Telepharmacy in the Outpatient Infusion Setting

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Introductions

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• no financial disclosures to report

Objectives

• Define telepharmacy
• Describe the different ways to utilize telepharmacy within your organization
• Demonstrate how telepharmacy can allow a pharmacist to provide oversight to a remote clinic

Telepharmacy

• What is it?
• Why do we need it?
• Where do we need it?
• How is it beneficial?
• When was it first described?
• Who is Baptist Memorial Healthcare/Baptist Cancer Center?

Telehealth vs Telemedicine

• Telehealth (or Telemonitoring) as defined by CMS
  "the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision and information across distance."
• Telemedicine as defined by CMS
  "seeks to improve a patient’s health by permitting two-way, real time interactive communication between the patient, and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment"
  ▪ https://www.medicaid.gov/medicaid/benefits/telemed/index.html

Telepharmacy- What is it?

• Telepharmacy is the provision of pharmacy services through telecommunications.
• Per NAPB in the Model State Pharmacy Act and Model Rules, “the provision of pharmacist care by registered pharmacies and pharmacists located within U.S. jurisdictions through the use of telecommunications or other technologies to patients or their agents at distances that are located within U.S. jurisdictions”
4 Types of Telepharmacy

• Inpatient (remote order entry review and ADS)
• Remote dispensing
• IV Admixture
• Remote counseling (cognitive)

ASHP Statement on Telepharmacy

• Further defines as operations of drug review, monitoring, dispensing, sterile and nonsterile compounding, MTM, patient assessment, patient counseling, clinical consultation, outcomes assessment, decision support and drug information.
• Especially useful when a pharmacist is not physically present, pharmacy resources are limited or in geographically isolated healthcare facilities
• “Telepharmacy provides a solution for order review and verification in tertiary medical centers when staffing, particularly oncology, is limited.”

Tennessee Board of Pharmacy- The Law

• Has rules and regulations on telepharmacy
• Has licensed pharmacies since 2008
• Limits to pharmacies and satellite clinics located within a Federally Qualified Health Center
• Central Pharmacy will provide verification through computer video/audio link of all medications dispensed by a technician at the satellite clinic.
• No controlled substances can be dispensed
• Off site pharmacist provides verification and counseling and site visits twice a month

How do we operate?

• Baptist uses a combined model of the Inpatient, Remote Dispensing, and IV Admixture.
• Baptist Cancer Center Sites are not licensed pharmacies, but under the purview of the Tennessee Medical Board
• Smilow Cancer Hospital utilized a similar approach to remote verification of rural cancer clinics.
  ▫ Implemented remote verification of telepharmacy services to 11 locations in Connecticut
  ▫ Implementation was worded as a pilot program but lead to a change in state law

Why is it needed?

• ASHP: “Solution... when staffing in oncology is limited”
• Question: Is oncology pharmacy staff limited in the state of Tennessee?
• Question: How many BCOP pharmacists are in TN?
  ▫ 20, 40, 60, 100
  ▫ 41 BCOP pharmacists
  ▫ Question How many oncology patients are in TN?
    ▫ 50k, 100k, 200k, 300k
    ▫ ~300,000 cancer patients in TN

Patient to Pharmacist Ratio

TN Cancer Patient to BCOP pharmacist ratio of 7,317 : 1
Where is telepharmacy needed?

List of the 41 current BCOP pharmacists in TN

How is it beneficial?

- "Increases safety of chemotherapy preparation"¹
- "Tele-oncology improves cancer care"²
- Telepharmacy for remote verification in oncology practices avoids thousands of patient travel miles and potential delays in treatment³

1. US Pharm. 32 (11): 73
2. Oncology Times 33 (2): 4
3. jOncol Pharm Practice 18 (3) 366-376

When was telemedicine/pharmacy first used?

- Bubonic Plague 1347-1350¹
  - Smoke signals to warn of disease spread
- Australia's Royal Flying Doctor Service 1942²
  - Medicine chests deposited country-wide
  - Medications administered during telehealth consultations via radio
- Telepharmacy implementation in US began in 2000s¹
  - Alternative means of delivering pharmacy services to rural areas

1. Handbook of Human Factors and Ergonomics in Health Care and Patient Safety

Audience Question

- Telepharmacy can be cognitive or distributive pharmacy services?
  - True

Introduction to BMHCC and Baptist Cancer Center

Baptist Memorial Health Care Corporation: Tennessee, Mississippi & Arkansas

- 20 hospitals after the recent merger of Mississippi Baptist Health System
- Hundreds of clinics and over 500 employed physicians
- 15,000 employees
- Flagship Hospital in Memphis, TN
Baptist Cancer Center: TN, MS, AR
- FACT accredited HSCT program
- 20 infusion centers
- 22 medical oncology offices, 25 employed physicians

Total Number of Patients in 2015
- 5925 Total Cancer Patients Treated Across System
  - GI: 1077
  - Lung: 1090
  - Breast: 1150

Distance to National Cancer Centers

Avoiding Miles Traveled

Expansion of Pharmacy Footprint into Rural West TN

Our Use of Telepharmacy (Dose Edge)
- Hospital-based infusion rooms
  - Not a licensed pharmacy, but Joint Commission surveyed
  - Onsite chemo trained technician uses video and photo technology for remote pharmacist to verify order and each step of preparation before dispensed and administered
  - No FTEs added and funded as a monthly “purchased service” in operational budget
Union City and Dyersburg, TN

- Union City
  - 117 miles from Memphis
  - Estimated Population 10,589
  - 12 Pharmacists Registered
  - 4 Retail Pharmacies
  - 173 Bed Hospital

