Clinical Pharmacy Practice Models in Oncology Patient Care
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Objectives
• Understand what published literature says about the role of oncology clinical pharmacists in patient care
• Identify current gaps in oncology patient care
• Discuss the Pharmacy Practice Model Initiative and implications for oncology practice
• Recognize practice site characteristics that will affect the type of model that may work for you
• Identify types of inpatient oncology practice models
• Identify types of outpatient oncology practice models

Let me change hats...
Roles of Clinical Oncology Pharmacists

ACCP: Clinical Pharmacist
• Comprehensive Medication Management (CMM) [aka MTM/DTM]
• Individualized care plan
• Care coordination in various settings
• Ability to practice in team based care and direct patient care environment
• Completion of residency training or equivalent practice experience
• Board certification by Board of Pharmacy Specialties (BPS)

ACCP: Clinical Pharmacist
• Patient assessment: review medical records, discuss medication history with patient/caregivers, prioritize problems/needs
• Medication evaluation: optimize therapy (appropriateness, effectiveness, safety, affordability, adherence)
• Plan of care: team collaboration; formulate plan and implement; patient/caregiver education; measurable outcomes and follow up
• Monitoring: monitor and evaluate therapy; collaborate with team continually; assess and adjust therapy as needed

Disclosure
• I have no actual or potential conflict of interest in relation to this program/presentation.
ACCP: Clinical Pharmacist

- **Documentation**: document in patient's medical record assessments, plan of care, follow up
- Develop **collaborative drug therapy management agreements** with physicians, medical groups, or health systems
- Participation in continuing professional development, research, education of other healthcare providers or students
- May also have roles as administrators, managers, policy development, consultations

ASHP Ambulatory Care Summit Pharmacist Role (Recommendation 1.2)

- Perform patient assessments
- Prescribing authority
- Collaborative drug therapy management
- Order, interpret, and monitor medication therapy-related tests
- Coordinate care for wellness and disease prevention
- Patient and caregiver education
- Document in medical record

Clinical Oncology Specialist Roles

- Order set, policy, procedure, and guideline development
- Chemotherapy counseling (patients/caregivers)
- Discharge education for medication therapy
- Formulary management
- Patient care: CMM, medication reconciliation, team rounding
- Anticoagulation services
- Pharmacokinetic services

ASHP Pharmacy Practice Model Initiative (PPMI)

Implications for oncology practice

Select Recommendations from ASHP Practice Model Summit

- **All patients** have a right to the care of a pharmacist
- Hospital and health-system pharmacists must be responsible & accountable for patients' medication-related outcomes
- Every pharmacy department should identify drug therapy management (DTM) services provided **consistently** by its pharmacists
- Pharmacist completion of ASHP-accredited residency training or equivalent experience is essential to DTM in optimal pharmacy practice models
Select Recommendations from ASHP Practice Model Summit

- Pharmacists providing DTM should be certified through the most appropriate **BPS certification**
- Sufficient pharmacy resources must be available for technology-related medication-use safety standards
- Uniform national standards should apply to education and training of pharmacy technicians
- **Distributive functions** not requiring clinical judgement should be **delegated to technicians**

Current Practice Models in Hospitals

- Drug-distribution centered
  - Mostly distributive pharmacists
  - Limited clinical services
- Patient-centered integrated
  - Clinical generalist model, limited role differentiation
  - Nearly all pharmacists participate in distribution and clinical roles
- Clinical-specialist centered
  - Separation of distribution and clinical roles
  - Defined roles with little overlap

Clinical Pharmacy Specialist-Centered

- Division of pharmacy staff into teams of distribution pharmacists and clinical pharmacists
- Clinical staff’s role is primarily consultations and patient-focused activities (ex. interdisciplinary rounds)
- May be conflict within the department
- Inconsistent pharmacy coverage in clinical patient care activities resulting in **fragmented care**

Patient-Centered Integrated Practice (PCIP)

- Thought to best support high-quality patient care per the ASHP Pharmacy Practice Model Initiative (PPMI)
- Proactive, comprehensive, flexible, adaptable, and efficient for **patient-focused care**
- Larger number of pharmacists with clinical and operational roles
- Easier recruitment and retention of engaged staff with advanced training
- Cross-training of staff provides clinical patient care consistently, eliminating fragmented care

Patient-Centered Integrated Practice (PCIP)

- Clinical specialists’ concerns with this model
  - Compression of roles and loss of specialty
  - Limit opportunities for directing and optimizing care of high-risk, complex patients (ICU, Cardiology, Oncology, Pediatrics)
- Potential barriers to this model
  - Training of pharmacy staff
  - Optimizing care of high-risk patients
  - Resources, $$
Select Recommendations from ASHP Ambulatory Care Summit

