



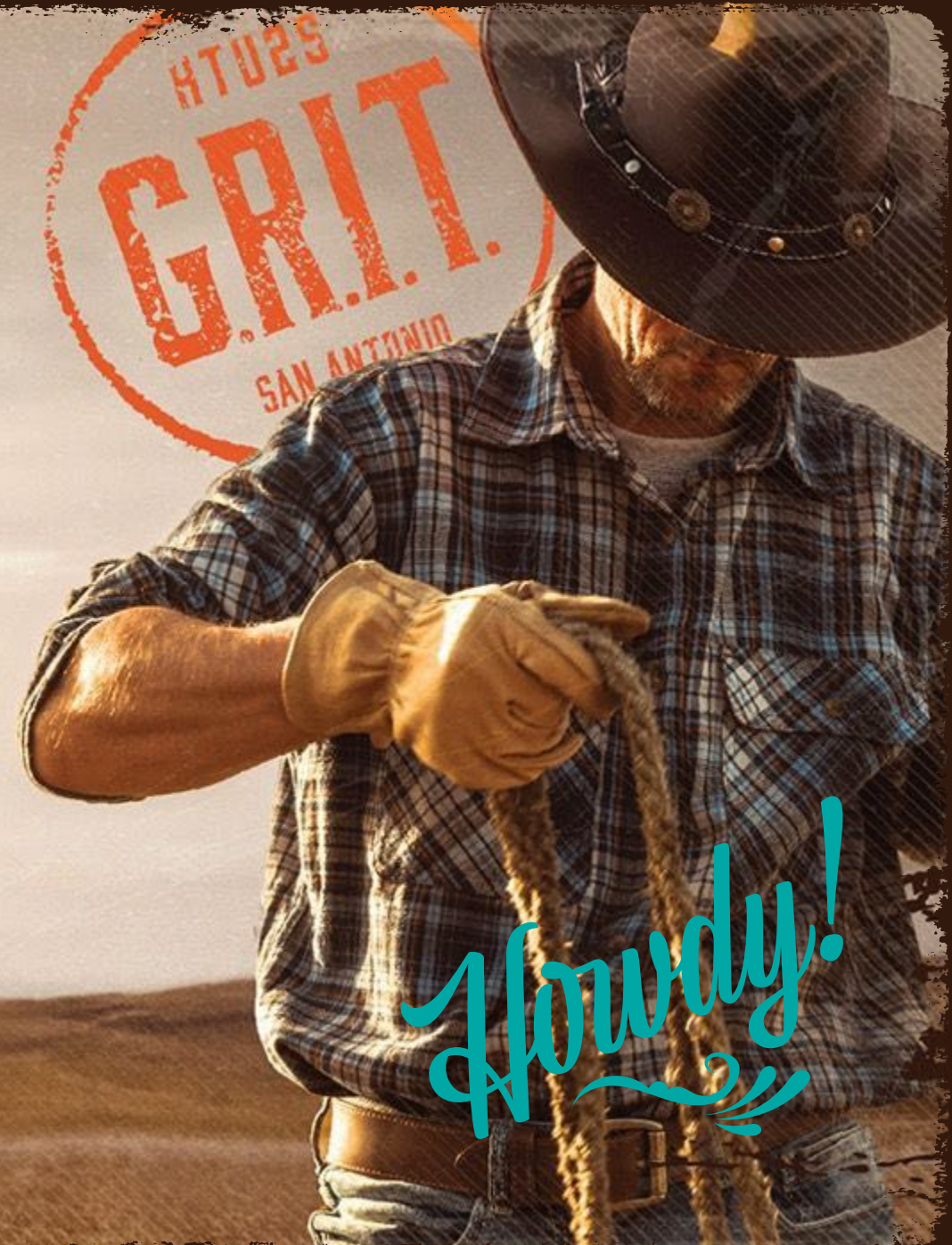
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On the CuSP of Greatness: Using a Central Pharmacy Production Center to Provide Multisite Support

THIS SESSION IS NOT OPEN TO SUPPLIERS

Applying for CE credit or need a Certificate of Participation? Be sure to snap a pic of the code shown at the end of this session.

CE Deadline: 09/30/25



Presenter Information



Aaron M. Ginsberg, PharmD

Director, Centralized Pharmacy Services

- 23 years with Scripps Health, San Diego
- PIC for CPPC
- Float-pool, TeleRx
- Loves cheeseburgers
- Has too many pets



Olivia Ronan, PharmD

Manager, Central Pharmacy Production Center

- 9 years with Scripps Health, San Diego
- Board Certified (BCSCP)
- Daily operations for CPPC
- Loves chocolate, all kinds
- Has a forceful mom voice

Disclosures



The presenters have no real or perceived conflicts of interest related to this presentation.

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Learning Objectives



At the end of this session, participants should be able to:

- Identify the basic requirements to establish and maintain a Central Pharmacy Production Center (CPPC).
- Recall the current CPPC services of one IDN, including both initial offerings and recently expanded services.
- Recognize key performance metrics to determine the return on investment after launching a CPPC.



Photograph used with permission of Scripps Health, taken by DoP at CPPC.

Outline – No sleeping in class!



Scripps	Brief Introduction to Scripps Health	Aaron
CPPC	Central Pharmacy Production Center History	Aaron
Regulations	State Licensing & <797>	Olivia
Requirements	Space, Equipment, Training, Maintenance & Consumables	Olivia
Operations	CPPC Offerings, Services, Workflow & Expansion	Olivia
KPI & ROI	Key Performance Indicators & Return on Investment	Aaron
Assessment	Audience Assessment Questions – Who Fell Asleep?	Olivia & Aaron
Q&A	Your Chance to Grill the Presenters	Olivia & Aaron

CAIT

SCRIPPS HEALTH

Central Pharmacy Production Center

Staff at the CPPC. Photograph used
with permission of Scripps Health.



About Scripps Health



- Scripps is a private, nonprofit, integrated health system in San Diego, California
- Encompasses 5 hospital campuses
- 31 outpatient centers/clinics
- More than 3,000 affiliated physicians and 16,000 employees
- Scripps treats 700,000 patients annually
- Very diverse patient mix
 - Military county
 - Border county
 - Popular vacation county
 - Wide range of incomes



Logo and name usage approved by Scripps Brand Center, Marketing & Communications.

Source: <https://www.scripps.org/about-us>, <https://www.scripps.org/locations>

Scripps Health Central Pharmacy Services



Street view of CPPC & Central Pharmacy Services in Sorrento Valley



Photograph used with permission of Scripps Health.

Scripps Health Central Pharmacy Services



- Central Pharmacy Production Center (CPPC)
 - Suite A – Warehouse
 - Suite B – Sterile compounding
 - TelePharmacy (TeleRx)
 - Remote clinical pharmacist services
 - Suite B – Front office
 - Float Pool – Onsite to train & then deployed to sites
 - Medication Access Department
 - Prior authorization & financial assistance
 - Suite A – Front office
- 
- Economy of scale
 - Maximizing value
 - Leveraging GPO
 - Medications
 - Supplies
 - Other consumables
 - Scripps is a world-class integrated delivery network (IDN)

CPPC History | Part 1



- 2012 fungal meningitis – New England Compounding Center (NECC)
 - 3 lots of compounded sterile product (CSP) – epidural methylprednisolone
 - 798 documented illnesses, 64 deaths
- 2012–2013 Scripps invested in CPPC
 - Build out of state-of-the-art sterile compounding suite
 - Focus on CSP safety/quality/efficiency
- Board of Pharmacy visits leading to 3 Department of Consumer Affairs state licenses
 - Hospital Pharmacy – 8/29/2013
 - Sterile Compounding Pharmacy – 1/28/2014
 - Centralized Hospital Packaging – 2/6/2014

CPPC History | Part 2



- 2014 CSP dominated
 - Beyond-use date (BUD) refrigerated CSP
 - Extended BUD room temperature CSP
 - Assembly/connector system CSP
 - Set production, limited “formulary”
- 2020 PIC & Supervisor changes
 - Removal of low-use/no-use hardware
 - Updated software & e-support
 - Reassess site/patient needs
 - Goal to be more customer-centric
- 2021 the “year of changes”
 - COVID dominated
 - RFID launched
 - Shortage & storage
 - Clinic expansion
 - Phase out connector systems
- 2023 Updated <797> implemented
 - Redefined extended BUD products
 - PPE, testing of CSP, ES, many changes

State Review – ~~Don't~~ Do try this at home?