- Dyersburg
  - 80 Miles from Memphis
  - Estimated Population 16,685
  - 32 Pharmacists Registered
  - 10 Retail Pharmacies
  - 120 Bed Hospital

Union City Fun Fact: Discovery Park

- "World-class educational and entertainment experience"
  - > 70,000 SF of exhibits focused on nature, science, technology, history, and art
  - Mission is to enhance the educational experience of children and adults and to inspire them to see beyond their current level of knowledge
  - Funded primarily by the Robert E. and Jenny D. Kirkland Foundation

Dyersburg Fun Fact: Lenox Bridge

- Built in 1917, the hand-operated, swing span bridge originally crossed the Obion River west of Lenox
- Relocated and rehabilitated to span a boat canal in the Lakewood Subdivision in 1987
- Only surviving “swing span, pony Pratt through truss bridge” in the country

Telepharmacy Utilizing Pharmacy Workflow Managers

- A system to “automate the process of routing, preparing, inspecting, tracking and reporting on IV and oral liquid doses”
- Aids in streamlining pharmacy operations, promotes dose preparation safety, and reduces waste

What is a Pharmacy Workflow Manager?

- Manufactured by Baxter
- Automatically routes doses to appropriate workstation
- Automated dose and dilution calculations
- Alerts technician to errors before they occur
- Allows remote pharmacist verification from any computer on the hospital’s network
- Barcode-based dose tracking
- Detailed reporting on every dose made with the system
### i.v. SOFT Assist
- Manufactured by OmniCell
- Small footprint
  - Does not affect laminar flow
- Integrated gravimetrics
- Barcode scanning
- Step-by-step recording
- Customizable workflows

### BD Cato
- Manufactured by B.D.
- Gravimetric verification
  - Real time alerts
- Barcode automation
- Automated audit trail of each compounding procedure
  - Provides guidance on how to correct mistakes
- Camera-based hardware enables remote documentation

### PharmacyKeeper
- Manufactured by MedKeeper
- Internet based using commercially available mobile devices
- Allows for remote pharmacist review and approval
- Audit logs including photos
- Alerts when approval needed
- Barcode scanning

### Phocus RX
- Manufactured by Grifols
- Noninvasive system
- Barcode verification
- Detailed documentation
  - High-resolution imaging
- Voice-recognition feature
  - Minimize contamination risks
- Remote verification from many platforms

### Sterile Room Medication Preparation (SRMP)
- Manufactured by ScriptPro
- Real-time, interactive program
  - “Inspection Call” button
- Barcode scanning
- Photo documentation
- Reduces chemo contamination outside of the IV room
- Standalone software option

### What options are available?

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Patient Case

Patient Arrives to Union City Clinic

- 72 yo female with ovarian cancer presents to Union City infusion clinic for her 3rd cycle of Doxil®
- 10:00 - Patient checks in
- Labs drawn the previous day
- 10:05 - Nurse reviews the labs and releases the premedications and chemotherapy orders through the EMR system

Order Transmitted 117 Miles to Memphis

Pharmacist at Memphis Verifies the Order

Verified Order Returns to Union City

Union City Technician Receives the Order and Begins Preparation

- 10:05 - Orders released by nurse
- 10:08 - Orders verified by Pharm.D.
- 10:21 - Ondansetron administered
- 10:27 - Doxil® prepared by tech
Product Documentation

Preparation

Post Preparation

Another Trip to Memphis

Pharmacist To Review DoseEdge

- 10:27 Technician Submitted her Preparation Pictures
- 10:45 DoseEdge Verified by Pharmacist

Last Trip to Union City

Star Wars: Episode IV - A New Hope

Spaceballs
Chemotherapy Administered
• 10:45 - Final Label is printed and attached to the medication
• 11:03 - Doxil® is administered
• 58 min = Total time between order release and administration
  Is that too much of a Delay?

Time Line Review
• 10:00 - Patient arrives
• 10:05 - Orders released by nurse
• 10:18 - First premedication infused over 20 min
  ▫ Stopped at 10:38
• 10:40 - Second premedication infused over 20 min
  ▫ Stopped at 11:01
• 11:03 - Doxil® administered over 60 minutes
• 12:03 - Patient discharged
  Total wait prior to first medication administration = 18 min

Advantages
• Provides documentation of interventions
• Creates visual log
  ▫ Aids in insuring accuracy and safety
  ▫ Provides step-by-step photo documentation
• Allows for oncology pharmacist oversight
• Meets Joint Commission standards for high risk preparation oversight by a pharmacist

Disadvantages
• Average time to prepare: 26 minutes through DoseEdge
  ▫ Some delays caused by solo pharmacist reviewing orders
  ▫ Orders are prioritized
• Extra equipment (outside and inside hood)
• More potential to move hands out of sterile hood
• Extra steps to ensure correct NDC matches within EMR system

Audience Question
• An EMR and telepharmacy can provide patients in rural setting with solutions and access to a BCOP pharmacist.
  True
• Video technology for pharmacist oversight requires a down time plan for continuity of care.
  True

Post-implementation Findings
Using DoseEdge at BCC

- Centralized outpatient oncology pharmacy with average census of 85 is able to remote verify chemo orders for 2 infusion centers with an average census 20 patients per clinic per day.
  - Challenges with PAP, salary transfers, SDV waste documentation
- Onsite infusion pharmacist is able to prepare and oversee 15 infusions per day onsite as well as remotely supervise 15 more infusions via telepharmacy.
  - Significant interventions include correcting wrong bag size, wrong vial, etc.

Key Takeaways

- Telepharmacy
  - the provision of pharmacist care through the use of telecommunications or other technologies
- Pharmacy Workflow Management systems may be an option for providing telepharmacy services to an outpatient infusion center