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Home Hospital Pharmacy Playbook

A COMPREHENSIVE GUIDE TO DESIGNING YOUR
HOME HOSPITAL PHARMACY SERVICES



pharmacists advancing healthcare®



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OVERVIEW OF HOME HOSPITAL PROGRAMS

The concept of a hospital at home, or home hospital, has varying connotations to individuals. Some of us initially think of physician “house calls”, home health, home infusion, or other types of care provided in the home. The key differentiator between these models of care, and home hospital, is the acuity of the patients.

For Pharmacy leaders, its critical to recognize that home hospital patients are acutely ill. These are patients who truly require acute hospital level care, which has critical ramifications for how we monitor and therapeutically manage these patients.

Home hospital programs were initially conceived by Johns Hopkins School of Medicine and Public Health over 25 years ago but have been considered a care model of the future for many years. However, the implementation accelerated dramatically over the past two years, propelled by hospitalized patient volume surges experienced during the COVID pandemic as well as CMS formalizing structure and reimbursement for these programs. The confluence of these factors has made hospital programs no longer a care model of tomorrow, but a functional, pervasive care model of today.

In an effort to bring consistency to this rapidly evolving model of care, CMS established several requirements for Acute Hospital Care at Home. These minimum expectations set a foundation for these programs and give us insight into how these programs function. The program requirements include:

- Having appropriate screening protocols in place before care at home begins to assess both medical and non-medical factors
- Having a physician or advanced practice provider evaluate each patient daily either in-person or remotely
- Having a registered nurse evaluate each patient once daily either in-person or remotely
- Having two in-person visits daily by either registered nurses or mobile integrated health paramedics based on the patient’s nursing plan and hospital policies
- Having the capability of immediate, on-demand remote audio connection with an Acute Hospital Care at Home team member who can immediately connect either an RN or MD to the patient
- Having the ability to respond to a decompensating patient within 30 minutes
- Tracking several patient safety metrics with weekly or monthly reporting, depending on the hospital’s prior experience level
- Establishing a local safety committee to review patient safety data
- Using an accepted patient leveling process to ensure that only patients requiring an acute level of care are treated
- Providing or contracting for other services required during an inpatient hospitalization

Many home hospital programs offer both acute and restorative care spanning over a 30-day

episode of care. The acute phase reflects a traditional hospital stay followed by the restorative phase which is similar to a nursing home, rehabilitation or swing bed stay.

It's critical for Pharmacy leaders to understand that home hospital is a care model of today, patients being treated in the acute phase are acutely ill, and how technology and care team colleagues are engaging with these patients in the home. These are driving factors as we consider and make decisions about which pharmacy services we will provide these patients, including how we will provide both clinical expertise and medications to our patients in this setting.



POTENTIAL ROLES OF PHARMACY IN A HOME HOSPITAL PROGRAM

At the core, pharmacies are essential for dispensing medicines. In a home hospital program, pharmacies can be leveraged to simply dispense medicines, or provide a full suite of clinical and operational services.

Here are two visuals contrasting these approaches.