- California – Centralized Hospital Packaging (CHP)
 - Same organization/ownership
 - Within 75 miles
 - For acute care (hospital licensed) facilities
 - Only 15 in our state (43,191 CA-licensed pharmacies)
- Business & Professions Code (4128)
- Defines scope for CHP
- Final products are for single administration to inpatients. Preparing:
 - Unit dose packages from bulk
 - Compounded parenteral drugs
 - Compounded unit dose drugs

“A licensed centralized hospital packaging pharmacy may prepare medications as outlined in Article 7.6 (commencing with Section 4128) of the Business and Professions Code for administration only to inpatients within its own general acute care hospital and one or more general acute care hospitals if the hospitals are under common ownership and located within a 75-mile radius of each other. A centralized hospital packaging pharmacy license may be issued to a hospital that holds a current and valid license.”

State Review – Look Before You Leap



- State rules/BoP will dictate
 - National Association of Boards of Pharmacy (NABP)
 - Shows a diverse landscape
- *Survey of Pharmacy Law – 2025*
 - State issues separate license for sterile compounding pharmacies – 12/50
 - State issues separate license for sterile compounding outsourcing (FDA) – 25/50
 - State requires compliance with USP <797> directly or incorporated – 47/50



REGULATIONS



Licensing



Regulations



- United States Pharmacopeia (USP) Chapter <797>
 - Standards for sterile compounding
 - Major changes with 2019 version – official as of November 1, 2023
 - Goal to ensure patient safety & medication quality
 - Encompasses personnel training, environmental monitoring, etc.
- CA BoP
 - Department of Consumer Affairs
 - CA considered to be “more strict” than USP <797>
 - Annual Survey – Will get to in next few slides!
- For the sites that use our products
 - California Department of Public Health (CDPH)
 - The Joint Commission (TJC)

More Details on <797>



Category 2

- BUD – 4 days room temp, 10 days ref, 45 days frozen
- ES Requirements
 - Monthly viable surface
 - Biannual viable air & non-viable particle
- Media Fill Requirements
 - Q6 months for compounders
 - Annual for overseeing compounding

Category 3

- BUD – 60 days room temp, 90 days ref, 120 days frozen
- ES Requirements
 - Weekly viable surface, monthly viable air
 - LAFH deck surface with **every batch**
 - Biannual non-viable particle
- Media Fill Requirement
 - Q3 months for compounders
 - Annual for overseeing compounding
- Garbing – no skin in buffer room. All sterile garb that cannot be reused

Licensing & Inspections



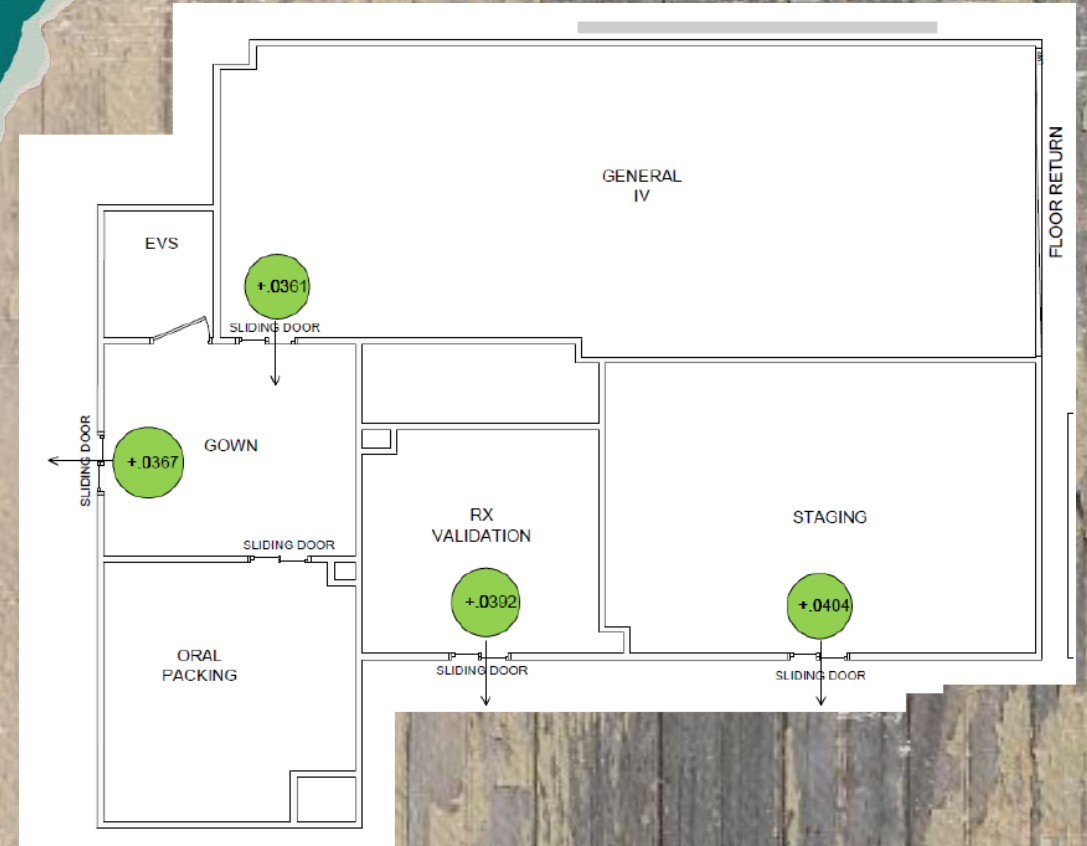
- CPPC Holds 3 Different Licenses through CA Board of Pharmacy
 - Hospital Pharmacy
 - Sterile Compounding
 - Central Distribution
- BoP Inspection – Very grueling!
 - For CPPC, focus heavily on Category 3 compounding
 - Stability Studies
 - Provided each test & corresponding certificate of analysis (CoA) document relevant to study
 - BoP asked for the study in its entirety including raw data
 - Led to more cost & effort
 - Asked to explain the raw data of the studies, including relation to USP <1225>