- Must have access to patients' medical records and health information for comprehensive, integrated, and coordinated services
- Collaboration with patients, caregivers, and healthcare professions for transitions across continuum of care
- Pharmacists should be recognized as healthcare providers in Section 1861 of the United States Social Security Act
- Demonstrate measurable and meaningful impact on patient and population outcomes

Ambulatory Care Models

- No defined models for outpatient care
- Clinical pharmacy services most commonly seen in large, academic, outpatient cancer centers
  - Clinic based pharmacist (potentially by specialty)
  - Specialty pharmacies
  - Consultation services and clinics
- Infusion centers
  - Primarily dispensing duties
  - Selective clinical services: chemotherapy counseling, formulary management, order sets, policies

Barriers to Oncology Pharmacy Practice

- Transition of care- continuum between different providers (ambulatory, surgery, radiation, hospitalization)
- Prioritization of activities- skill set required matches appropriate member of the care team
- Allocation of clinical pharmacy resources
  - Pharmacist-to-patient staffing ratio
  - 2010 Pharmacy Practice Model Summit- patient medication complexity index (severity of illness, number of medications, and comorbidities)
  - Continuity of care when specialist is absent from direct-patient care
  - Fragmented care (coverage of evenings, nights, weekends, holidays)
  - Specialized consultation services or DTM
  - Oncology patients in low volume community hospitals
- Pharmacist participation in ambulatory care
  - Increased ambulatory therapy options (monitoring and counseling)
  - CMS Oncology Care Model (episode of care payment) \(\rightarrow\) cost effectiveness

“Health system pharmacists are caught in a circuitous paradigm – pharmacists are unable to generate revenue for cognitive services and hospitals do not have the revenue to support pharmacists in these activities”

Collaborative Pharmacy Practice

- Enhance model of care integrating pharmacist role of interdependent prescribing
- Scope of practice defines boundaries within which the pharmacist is able to provide clinical services
- Decreases the gap in oncology providers for an increasing population
  - Allows pharmacists to independently perform activities of CMM, freeing physicians to care for more patients
  - Increase organizations clinical revenue
  - Allows pharmacists to take more direct responsibility for outcomes (PPMI goal)

Collaborative Practice in Tennessee

- Section 63-10.204 of Tennessee Code amended 2014
- Added Collaborative Pharmacy Practice (CPP) and CPP Agreement to law
- Allows 1 or more pharmacist(s) to jointly work with 1 or more prescribers under a CPP agreement to provide patient care services
- Agreement defines the nature and scope of patient care services provided by the pharmacist; services must be documented in the patient record or communicated to prescriber(s) within 3 business days
- Does not ensure payment for services
  - Cash-transaction
  - Third-party insurance-contracted service
  - Pharmacist-specific current procedural terminology (CPT) codes for medication therapy management (MTM)
PPMI Implementation within Comprehensive Cancer Centers

- Panel of 41 National Cancer Institute (NCI)-designated comprehensive cancer centers invited to participate in survey
- November 2013, 10 item survey specific to oncology practice was distributed to panel participants (n=76) by email with request to also complete PPMI HAS; given 4 weeks to complete
- Hospital self-assessment (HAS) survey
  - administered on PPMI website, tracked by ASHP
  - 2013: State completion rate 5-25%, 7 states only 1-5%
  - 2013: 62% smaller community hospitals, 10% large academic medical centers

PPMI Implementation within Comprehensive Cancer Centers

- 26 institutions completed HAS since 2011 (10 in 2013)
- 20 states represented
- 21/26 (81%) institutions classified as large academic medical centers with median bed size 451.5 (IQR, 365.5-785.5)
- 18/26 (69%) comprehensive practice model (distributive, generalist/integrated, and specialist roles)
- 15 institutions submitted responses to supplemental 10 item survey specific to oncology
  - Questions 1 and 4 excluded due to ambiguity

PPMI Implementation within Comprehensive Cancer Centers

<table>
<thead>
<tr>
<th>Hematology/ Oncology Questionnaire Results (n=15), adapted from Table 2</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer center</td>
<td>3 (20%)</td>
</tr>
<tr>
<td>Integrated into legacy EMF</td>
<td>12 (80%)</td>
</tr>
<tr>
<td>Number of patients treated for cancer care</td>
<td>122 (81.5%)</td>
</tr>
<tr>
<td>Number of oncology specialty clinic visits</td>
<td>393 (45.9%)</td>
</tr>
<tr>
<td>Number of chemotherapy infusions per day</td>
<td>128 (48.5%)</td>
</tr>
<tr>
<td>Number of clinical pharmacist-generated documented (decentralized) formularies, oncology equivalent</td>
<td>2 (13%)</td>
</tr>
<tr>
<td>Number of oncology (IQR 0.5)</td>
<td>6 (40%)</td>
</tr>
<tr>
<td>Number of clinical pharmacist-specialist (decentralized) formularies, oncology equivalent</td>
<td>4 (26.7%)</td>
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PPMI Implementation within Comprehensive Cancer Centers