Figure 1. Pharmacy serving a dispensing function only

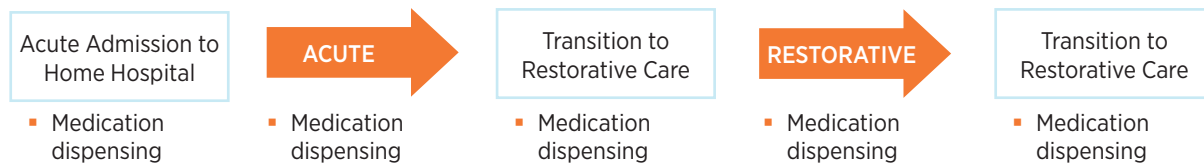
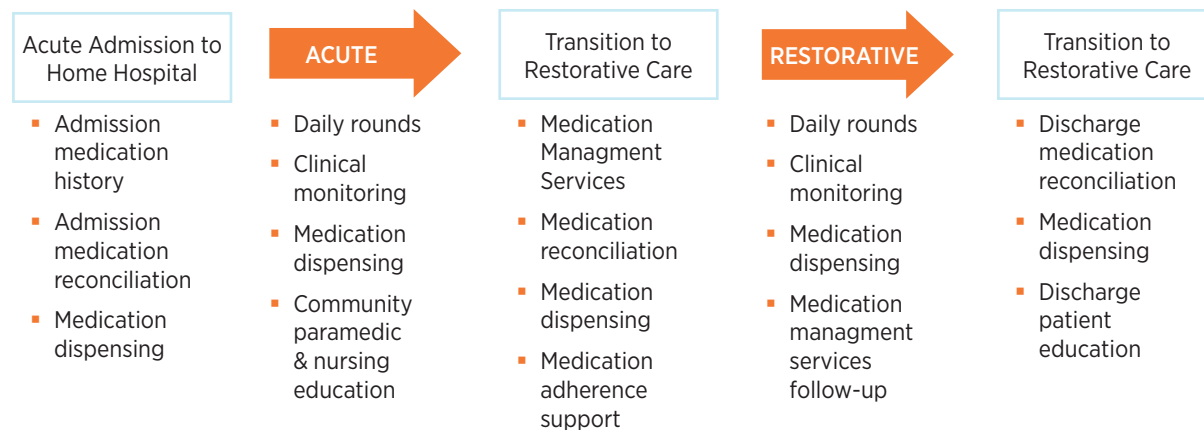


Figure 2. Pharmacy being fully integrated in the care model, providing clinical and operational services



Health system pharmacy practice has evolved substantially over the past three decades, resulting in many locations having pharmacists fully integrated in both acute hospital and ambulatory clinic care teams. Home hospital is a new care area that pharmacy leaders now need to consider.

Our perspective is that pharmacy leaders should view caring for home hospital patients as if these patients are on another floor of their hospital or another patient visiting their clinic. This perspective will be an effective starting point and will prove valuable in guiding their subsequent decision-making for the many detailed decisions needed for managing the home hospital medication use process.



REGULATORY CONSIDERATIONS

Regulations frame what pharmacy practices are allowable within home hospital just like in every other part of our practice. Most national and state pharmacy-related regulations have historically considered pharmacy services as outpatient (eg, retail, mail order, specialty, home infusion) or institutional (eg, hospital or skilled nursing facility).

The functional needs of caring for an acutely ill patient in the home (who would have traditionally been hospitalized in an institution), create some unique challenges to consider.

Some primary issues are

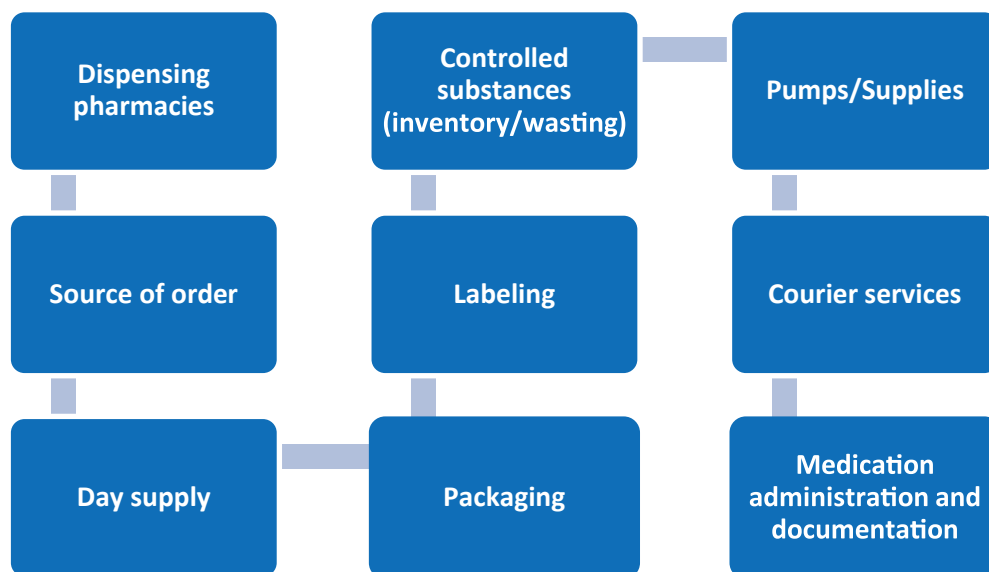
- Pharmacy licensing
 - Is your pharmacy allowed to dispense medications to the home based on the type of licensing required by your state (outpatient pharmacy, home infusion, et al)?
 - If so, what is required in terms of labeling details, consultation, documentation, et al?
 - Unfortunately, licensing can limit what services you provide initially. That said, if you want to provide the service, engage your state Pharmacy Board in dialogue about what the home hospital care model is, how you plan to provide medicines safely to patients, and consider pursuing additional licenses based on their guidance.
- Medication storage, delivery, inventory control and waste
 - These are foundational issues for us within our pharmacies and institutional practices, but may not be items we have direct control over in the home setting.
 - It's essential to consider the extent of oversight and inventory control parameters you want to extend into the home hospital setting. These decisions have implications for beyond-use dating and temperature controls, chain of custody tracking, controlled substance management and diversion prevention, ability to pull back and re-use inventory vs wasting it, the potential use of automation, and many other important decision points.
 - Your ultimate decisions will vary based on what dispensing and delivery mechanisms you choose to employ