REQUIREMENTS



Space, Equipment,
Training, Maintenance &
Consumables

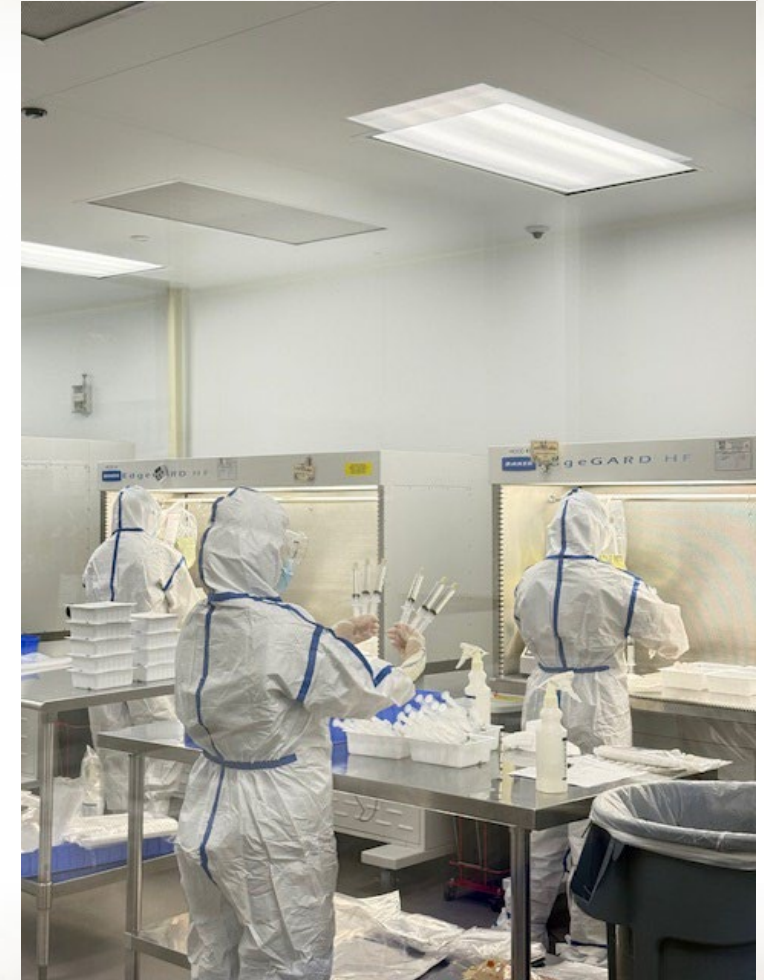


Schematic used with permission of Scripps
Health and Ops Manager at CPPC.

Space & Equipment – Cleanroom Suite



- 1,570 sq. foot International Organization for Standardization (ISO7) buffer room with adjacent ISO 8 gowning & staging rooms
- Buffer room contains 5 LAFHs, each LAFH holds a repeater pump used for compounding
- Buffer room contains 50 lbs. capacity orbital shaker
- Staging room & buffer room connected by large pass-throughs



Photographs used with permission of Scripps Health, taken by Ops Manager at CPPC.

Space & Equipment – Warehouse



- RFID Area – Trays & Tagging
- High speed oral repackager & drug storage
- Fluid, drug, supply storage
 - Approximately 500 cases of fluids & 500 cases of supplies
- Walk-in refrigerator
 - Houses annual systemwide flu vaccine
- Over stock storage for hospital & ambulatory sites



Photographs used with permission of Scripps Health, taken by Ops Manager at CPPC.

Cleanroom Maintenance



- Biannual cleanroom certification by outside vendor
 - HEPA leak filter test
 - Room air changes per hour
 - Pressure differentials
 - Non-viable particle counts
 - Viable air sampling
 - Smoke study
- Environmental Sampling
 - Performed by CPPC staff
 - Weekly surface sampling
 - Monthly viable air sampling
 - Surface sample of LAFH deck following completion of EACH batch

Training



- Media fill for pharmacies conduction Category 3 compounding
 - Pharmacists overseeing compounding – ANNUAL
 - Technicians with direct compounding – EVERY 3 MONTHS
- CA BoP – media fill must be most complex compounding recipe & contain the same amount of units as largest batch
 - CPPC media fill is 250 units & uses a repeater pump
- Dedicated Trainer for IV work
 - One-on-one training for each employee as long as needed
 - CPPC trainer give extra one-on-one training to site technicians needing extra attention/direction
- Practice hood in non-ISO space
- Environmental training
 - Initial one-on-one with CPPC specialist
 - CPPC hosts annual didactic & hands-on competency for all sites

Consumables – What We Use



- CSPs:
 - Medications
 - IV fluids
 - Compounding supplies
 - Final CSP container
 - PPE/garb
 - Cleaning/disinfecting/sporicidal
 - Container/shipping material
 - ES TSA plates
 - Media fill
 - ...& many more
- Oral, RFID & Kits/Trays:
 - Medications
 - RFID tags
 - Strip packaging/ink ribbon
 - Cleaning supplies
 - Container/shipping materials



Maximized contracting helps to keep costs low; HealthTrust partnerships



OPERATIONS



CPPC Offerings, Services, Workflow & Expansion

CPPC Small Team With a Big Job



- Team of 11 FTE
 - 2 RPh (BCSCP)
 - 8 RPhT (CPhT)
 - 1 Buyer/DP training & ES
- Hours of operations
 - M – F, 0600 – 1630
 - Closed weekends & holidays
 - Manager on call during closed hours
- Technician shifts
 - IV1 – sterile compounding
 - S – outside staging
 - PK – outside packing
 - KC – warehouse RFID & oral UD
 - B – outside Buyer
- Pharmacist shifts
 - A1 – inside IV room
 - A2 – outside IV room

IV Compounding at CPPC



Category 2

- Cardioplegia High K+
- Cardioplegia Low K+
- ceFAZolin 2gm/20mL syg
- cefTRIAXone 1gm/10mL syg
- Nitroglycerin 1mg/10mL syg
- Verapamil 1mg/10mL syg

Category 3

- Amiodarone
900mg/D5W500mL
- Magnesium sulfate
25gm/NS 250mL
- PHENYLEphrine
1mg/NS10mL syg
- Sodium citrate 4% 5mL syg
- Succinylcholine
200mg/10mL syg

Shortage Management

- Dextrose 50% syg
- Sodium citrate 4% 5 mL syg
- Zosyn 3.375 gm IVPB
- Potassium 10 mEq/100 mL IVPB

RFID – Trays & Tagging



- Daily replenishment of anesthesia trays for 3 ASCs
 - Standardized trays among 3 different ASCs
 - Developed program for daily replenishment
- Crash Cart Trays for 60 different clinic departments
 - Traded out when used or expiring
 - Offer 3 other emergent use standard kits
 - Emergency Drug Tray/Box
 - Adult Code Tray
 - Broselow Bag
- Tagging, scanning, inventory management for hospital sites

Centralized RFID – Value in Time Savings



Scripps Time Savings – Transition Tagging to CPPC					
	Chula Vista	La Jolla	Encinitas	Mercy SD	Green
Avg. Time Tagging (hours) - BEFORE	9.64	53.64	18.21	36.03	26.80
Avg. Time Tagging (hours) - AFTER	4.14	20.18	8.39	14.58	7.46
% Time Saved Monthly	57%	62%	54%	60%	72%
Avg. hours saved monthly	5.5	33.46	9.82	21.44	19.34

Avg. time tagging (before) based on 3-month average immediately prior to transition
12 secs per item tag/scan

Oral Repackaging

- Rolled out phase one in February 2025 – purchased high speed packager machine
 - Phase 1 included 104 medications
- Packager capacity is 336 calibrated medication canisters
- Tray fill option for on-demand
- Focus on shifting work from hospital sites & saving money
- Operations include RPh & technician
- Challenges:
 - 6-month BUD once medication placed in canister
 - FTE neutral



Photograph used with permission of Scripps Health, taken by Ops Manager at CPPC.



