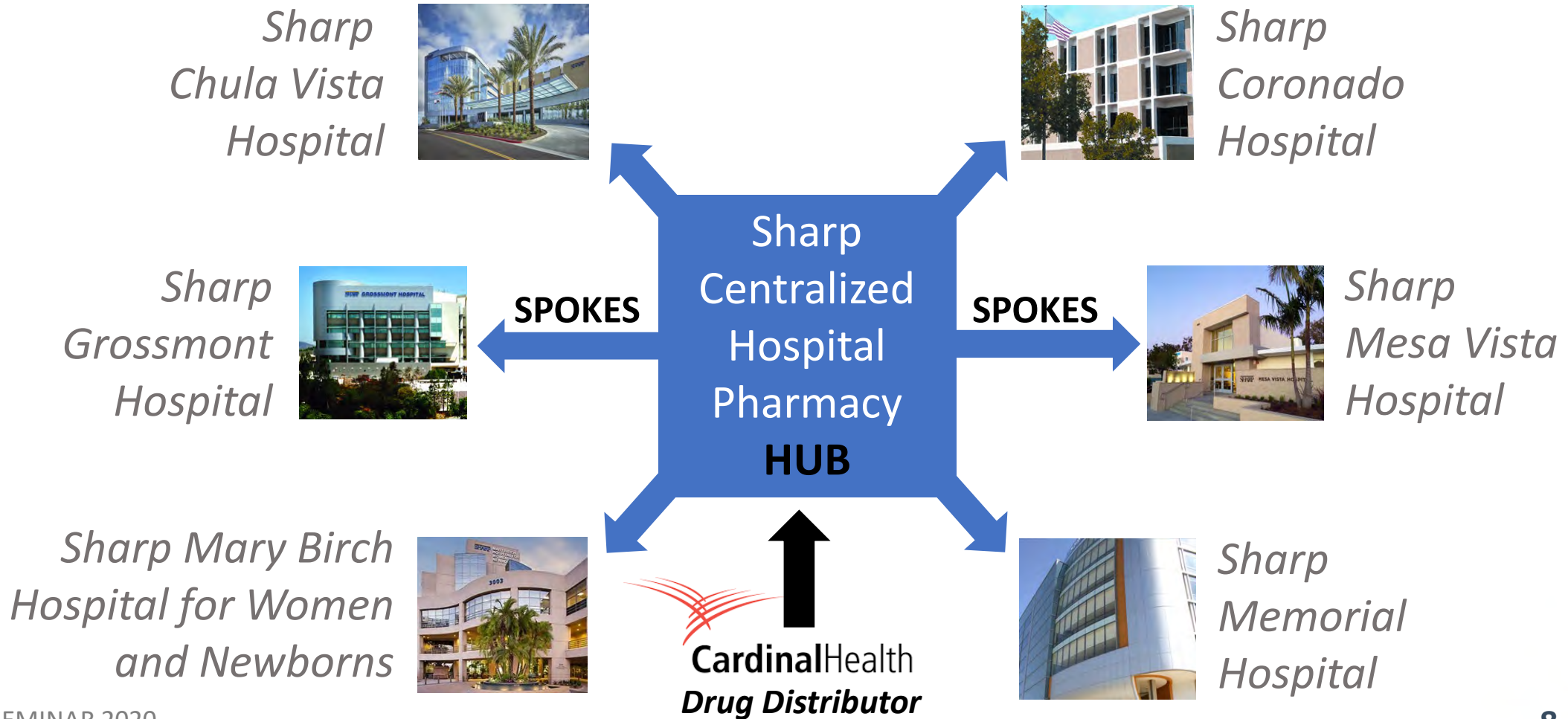


*Sharp
Memorial
Hospital*

EACH HOSPITAL NEEDS TO STOCK THEIR OWN INVENTORY



CENTRAL PHARMACY HUB AND SPOKE MODEL



SUPPORTS CENTRAL BUYING, REPACKAGING, DISTRIBUTION

*Sharp
Chula Vista
Hospital*



*Sharp
Coronado
Hospital*

*Sharp
Grossmont
Hospital*



SPOKES

SPOKES

*Sharp
Mesa Vista
Hospital*

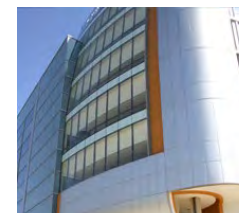


*Sharp Mary Birch
Hospital for Women
and Newborns*



HUB

**CardinalHealth
Drug Distributor**



*Sharp
Memorial
Hospital*

KEY TECHNOLOGY FOR TWO PROJECT AREAS

**Unit Dose
Repackaging**

**Automated Dispensing
Cabinet (ADC; Pyxis)
Replenishment**

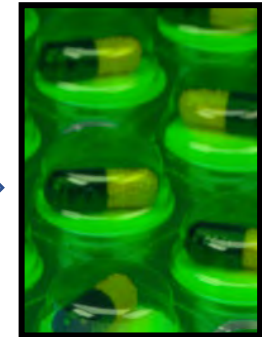


TWO PROJECT AREAS OF HUB AND SPOKE MODEL

Unit Dose Repackaging

2 processes to repackage

- Manual hospital packaging
 - Labor intensive for hospital pharmacy
- Outsourcing to Safecor
 - Contents were occasionally damaged (i.e. tablets broken/crushed)
 - Turnaround time takes 1-3 weeks
 - We are charged a service fee



TWO PROJECT AREAS OF HUB AND SPOKE MODEL

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment

2 processes to repackage

- Manual hospital picking in pharmacy
 - Labor intensive for hospital pharmacy
 - Each hospital managed inventory
- Outsourcing to Cardinal Assist (5 of 6 hospitals)
 - 12 hour gap between replenishment snapshot (8:30 PM) and morning delivery
 - Cardinal Assist medication line item fee (about \$100K per year)
 - Pharmacy team spent time sorting bags by ADC



PRE IMPLEMENTATION FORMULARY ANALYSIS

Unit Dose Repackaging

Initial formulary (about 125 meds)

- What hospital pharmacy teams were unit dose repackaging manually
- Repackaged medications outsourced to Safecor
- **Excluded meds**
 - Penicillins (allergy concern)
 - Hazardous meds
 - Liquids
 - Controlled substances

ADC Replenishment

Initial formulary (about 320 meds)

- Top meds in 6 month Cardinal ASSIST utilization report
- Defined initial formulary of what medications (about 320 meds)