In addition to national and state regulatory bodies, pharmacy leaders must ensure relevant accrediting body expectations are also met. It's critical to partner with your internal accreditation leaders to understand how they're viewing home hospital patients. In our experience, accreditation colleagues most likely view them as acute hospitalized patients, indicating the relevant CMS Conditions of Participation and Joint Commission or DNV medication management standards apply to these patients as well.

We recommend reviewing the medication management accreditation standards through the home hospital lens to ensure your pharmacy team and the organization are complying with the expectations.



KEY DECISION POINTS IN THE HOME HOSPITAL MEDICATION USE PROCESS



Listed here are several key points to consider when making distribution decisions. Most of these decisions depend on your board of pharmacy and how they view home hospital patients – ambulatory or inpatient. The care model itself is a unique blend of inpatient and outpatient practices not accounted for completely within our board regulations making this challenging. Often the board of pharmacy considers these patients a blend requiring a combination of inpatient and outpatient pharmacy practices. As pharmacy teams, we need to figure out what the board requires and be creative in how to care for these patients while still meeting regulations.

DISPENSING PHARMACIES

Which pharmacy or pharmacies should be used to distribute medications to home hospital patients?

Summary: The dispensing pharmacy for oral and intravenous medications is an important consideration when developing a home hospital program. This decision impacts patient safety, patient and staff satisfaction, efficiency and quality of care provided. The medication dispensing process is more complex for patients in home hospital than any other care model.

Key Questions: Will the dispensing pharmacy be an inpatient or outpatient pharmacy or potentially combination of the two? Will pharmacy services be insourced or outsourced?

Considerations: Medication dispensing is in large part driven by the board of pharmacy in your state. Licensing of pharmacies and what dispensing functions are allowed in each type of pharmacy differ from state to state so this needs to be known before decisions are made.

Even under the CMS waiver with patients considered inpatients, some boards of pharmacy will still not allow an inpatient pharmacy to dispense medications to a patient home. Conversely, the board may allow dispensing from the inpatient pharmacy of non-controlled substances only, driving the need to develop a controlled substance dispensing solution for the model.

If inpatient based dispensing is chosen, inpatient orders can be leveraged, and all oral and intravenous medications can be dispensed from a single pharmacy; a major advantage. Inpatient pharmacies may also be used to dispense to patients considered outpatients depending on the state, if outpatient labeling and prescription requirements can be met. Most inpatient pharmacies can accommodate the dispensing and labeling required if allowed and are generally preferred.

Inpatient dispensing is designed to accommodate high acuity patients with several daily medication changes leading to gained efficiencies in this model. Inpatient pharmacy has immediate access to orders and is not reliant on prescriptions to be e-prescribed to prompt dispensing. Inpatient operations is often partnered with inpatient pharmacist clinical involvement during verification of orders and patient review offering an additional layer of safety. This pharmacy team is working out of the Electronic Health Record (EHR) in use by the team, if one is being utilized, offering a definite advantage to overall patient care.