Environmental Sampling

Provides each site (5 hospitals & 5 hem/onc infusion centers with supplies & paperwork)

Site is responsible for completing own sampling

CPPC incubates & reads plates on behalf of all sites

CPPC hosts initial & annual training/competency for all sites



KPI & ROI



Key Performance Indicators & Return on Investment

Key Performance Indicator (KPI) – # CSP FY25



CPPC monthly production of compounded sterile products (CSP):

- First 8 months = 330,490
- Estimated FY total = 495,735
- Data pulled monthly from EMR
- Total CSP includes those sent for sterility or potency tests

2025 FYTD # CSP Produced at CPPC



Source: Scripps Health data FY2025.

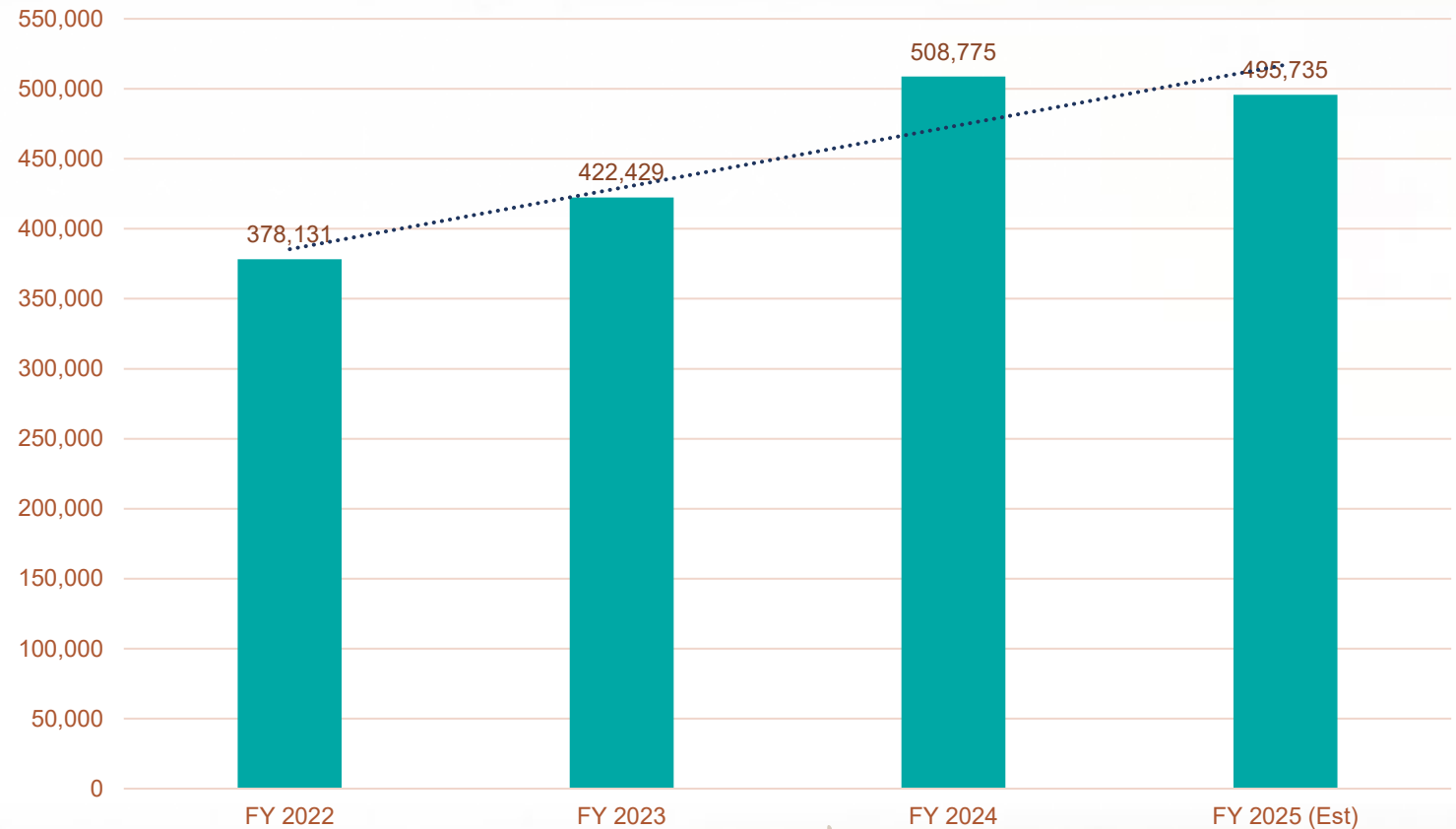
KPI Annual Trending – # CSP



CPPC annual production of compounded sterile products (CSP):

- Increases in the past 4 years
- FY25 limited by shortages
- Estimated FY25 total = 495,735
- Data pulled monthly from EMR
- Total CSP includes those sent for sterility or potency tests

Annual FY 2022-2025 # CSP Produced at CPPC



Source: Scripps Health data FY2022–2025.