- **Excluded meds**
 - Controlled substances
 - IV vials
 - Large containers (e.g. enoxaparin)

TEST QUESTION

SOME OF THE BENEFITS OF A CENTRALIZED HUB AND SPOKE MODEL ARE:


- A. Economies of scale with pharmacy automation capital
- B. Ability to purchase and distribute medication centrally
- C. Reduce burden of unit dose medication repackaging at hospitals
- D. All of the above

ANSWER: D

DOES A CENTRALIZED DISTRIBUTION MODEL MAKE SENSE FOR YOUR ORGANIZATION?

Some critical success factors to consider and evaluate

ADVANTAGES ASSESSED- STAFF EFFICIENCY

- Pyxis replenishment vs central fill:
 - Staff focus, no distractions
 - 1 minute saved per technician pull
 - 30 sec saved for pharmacist checking
- Control over delivery time
 - Minimize re-work &  stock outs
- Safety
 - Accurate picking and stocking

ADVANTAGES ASSESSED - COST REDUCTION

- Labor savings - consolidate workforce - Potential \$
- Reduced dependence on outsourcing - \$
- Reduced inventory and carrying costs - \$
- Formulary and NDC level standardization - \$
- Perpetual inventory software - ?? TBD

POTENTIAL DISADVANTAGES

- Staffing needs for central distribution
 - Do the ongoing needs meet the new demand?
- Review wholesaler/manufacturer agreements
 - Ship to/bill to is a factor
 - Central pharmacy **is not** = “Hospital” pharmacy
- Added cost
 - Inventory duplication and fear of running out

PROJECT GOALS

Unit Dose Repackaging

- Reduce and eliminate outsourcing to Safecor
- Centralize unit dose repackaging
- Just in time ordering and faster delivery

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment

- Reduce and eliminate outsourcing to Cardinal ASSIST
- Reduce time gap between ADC snapshot and delivery
- Reduce sorting time and have turn-key delivery

TEST QUESTIONS –

QUESTION SENTENCE GOES HERE: WHAT OPERATIONAL AREAS SHOULD BE ASSESSED FOR A CENTRALIZED DISTRIBUTION MODEL?

- A. Formulary opportunity
- B. Potential labor savings
- C. Executive support
- D. All of the above