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</thead>
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<tr>
<td>Institutions with pharmacists practicing in follow-up patient care settings</td>
<td>6 (40%)</td>
</tr>
<tr>
<td>Outpatient hematology/oncology</td>
<td>10 (66.7%)</td>
</tr>
<tr>
<td>Outpatient oncology/oncology</td>
<td>10 (66.7%)</td>
</tr>
<tr>
<td>Regional oncology</td>
<td>10 (66.7%)</td>
</tr>
<tr>
<td>Retail/Specialty pharmacy</td>
<td>8 (53.3%)</td>
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<td>8 (53.3%)</td>
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<tr>
<td>Infectious diseases</td>
<td>10 (66.7%)</td>
</tr>
<tr>
<td>Pharmacogenomic management</td>
<td>10 (66.7%)</td>
</tr>
<tr>
<td>Pharmacy administration</td>
<td>9 (60%)</td>
</tr>
<tr>
<td>Nutritional care</td>
<td>7 (46.7%)</td>
</tr>
</tbody>
</table>

PPMI Implementation within Comprehensive Cancer Centers

- Identified areas of improvement based on survey results
  - Outpatient drug therapy management
    - 6 (23%) institutions reported providing service in “most to all” situations
  - Advancement in technician roles
  - Utilization of automation and technology
    - Point of administration 15 (69.6%)
    - 4 (15%) Smart infusion pumps integrated into closed-loop medication-use process
  - Mechanisms to hold pharmacists accountable for medication-related outcomes
PPMI Implementation within Comprehensive Cancer Centers

- Reported barriers to PPMI implementation
  - Lack of funding or financial resources 73%
  - Inadequate pharmacy personnel 53%
  - Inadequate implementation of automation/technology 33%
  - Resistance from hospital leadership 27%, pharmacists 13%, and pharmacy technicians 7%
  - State laws impeding implementation 27%

Define the Pharmacy Team

- Inventory your current staff
- Individual roles within the model will depend on key staff characteristics
  - Knowledge
  - Skills
  - Experience
  - Leadership and management abilities
- Phased team building: utilizing current resources and identifying gaps in care

Define the Practice Site

- Patient population
- Services provided
- Prescriptive authority
  - Certified pharmacist practitioner
  - Clinical policies/procedures
  - Collaborative practice agreements
- Service lines
  - Patient census
  - Number of practitioners
  - Practice model (location, dates, times)
- Physical locations of inpatient units or ambulatory clinics/infusion centers
- Technology & processes (ordering, medical record, scheduling)

Inpatient Models of Care

<table>
<thead>
<tr>
<th>Unit Based Care</th>
<th>Service Line Based Care</th>
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</thead>
<tbody>
<tr>
<td>Pharmacist assigned to specific unit(s)</td>
<td>Pharmacist assigned to specific service line</td>
</tr>
<tr>
<td>Cares for all patients in that unit(s)</td>
<td>Patients may not all be located in one specific unit</td>
</tr>
<tr>
<td>Provides all duties of CMM, education, provider support</td>
<td>Provides CMM, education, provider support for patients cared for by the service line providers</td>
</tr>
<tr>
<td>Easier to design and function</td>
<td>Easier to build relationships with providers and coordinate patient care</td>
</tr>
<tr>
<td>Ensures all patients receive pharmacist care</td>
<td>Logistically difficult for pharmacist coverage of units with mixed populations</td>
</tr>
<tr>
<td>Specialists may be providing care to non-oncology patients located in that area</td>
<td></td>
</tr>
<tr>
<td>Pharmacist must build relationships with a variety of providers and work on communication methods</td>
<td></td>
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What is right for you?

Hybrid/Teams
Ambulatory Models of Care

• Outpatient oncology cancer centers
  ▸ Pharmacist assigned to defined clinics/service lines providing CMM, education, and provider support
  ▸ Pharmacist led or team based specialized services
    ▪ Anticoagulation clinic
    ▪ Oral chemotherapy management clinic
    ▪ Supportive care clinic
    ▪ Long term care clinic
  ▸ How do we reach patients in the community?