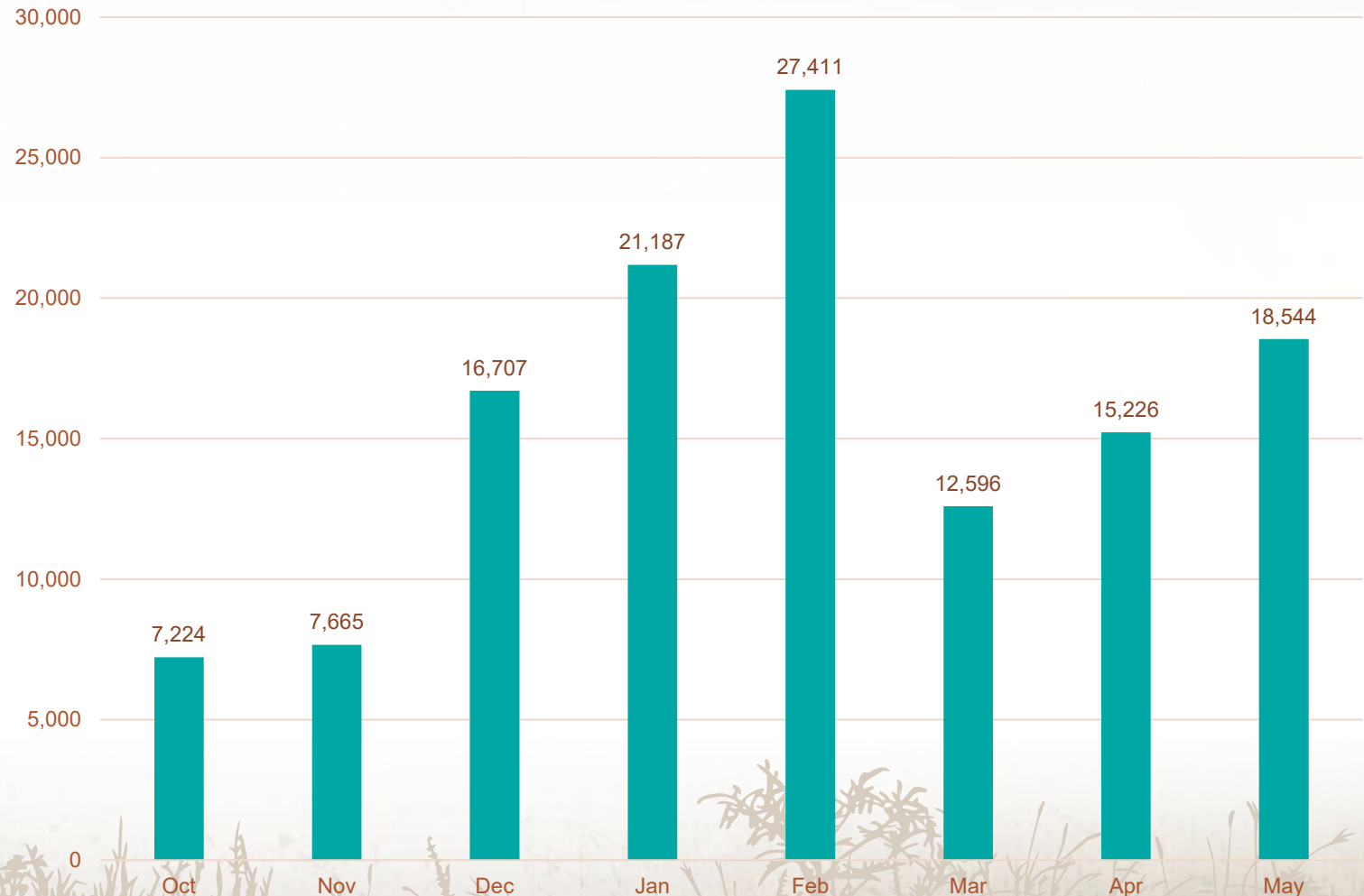
KPI – # RFID Tagged Medications FY25



2025 FYTD # RFID Tagged Medications Produced at CPPC

CPPC monthly production of RFID tagged medications:

- First 8 months = 126,560
- Estimated FY total = 189,840
- Data pulled monthly from RFID software
- Variation based on usage & patient volumes



Source: Scripps Health data FY2025.

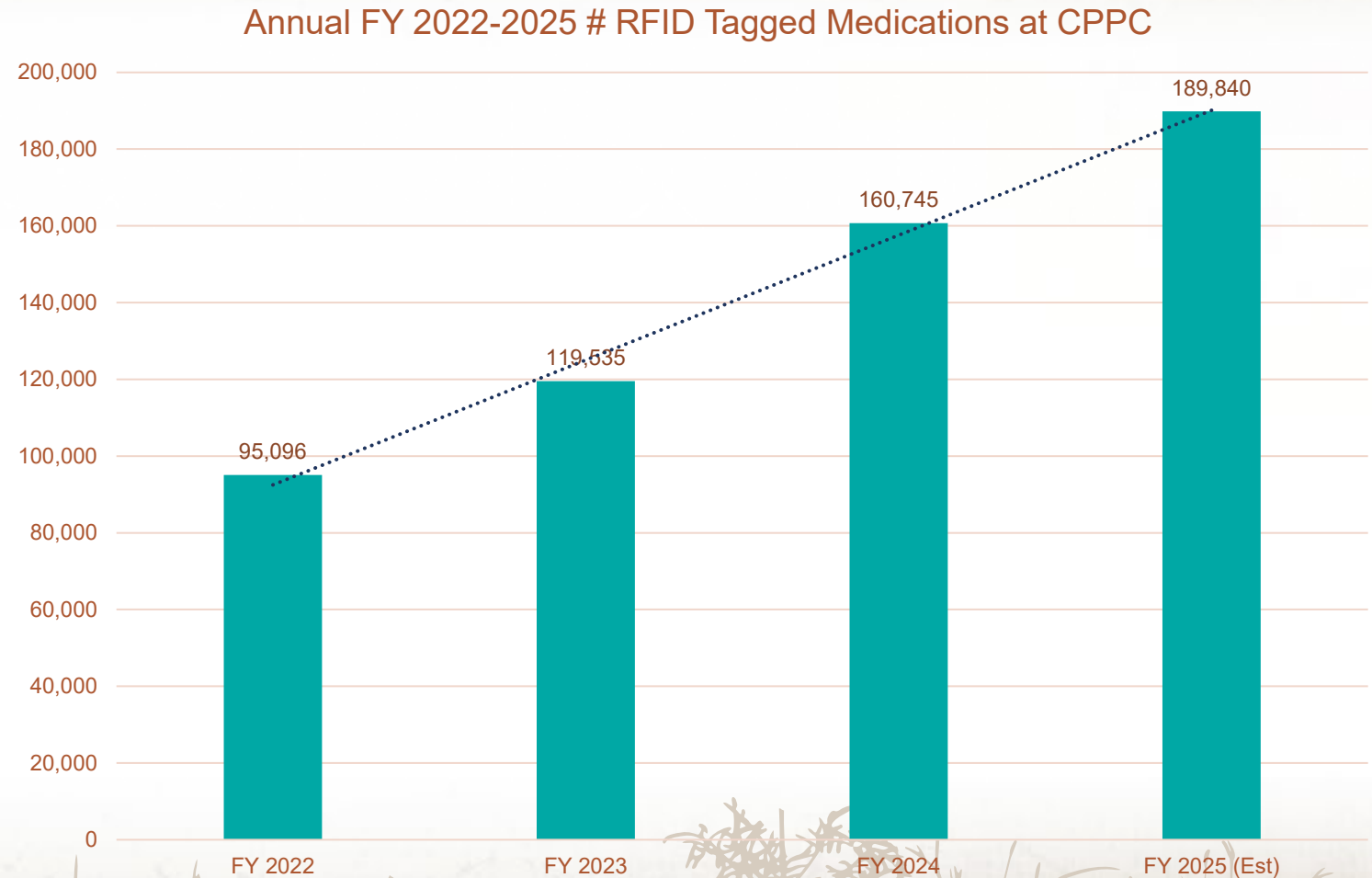
KPI Annual Trending – # RFID Tagged



CPPC annual production of RFID tagged medications:

- Increases in the past 4 years
- Estimated FY25 total = 189,840
- Data pulled monthly from RFID software
- Driven by both automated ordering & on-demand orders