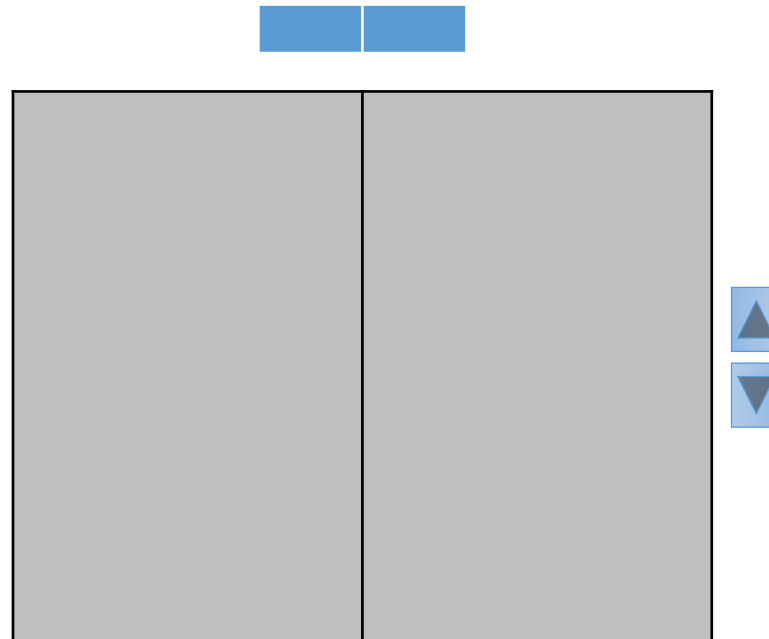
ANSWER: D

A TOOL TO HELP YOU PREPARE YOUR SALES PITCH

Using the Elevator Speech tool and knowing your audience

ELEVATOR SPEECH

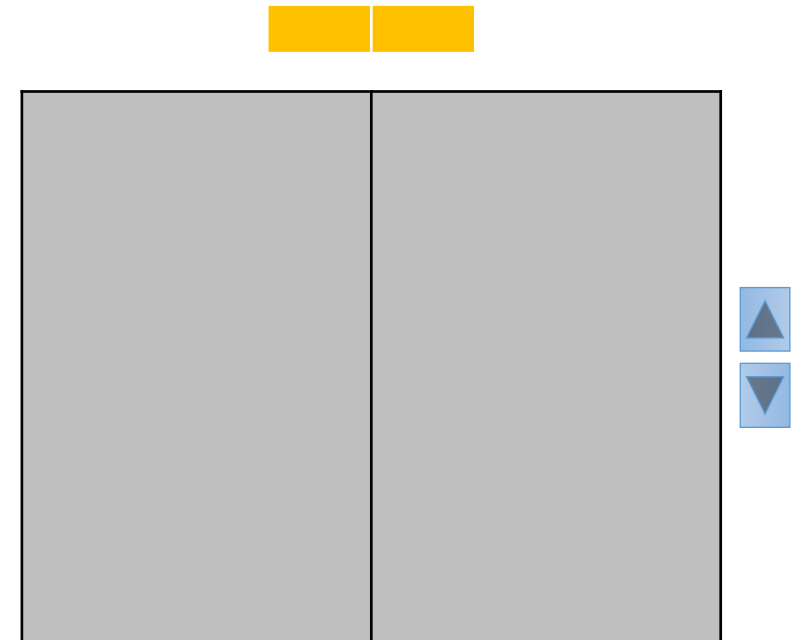
The **Elevator Speech** is a 45-60 second script to help you communicate to your audience in a concise and clear manner



ELEVATOR SPEECH – COMMUNICATION TOOL

A simple 4-part formula for your elevator speech:

- “What our project is about...”
- “Why it is important...”
- “What success will look like...”
- “What we need from you...”



ELEVATOR SPEECH – CENTRAL PHARMACY HUB AND SPOKE

Our project is about...deploying a new central distribution model at our multi-entity health system.

It is important because...we want harness automation, create standard work, and maximize economies of scale to:

1. Improve pharmacist and technician productivity
2. Provide faster medication packaging and distribution to our hospitals
3. Reduce costs from inventory burden and outsourcing fees

ELEVATOR SPEECH – CENTRAL PHARMACY HUB AND SPOKE

When we are successful...we will have metrics to show:

1. Reduced manual unit dose repackaging and ADC replenishment at our 6 hospitals
2. Decrease in services and contract fees associated with outsourcing

What we need from you...(depending on your audience)

- **Chief Financial Officer** – To review our financial proposal and sponsor our project
- **Hospital Pharmacy Director** – To send key team members to participate in project
- **Central Pharmacy Team** – To keep an open mind and help develop new processes

ELEVATOR SPEECH — GROUP PARTICIPATION

When did you most recently use an elevator speech at your workplace?

When do you think you can utilize an elevator speech in your next project or endeavor at work?