Tristate Region Outpatient Cancer Center Practice Model

• University of Pittsburgh Medical Center (UPMC) ShadySide
  ▸ Hillman Cancer Center the flagship cite in Pittsburgh
  ▸ 150 oncologists at 30 sites
  ▸ 19 community based cancer centers or physician practice sites (hospital based clinics- HBCs) were acquired
  ▸ Expansion Plan
    ▪ Oncology medication protocol development
    ▪ Modification of oncology care workflows
    ▪ Implementation of hybrid practice model for clinical pharmacy resources
    ▪ Staff training programs

Tristate Region Outpatient Cancer Center Practice Model

• Interdisciplinary workflow discussion
  ▸ Evaluated physician office workflow and staffing at individual sites to determine onsite pharmacist staffing vs. remote order verification
  ▸ Twice a month conference calls amongst network pharmacists
  ▸ Hybrid model development
    ▸ Hillman Cancer Center- distribution and clinical services provided at time of expansion
    ▸ Blend of onsite and remote order review to meet the recommended 2 check safety standards

Loma Linda Oral Chemotherapy Management Clinic

• Loma Linda University Cancer Center
• Oral chemotherapy management clinic (OCM) with a medication therapy management (MTM) program
• Analyzed oral chemotherapy prescription volume in preceding 12 months → determined 2 day/week clinic
• Primary provider- oncology pharmacist spending 20 hours/week on services in the clinic
• Located adjacent to oncology clinics

Loma Linda Oral Chemotherapy Management Clinic

• Insurance authorization specialist received prescription from oncologist’s office → scheduled patient visit within 7 days after receipt of drug(s)
• Initial face-to-face clinic visit
• Scheduled telephone follow-up: 3 to 5 day call & 7 to 10 day call
• 3 month follow up face-to-face clinic visit (with unscheduled visits as needed)
Loma Linda Oral Chemotherapy Management Clinic

- Services
  - Education of patient/caregivers
  - Disease and symptom management
  - Care plan development and follow up
  - Laboratory monitoring, safety assessments
  - Medication adherence
- All services documented in electronic medical record
  - Served as written communication to health care providers
  - Oral communication with health care team if immediate attention/intervention needed

UNC Supportive Care Consult Service & Clinic

- University of North Carolina
- Ambulatory adult oncology; Monday-Friday, clinic hours
- Team: oncology pharmacist (certified pharmacist practitioner), advanced practice nurse, medical oncologist (hospice & palliative medicine specialist)
- Initial consults called to nurse who triages to providers
- Roving pharmacist/nurse model to the patient in the clinic they receive care; coordinated care with a physician as needed
- Model allowed patient to be seen during current visit to avoid an additional trip & allowed involvement of primary oncologist in patients’ care

ASHP Best Practices Awards

- 2015
- 2014
  - A Journey to Improve Oncology Care Via A Focus on Quality, Safety, Improved Use of Technology, and Implementation of an Oncology Pharmacy Team (Hanger et al.; University of Cincinnati Medical Center; Ohio)
  - Implementation and Successes of an Inpatient Medication Therapy Management Program (White et al.; Asante Rogue Regional Medical Center; Oregon)
  - Implementation of a Pharmacist Directed Pain Management Service in the Inpatient Setting (Porier et al.; Kaweah Delta Healthcare District; California)
  - Advancing Pharmacy Practice through an Innovative Ambulatory Care Transition Program (Cavanaugh et al.; UNC Health Care; North Carolina)

UNC Study on Resource Allocation

- University of North Carolina (UNC) Hospitals created an objective method to determine optimal use of clinical pharmacy specialists (CPS)
- 803 bed academic medical center, 310 FTE pharmacy staff, expense budget $135 million
- Hybrid model: clinical pharmacy generalists (“decentral clinical pharmacists”) & CPS
- CPS assigned to medical service rather than a patient care unit
- CPS staff and clinical generalists responsible for reviewing CPOE orders for assigned service/area
- Decentral services available 7 days/week, 16 hours/day (7 am to 10 pm)

ASHP Best Practices Awards

- 2013
  - Implementation and Outcomes of a Pharmacist Managed Clinical Video Telehealth Anticoagulation Clinic (Singh et al.; VANMCS, Maryland)
  - Implementation of a Clinical Pharmacy Specialist-Managed Telephonic Hospital Discharge Follow-Up Program in a Patient-Centered Medical Home (Harratzy et al.; Denver Health Medical Center, Colorado)
- 2012
  - Maximizing the Impact of Pharmacists Across Transitions of Care: Hematopoietic Cell Transplant as a Best Practice Opportunity for Clinical Pharmacists (Rao et al.; UNC Hospitals and Clinics; North Carolina)
- 2011
  - Development, Implementation, and Impact of a Comprehensive, Medical Service Based Pharmacy Practice Model that Maximizes Pharmacist Involvement in the Patient Care Setting (Eckel et al.; UNC Hospitals; North Carolina)
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