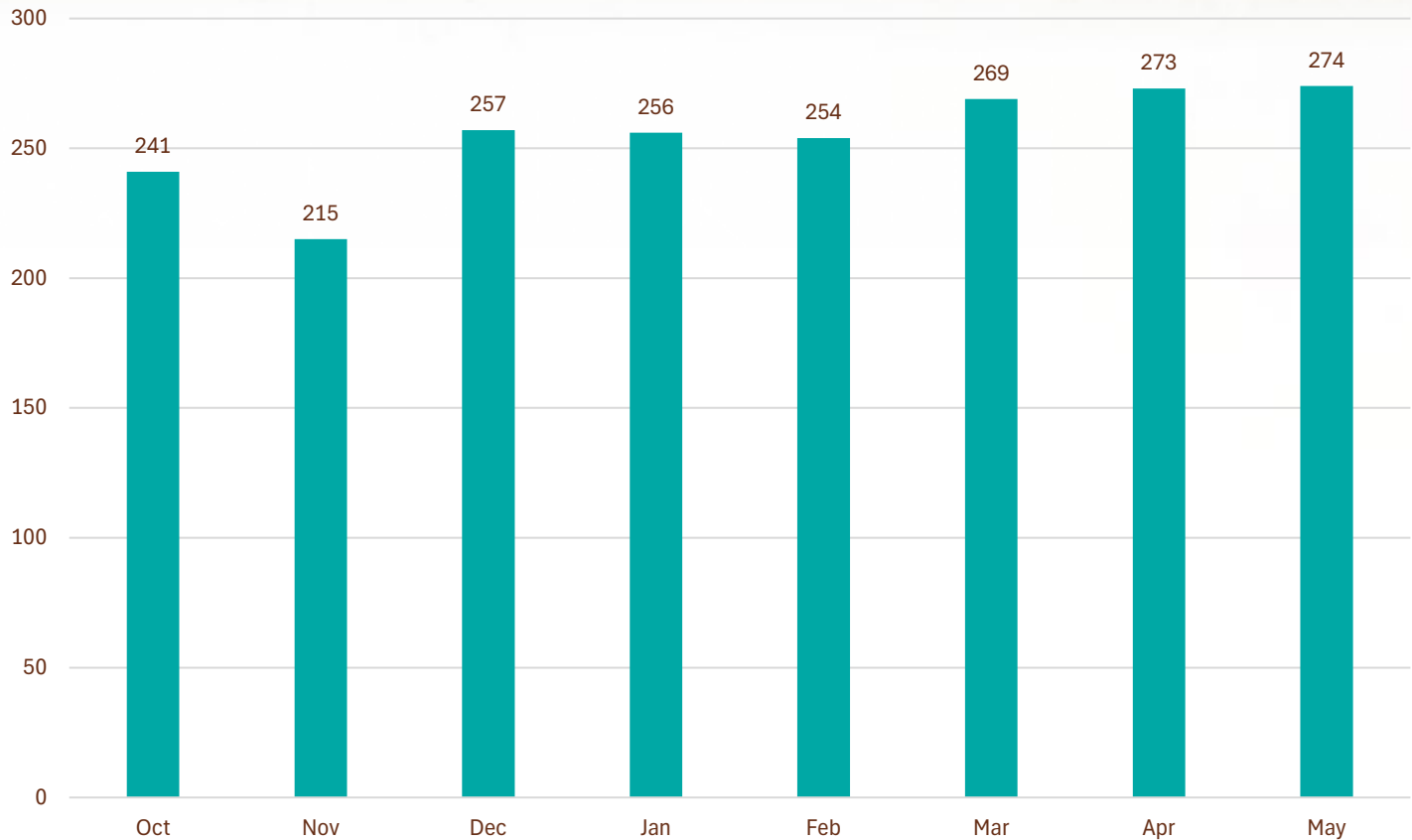
Source: Scripps Health data FY2022–2025.



KPI – # Medication Trays/Kits from CPPC FY25



2025 FYTD # Medication Trays/Kits Produced at CPPC



CPPC monthly production of medication trays/kits:

- First 8 months = 2,039
- Estimated FY total = 3,059
- Data pulled monthly from RFID software
- Variation based on usage (ASC) and expiration (clinics)

Source: Scripps Health data FY2025.

KPI Annual Trending – # CPPC Trays/Kits

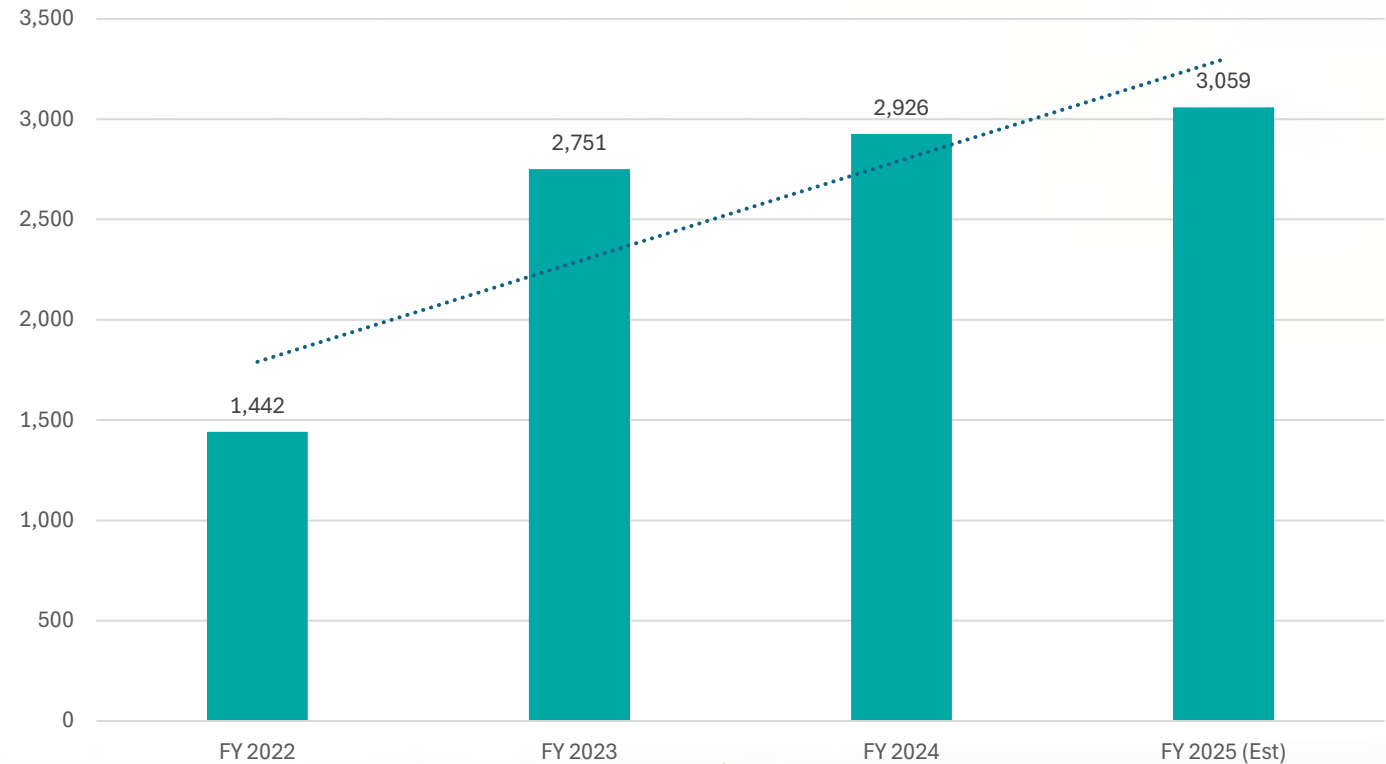


CPPC annual production of medication trays/kits:

- Increases in the past 4 years
- Estimated FY25 total = 3,059
- Data pulled monthly from RFID software
- FY23 expansion ASCs

Source: Scripps Health data FY2022–2025.