TEST QUESTIONS

THE FOLLOWING ARE KEY ELEMENTS OF ELEVATOR SPEECH EXCEPT:

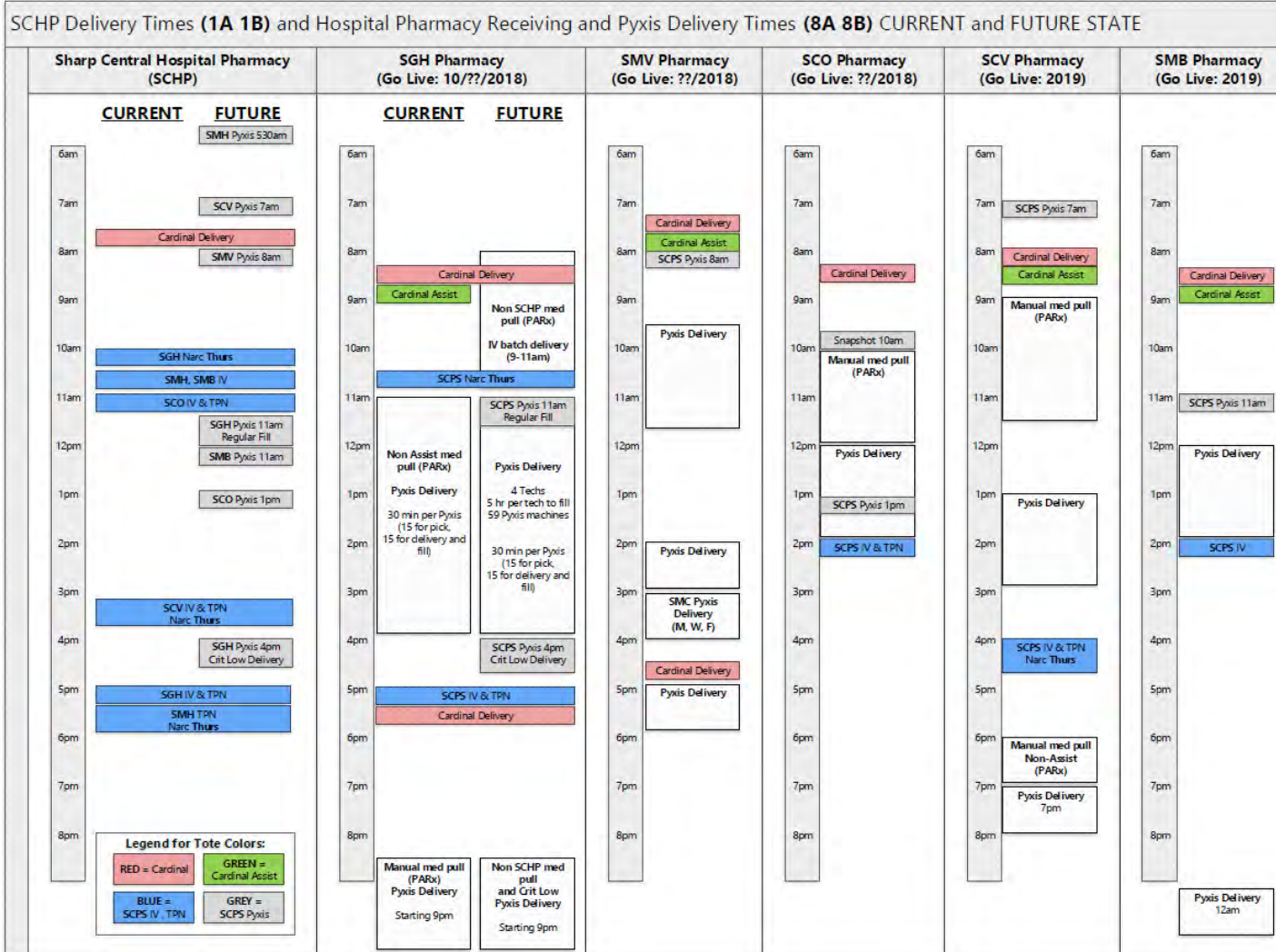
- A. What you are asking from your audience
- B. What is the importance and significance of your topic/project
- C. What your topic/project is about
- D. What success will look like
- E. What failure will look like

ANSWER: E

HOW DID WE DEVELOP AND INSERT THE 'HUB'

*Voice of the customer, value analysis, and other tools
used by our project team*