EXAMPLES OF DISPENSING APPROACHES:

INSOURCED MODEL

INPATIENT PHARMACY

- Daily supply of oral and infusion medications through cartfill
- Unit dosed oral medications
- Nursing/paramedics/couriers for delivery
- No redundancies – 24/7 coverage
- Hospital pumps and supplies need sourcing

HEALTH SYSTEM OWNED OUTPATIENT AND INFUSION PHARMACIES

- Prescriptions utilized
- 3 to 7-day supply of medications
- Multiple packaging options
- No prescription benefits applicable
- Redundancies contracted to ensure 24/7 access
 - Potential use of inpatient pharmacy for redundancy

If outpatient-based dispensing is chosen, typically prescription orders are needed to drive dispensing through e-prescribing. This cannot be accomplished by a single pharmacy in most scenarios so an outpatient and home infusion pharmacy will need to be contracted with. The outpatient pharmacy will then supply orals and bulk medications in a variety of packaging depending on capabilities of the chosen pharmacy: bottles, pill planners, blister packaging, or strip packaging. The home infusion pharmacy will supply any intravenous medications with needed supplies and pumps.

Insourcing versus outsourcing is the next important decision. Do you have pharmacies on site that can offer pharmacy services 24/7? If you have an outpatient or home infusion pharmacy that can only cover business hours, is it possible to utilize your inpatient pharmacy as the redundancy to help supply medications during evening and overnights? Or, if your retail or home infusion pharmacy don't have the extensive formulary required to support these patients, can your inpatient pharmacy supply those medications? Insourcing is typically less expensive than outsourcing and offers your team more control. Flexibility is needed during implementation of this care model which is often lost when working outside of your organization. It's important to remember that vendor pharmacies cannot typically visualize the EHR if one is being utilized. Therefore, any changes made to a medication need a prescription sent to the respective dispensing pharmacy to ensure the patient receives the appropriate, intended medications. There needs to be time allowed then to process the prescription and courier the medication out to the home, leading to inefficiencies. Vendor pharmacies are at times preferred or the only option available. They can successfully be utilized to care

EXAMPLES OF DISPENSING APPROACHES:

OUTSOURCED MODEL

OUTPATIENT MEDICATION PHARMACY

- Prescriptions utilized
- 3 to 7-day supply of medications
- Multiple packaging options
- No prescription benefits applicable
- Redundancies contracted to ensure 24/7 access

HEALTH SYSTEM OWNED OUTPATIENT AND INFUSION PHARMACIES

- Prescriptions utilized
- Multiple day supply of medications (stability dependent)
- Pumps and supplies
- No prescription benefits applicable
- Redundancies contracted to ensure 24/7 access

INSOURCED/OUTSOURCED MODEL

INSOURCED INPATIENT/OUTSOURCED OUTPATIENT PHARMACY DISPENSING

- Daily supply of oral and infusion medications through cartfill
- Unit dosed oral medications
- Nursing/paramedics/couriers for delivery
- No redundancies — 24/7 coverage
- Hospital pumps and supplies need sourcing
- Controlled Medications dispensed by outpatient medication pharmacy via prescription

for home hospital patients but offer their own, very different logistical challenges that need to be worked through. Even within a healthcare system, if pharmacies are in different states, they likely have different dispensing laws through their respective boards of pharmacy. In one state, pharmacy may be licensed as a pharmacy – not a specific type such as outpatient or inpatient. Therefore, all types of dispensing could occur from a single pharmacy if labeling and record keeping requirements are met. In the other state, same health system, an inpatient pharmacy may not be allowed to dispense medications to a patient’s home without a variance in place. Even with a variance, narcotics likely cannot be dispensed to homes. In this example, one pharmacy team could dispense from the insourced, inpatient pharmacy while the other pharmacy team would need to dispense from outsourced, outpatient pharmacies.

SOURCE OF THE ORDER

What is the source of the order that will be used to dispense medications from?