Annual FY 2022-2025 # Medication Trays/Kits
Produced at CPPC



KPI – # Medication Oral UD FY25 CPPC

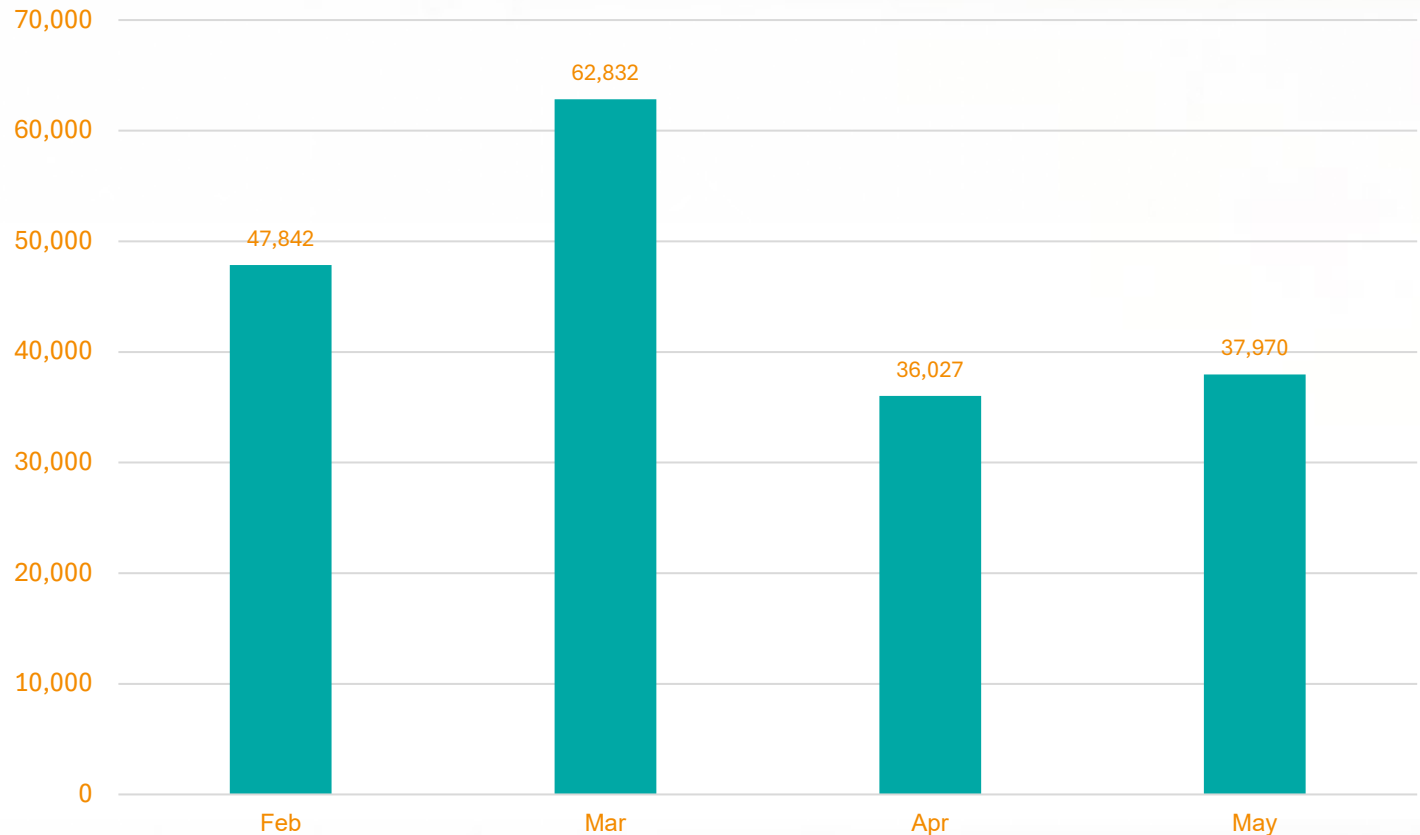


CPPC monthly production of medication oral UD since launch:

- First 4 months = 184,671
- Estimated FY total = 554,013
- Data pulled monthly from proprietary system software
- April/May machine downtime

Source: Scripps Health data FY2025.

2025 FYTD # Medication Oral UD Produced at CPPC



Return on Investment (ROI) = CSP



- Succinylcholine 200 mg/10 mL (20 mg/mL) syringe
- Total system use 16,274 (does not include vials)
- Annual production of 14,474 --> ROI of \$55.7K to \$423.7K

Pharmacy	Syringe Cost	Estimated Annual Spend	ROI \$	ROI \$ BUD Adjusted*
503B #1	\$32.63	\$472,287	\$394,127	\$262,751
503B #2	\$34.67	\$501,814	\$423,654	\$282,436
503B #3	\$15.02	\$217,399	\$139,240	\$55,696
CPPC	\$5.40	\$78,159	---	---

*BUD of 90 days for 503B #1 and #2, BUD of 115 days for 503B #3.

Return on Investment (ROI) = CSP



- **Cardioplegia Bags**
 - 503B purchased
 - Updated standard bag
 - CPPC production FY24
 - Category 2 bag
- **Annual production**
 - 1,404 bags
 - ROI of \$256,893

FY24	503B Cardioplegia to CPPC
OCT	\$25,186
NOV	\$20,148
DEC	\$20,148
JAN	\$25,186
FEB	\$20,148
MAR	\$20,148
APR	\$25,186
MAY	\$20,148
JUN	\$20,148
JUL	\$20,148
AUG	\$20,148
SEP	\$20,148
FY24 Total	\$256,893

Source: Scripps Health data FY2024. For comparison use only.

Return on Investment (ROI) = CSP



- **Sugammadex 100 mg/mL**
 - Vials purchased – 2 mL
 - Aliquoted to 0.5 mL
 - Category 3 syringe
- **Annual production**
 - ~108,000 syringes
 - ROI of \$169,978
- **Challenges**
 - 340B not optimized
 - M.D. practice/use
 - Waste

FY24	CPPC Repackaged Sugammadex
OCT	\$75,547
NOV	(\$16,657)
DEC	(\$30,156)
JAN	(\$42,654)
FEB	(\$78,673)
MAR	\$121,434
APR	\$149,277
MAY	(\$69,425)
JUN	\$89,084
JUL	\$9,651
AUG	(\$16,709)
SEP	(\$20,739)
FY24 Total	\$169,978

Source: Scripps Health data FY2024. For comparison use only.

Return on Investment (ROI) = CSP



- **Amiodarone 900 mg/500 mL D5W**

- Category 3
- Average monthly usage 335 bags
- Annual spend \$224,155
- CPPC production cost \$63,894
- Savings **\$160,261**
- BUD-adjusted savings \$144,235
- 2 months to offset Category 3 testing

- **Sodium Citrate 4% 3 mL syringe**

- Category 3
- Average monthly usage 714 syringes
- Annual spend \$52,762
- CPPC production cost \$15,080
- Savings **\$37,682**
- BUD-adjusted savings \$16,150
- 12 months to offset Category 3 testing

Source: Scripps Health data FY2024-2025. For comparison use only.

Return on Investment (ROI) = RFID



- Olivia time trial – sites saved pharmacy tech (RPhT) time
- Total RPhT savings – nearly 90 hours per month
- Average Scripps RPhT pay – \$32.35/Hr
- System savings ~ \$35K annualized
 - May underestimate (site overtime)
 - Saved technician buyer time

RFID ROI	
RPhT \$/Hr	\$32.35
Hours/month	89.5
ROI/month	\$2,895
Annualized	\$34,744