CAPTURING CURRENT STATE AT 6 HOSPITALS



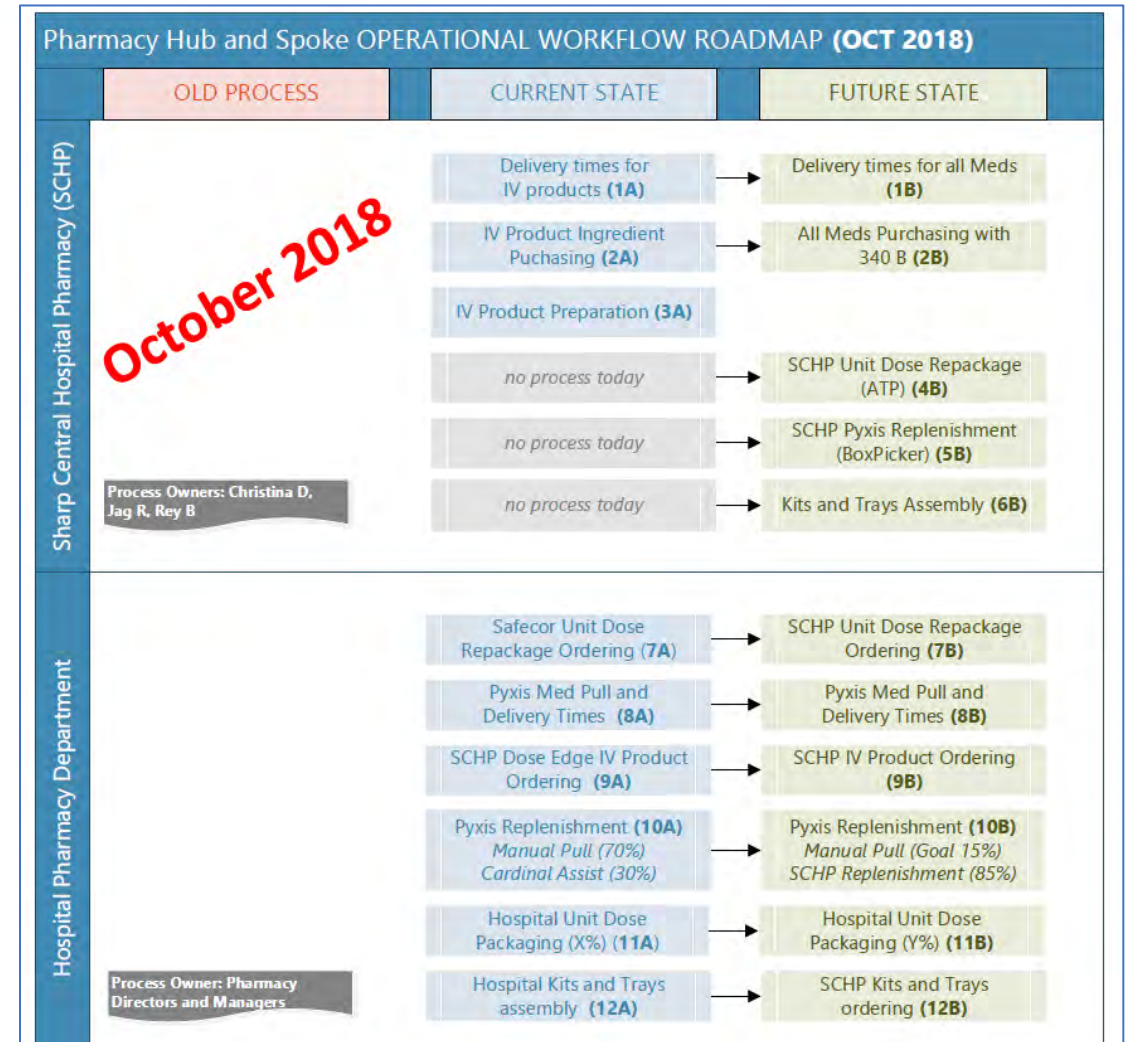
Multiple gemba visits conducted at all 6 hospitals to determine:

- Medication delivery times from all suppliers (by tote color)
- Pharmacy technician ADC replenishment times
- Determine sequence for hospital roll-out

IDENTIFIED ALL PROCESSES THAT WILL CHANGE

Swim lane diagram tool

- Overall Project Roadmap
 - Central Pharmacy
 - Hospital Pharmacy
 - Facilities
 - Informatics
 - Regulatory (i.e. 340B)
- Established process owners for each swim lane



DATABASE ALIGNMENT EFFORTS WERE NECESSARY

Electronic
Health Record

ADC Formulary

BoxPicker
Build

ADC Refill
Handheld
(PARx)

BARCODE
MEDICATION ID/MNEMONIC

Unit Dose Repackaging (POST-implementation)



*medication
canister*



Repackager



*front
single unit dose package*



back

ATP Unit dose repackaging machine

- 400 canisters, each calibrated for one medication
 - 125 canisters in use (31% utilization)
- Tabletop unit dose repackaging also used (MediDose)
- System-wide implementation in October 2018

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment (POST-implementation)



Unit dose
medications



Two BoxPicker storage
machines



Central Pharmacy team pulls medications by med station,
uses barcode to confirm medication, and packs into tote



Swisslog Boxpicker Storage units (2)

- 1,712 bins total (60% utilization)
- 14 and 21 day min/max PAR level for 6 hospitals
- System-wide implementation in May 2020

SPECIFICATIONS

- Boxpicker 1 (A-H meds)
- Boxpicker 2 (I-Z meds)

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment (POST-implementation)

- Voice of the Customer feedback how medication totes were prepped
 - By medication
 - By MedStation
 - By Zone
 - Into Totes
 - Ready for turnkey replenishment



SHARP MARY BIRCH ADC REPLENISHMENT EXAMPLE

10:01 - *swisslog* interface sends requests to BoxPicker. Central pharmacy begins pulling

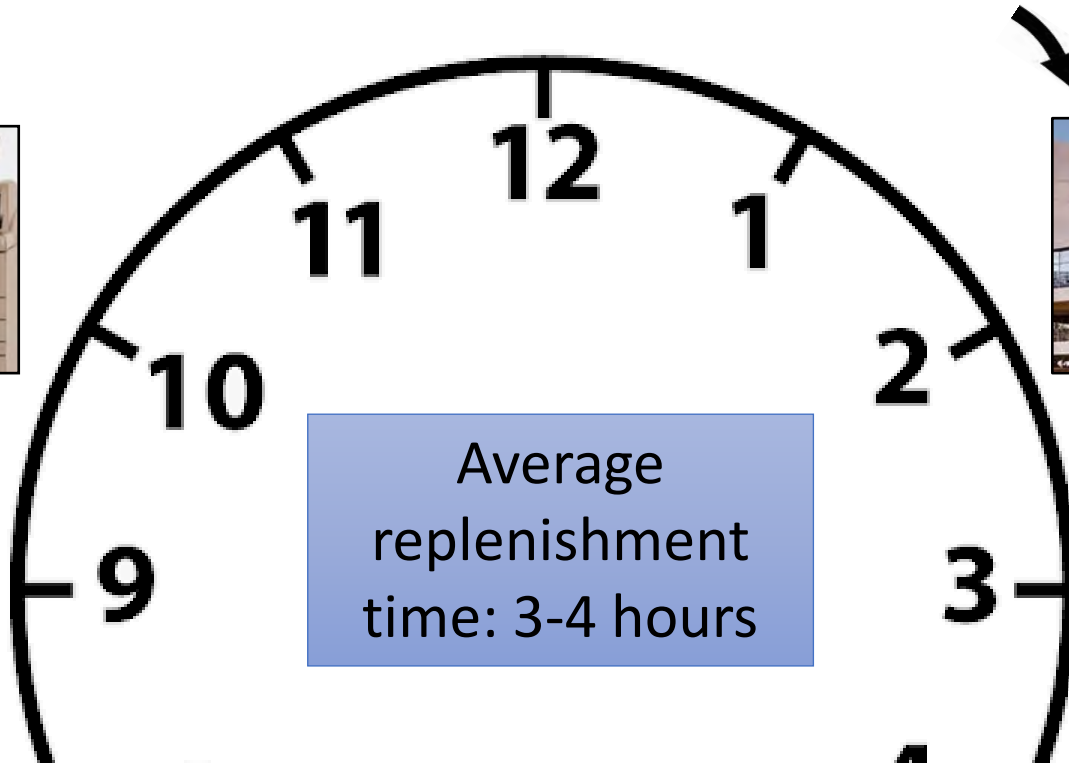


11:30 - Medication pull completed
12:00 - Central pharmacy delivers totes to hospital