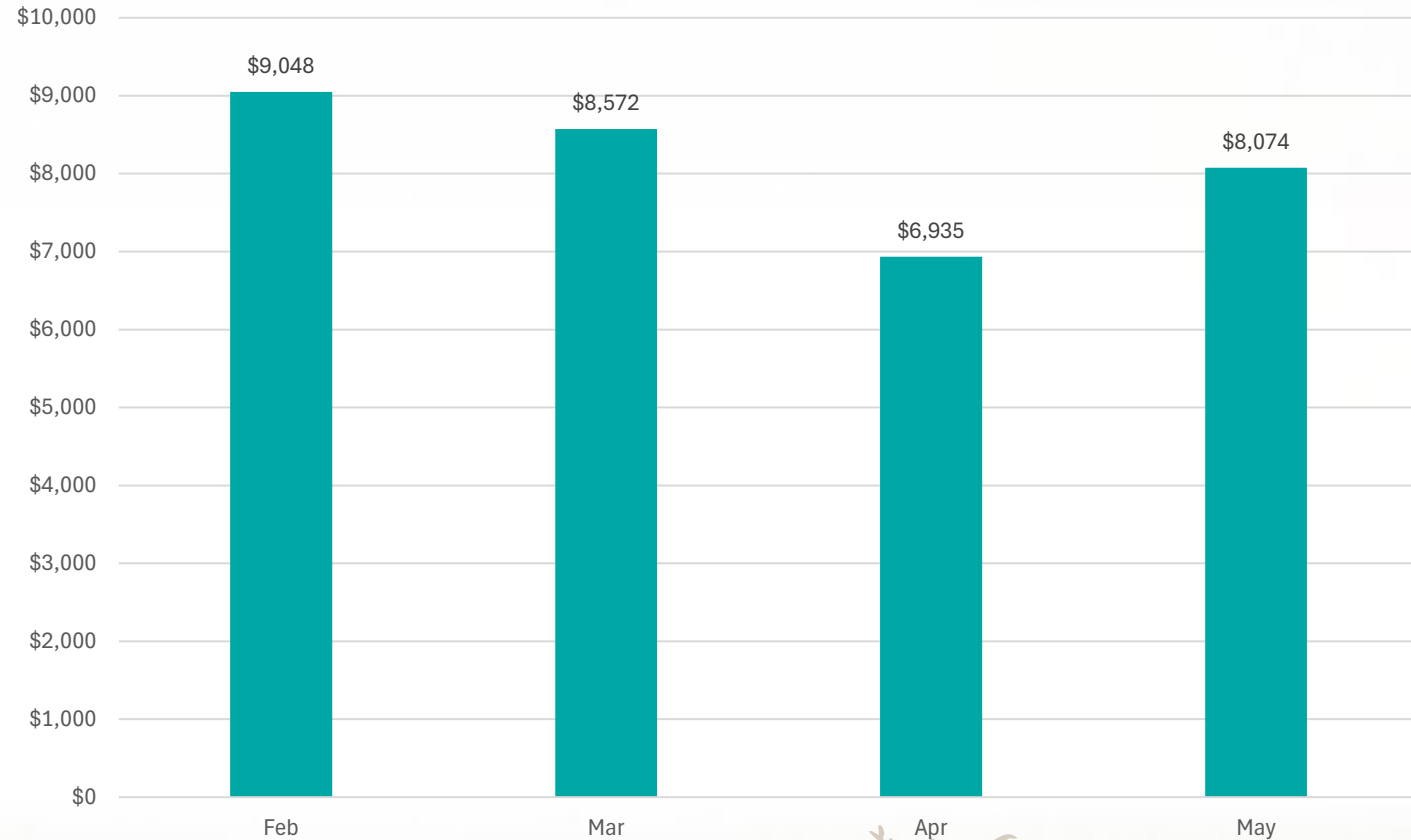
Scripps Time Savings – Transition Tagging to CPPC						
Hospital Site	CV	LJ	EN	SD	GN	Total
Avg. hours saved monthly	5.5	33.5	9.8	21.4	19.3	89.5

Source: Scripps Health data FY2023–2025. For comparison use only.

ROI – \$\$\$ Medication Oral UD FY25 CPPC



2025 FYTD \$ Medication Oral UD Savings at CPPC



CPPC monthly \$ savings on oral UD since launch:

- First 4 months = \$32,628
- Estimated FY total = **\$97,885**
- \$ comparator by DoP/PIC
 - Versus purchase of UD
 - Versus site UD materials
 - Not labor based
- April/May machine downtime

Source: Scripps Health data FY2025.



Assessment Questions



Audience Q&A



Assessment Question #1



Which of the following are within the legal scope of Scripps Health CPPC?

- A. Compounding parenteral medications and preparing oral unit-dose packages from bulk bottles or bulk manufacturer vials for inpatient use at any of the Scripps Health 5 hospital campuses.
- B. Compounding parenteral medications and preparing oral unit-dose packages from bulk bottles or bulk manufacturer vials for outpatient use at any of the Scripps Health 31 outpatient clinics.
- C. Warehouse storage of medications for distribution in their original manufacture packaging for clinics and hospitals in the Scripps Health system.
- D. Both A and C

Assessment Question #1



Which of the following are within the legal scope of Scripps Health CPPC?

- A. Compounding parenteral medications and preparing oral unit-dose packages from bulk bottles or bulk manufacturer vials for inpatient use at any of the Scripps Health 5 hospital campuses.
- B. Compounding parenteral medications and preparing oral unit-dose packages from bulk bottles or bulk manufacturer vials for outpatient use at any of the Scripps Health 31 outpatient clinics.
- C. Warehouse storage of medications for distribution in their original manufacture packaging for clinics and hospitals in the Scripps Health system.
- D. Both A and C

Assessment Question #2



Which of the following are required at CPPC but not at our Scripps Health 5 hospital campuses?

- A. Category-3 garb in the ISO7 room, including goggles, sterile full-coverage outer coveralls, and no exposed skin.
- B. Environmental monitoring of the ISO 5, ISO7, and ISO8 spaces on a weekly basis.
- C. Responsibility to ensure mitigating actions and patient safety in the event of a medication recall.
- D. Both A and B

Answer – Assessment Question #2



Which of the following are required at CPPC but not at our Scripps Health 5 hospital campuses?

- A. Category-3 garb in the ISO7 room, including goggles, sterile full-coverage outer coveralls, and no exposed skin.
- B. Environmental monitoring of the ISO 5, ISO7, and ISO8 spaces on a weekly basis.
- C. Responsibility to ensure mitigating actions and patient safety in the event of a medication recall.
- D. **Both A and B**

Assessment Question #3



Which of the following are key performance indicators (KPI) demonstrating the value of a CPPC?

- A. The number of sterile compounded products produced at CPPC.
- B. The number of oral unit-dose medications produced at CPPC.
- C. The number of RFID tagged medications and medication trays/kits produced at CPPC.
- D. The \$ medication acquisition savings and workhours reduced through CPPC production.
- E. All of the above

Answer – Assessment Question #3



Which of the following are key performance indicators (KPI) demonstrating the value of a CPPC?

- A. The number of sterile compounded products produced at CPPC.
- B. The number of oral unit-dose medications produced at CPPC.
- C. The number of RFID tagged medications and medication trays/kits produced at CPPC.
- D. The \$ medication acquisition savings and workhours reduced through CPPC production.
- E. All of the above

Assessment Question #4



Which of the following are current services of Scripps Health CPPC?

- A. Category 2 & 3 sterile compounded medications.
- B. RFID tagged medications.
- C. Non-sterile compounding of topical medications.
- D. Oral repackaged medications for unit-dose administration.
- E. A, B and D

Assessment Question #4



Which of the following are current services of Scripps Health CPPC?

- A. Category 2 & 3 sterile compounded medications.
- B. RFID tagged medications.
- C. Non-sterile compounding of topical medications.
- D. Oral repackaged medications for unit-dose administration.
- E. A, B and D

Assessment Question #5



Basic requirements to establish and maintain a Central Pharmacy Production Center (CPPC) include:

- A. One or more BoP licenses, depending on state specific legislation.
- B. A certified cleanroom suite.
- C. A rigorous environmental sampling program.
- D. All of the above

Assessment Question #5



Basic requirements to establish and maintain a Central Pharmacy Production Center (CPPC) include:

- A. One or more BoP licenses, depending on state specific legislation.
- B. A certified cleanroom suite.
- C. A rigorous environmental sampling program.
- D. All of the above

References:



1. Centralized insourcing of sterile compounding: One multihospital health system's journey. Bracero D, Carlos Pagan L, Rowe A, Cassano AT. Am J Health Syst Pharm. 2022 Jul 22;79(15):1281-1289. doi: 10.1093/ajhp/zxac116.
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Thanks y'all!



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