10:00 - ADC Snapshot sent to *swisslog* interface



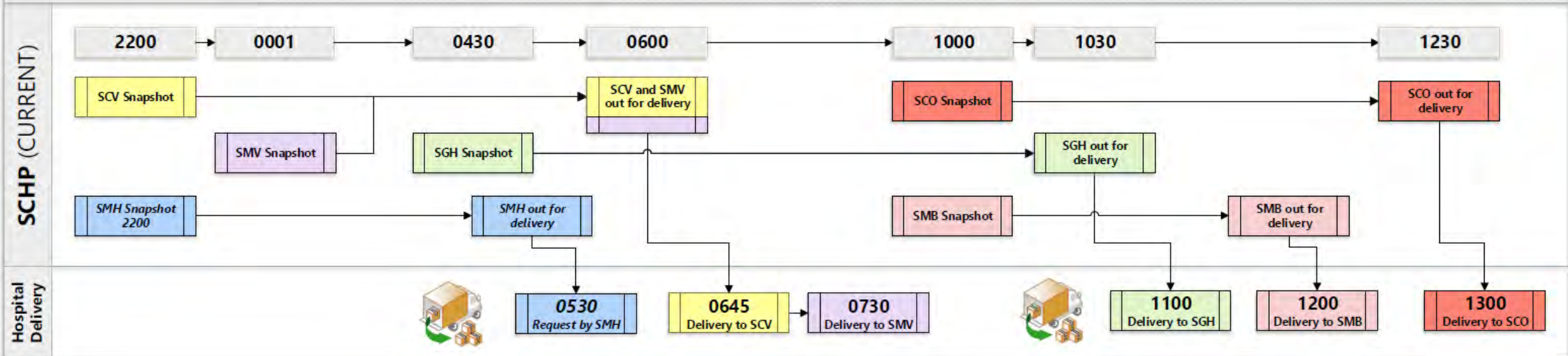
9:00 - Nurse medication pass



12:30 - Hospital pharmacy team opens totes and refills ADC

ALL HOSPITAL ADC SNAPSHOT AND DELIVERY TIMES

SCHP Operations (1B) and Pyxis Replenishment Snapshot and Hospital Delivery Times (8B)



Unique Snapshots were set up for each hospital to minimize low medication inventory after patient med pass

WHAT HAPPENED AFTER WE LAUNCHED OUR CENTRAL HUB AND SPOKE MODEL

Metrics to validate our improvements

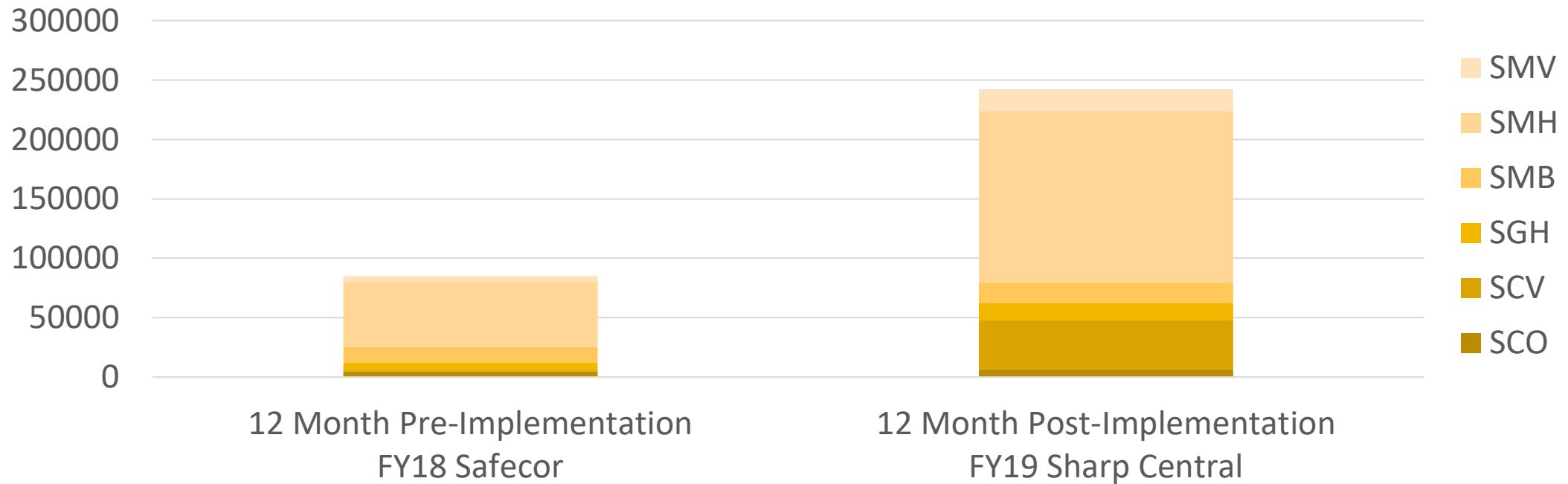
Unit Dose Repackaging (POST-implementation)

Repackaging method	Productivity	Notes
Sharp Hospital Pharmacy	100 units in 10 min (10/min)	Baseline time study
Outsource Repackaging company (Safecor)	n/a	<ul style="list-style-type: none"> • 1-3 week delivery • Service fee charged to Sharp
Sharp Centralized Hospital Pharmacy (SCHP)	1000 units in 25 min (40/min)	2-4 day delivery

- Central Pharmacy is **four times more productive** due to automation and scale
- Delivers repackaged medication much faster than outside company

Unit Dose Repackaging (POST-implementation)

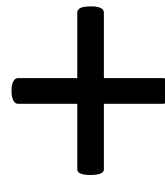
Count of Repackaged Meds



SCHP is repackaging 2.8 X more medication; our need was higher than what we used to outsource (which had higher cost and slow delivery)

SYNERGY WITH BOTH SERVICES

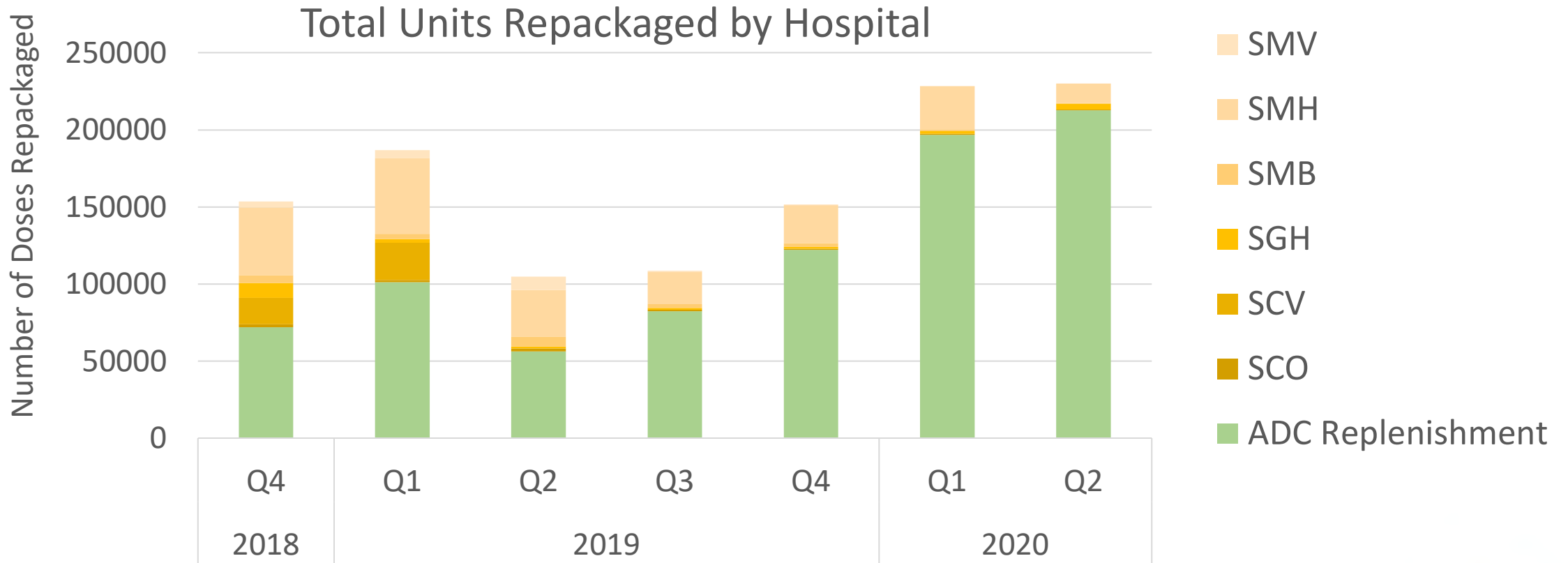
**Unit Dose
Repackaging**



**Automated Dispensing Cabinet
(ADC; Pyxis) Replenishment**

- Made unit dose repackaging as part of the ADC replenishment service
 - Repackaged items are not available through Cardinal ASSIST
- Ability to purchase one bulk bottle, distribute unit dosed medications to all hospitals

Unit Dose Repackaging (POST-implementation)



Over 166,000 units repackaged per quarter since 2018

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment (POST-implementation)

Replenishment method	Productivity	Notes
Sharp Hospital Pharmacy	1 hr to sort Cardinal ASSIST bags	
Outsource ADC Replenishment (Cardinal)	12-plus hour ADC snapshot	Reports provided by Cardinal
Sharp Centralized Hospital Pharmacy (SCHP)	4-8 hr ADC snapshot Picking time for pilot hospital <ul style="list-style-type: none"> • 6 hrs (pre-implementation) • 3.5 hrs (current) 	Time studies to pull average of 300 meds

- Central Pharmacy reduced medication picking and tote packing by 42%
- Replenishment snapshot times reduced by 40% (from 10 to 6 hours)

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment (POST-implementation)



Significant decrease in Cardinal Assist Utilization after each go live

*Source: Cardinal Assist Scorecard ending Jul 2019

PROJECT GOALS - REVISITED

Unit Dose Repackaging

- Reduce ✓ and eliminate (Phase 2) outsourcing to Safecor
- Centralize unit dose repackaging ✓
- Just in time ordering and faster delivery ✓

Automated Dispensing Cabinet (ADC; Pyxis) Replenishment

- Reduce ✓ and eliminate (Phase 2) outsourcing to Cardinal ASSIST
- Reduce time gap between ADC snapshot and delivery ✓
- Reduce sorting time and have turn-key delivery ✓

REFERENCE LIST

1. Sharp Healthcare 2019 Marketing Presentation
2. Sharp Healthcare Yellow Belt Workshop Curriculum

**SESSION
CODE:**



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