Summary: The dispensing pharmacy is going to drive the source of the order. Inpatient orders are the source of truth for acute care patients with a corresponding MAR. With the high frequency of medication changes, it becomes difficult to ensure that the prescriptions are kept up to date to align with the inpatient orders and MAR if prescriptions are required.

Key Questions: Which pharmacy is responsible for dispensing? Is a prescription order needed? Can an inpatient order serve as a prescription order or single order source?

Considerations: If the inpatient pharmacy is being utilized, then all that is required is an inpatient order. If an outpatient pharmacy is being utilized, then a prescription order is going to be necessary. When taking care of home hospital patients, ideally you are using an inpatient episode of the electronic health record and therefore, there will always be inpatient orders to drive MAR documentation and other necessary clinical tools for inpatient care. If prescriptions are needed to obtain medications from an outpatient and/or home infusion pharmacy, then a duplicate order is necessary in addition to each inpatient order. The ordering provider needs to place an inpatient order with a corresponding outpatient prescription every time they place a new order or modify an existing order. This can be a cumbersome process for the ordering provider. There is also an opportunity, if using an insourced outpatient pharmacy, to utilize the inpatient order as your prescription, based on a local policy or standard. This can be a desired option versus use of a prescription order. If possible, duplicate entry of a prescription order should be avoided to drive desirable, efficient workflows for ordering providers.

DAY SUPPLY

How many days’ supplies should be dispensed to the patient’s home?

Summary: Home hospital patients in the acute phase of care have high acuity of illness. Therefore, multiple medication changes are happening daily like a traditional hospital stay.

Key Questions: Where are the medications being sourced from? Are inpatient orders being utilized to dispense from an inpatient pharmacy or are prescriptions being utilized to dispense from outpatient pharmacies?

Considerations: Because of the frequency in medication changes, the recommendation is typically to send a 24-hour supply of medications daily. If a three-, five- or seven-day supply is dispensed, there is a risk of re-work or wasting medications. Because there are medication changes so frequently, sending a longer supply does not necessarily save on courier costs. New medications are started, or doses changed each day, so a courier is sent to the home daily with medications to accommodate that. If multiple days' supply is already in the home, the now inaccurate medications need to be removed, wasted, or sequestered so that patients don't receive them in error.

Sending a daily supply of medication is easiest when utilizing an inpatient pharmacy and a cart-fill process. For example, run a 1pm cart-fill capturing doses due 1900-1859 with courier pick up at 1600 for delivery to each home. If an outpatient or home infusion pharmacy is being utilized, then a daily supply becomes an unreasonable ask. In this scenario, at least a three-day supply is recommended potentially with refills to minimize the number of prescriptions that the provider needs to place.

PACKAGING

How will the medications be packaged for use in the home?

Summary: Ideal packaging of medication is in a way that a virtual caretaker can easily verify the drug and dose of each medication via video, the in-home caregiver can determine which medications need to be given at the appropriate time and the medications can easily be administered by any party responsible for administration.

Key Questions: What forms of packaging are available from the dispensing pharmacy? Which packaging enables the dispensing process? Is compliance packaging or automation available?

Considerations: The packaging that is best for this care model is the packaging that is most efficient for your pharmacy team. If inpatient pharmacy is dispensing, medications should remain in unit dose packaging. If outpatient pharmacy is dispensing, bottles could be utilized. If a long-term care pharmacy is dispensing, blister packs or strip packs could be utilized. Multiple doses enclosed in the same dose pack, such as strip packing, may not be desirable. With frequent medication changes, there's a strong possibility that strip packing will need to be modified throughout the hospital stay leading to confusion and re-work by the care team. The virtual verifying nurse needs to be aware of the packaging utilized and how to identify the 5 rights with the packaging in the home.

LABELING

How will medications dispensed to the home be labeled?

Summary: The board of pharmacy will dictate the labeling required for in home use of medications dispensed for hospital at home.

Key Questions: Are the medications dispensing from the inpatient or outpatient pharmacy? Does the board of pharmacy require outpatient labeling, or can inpatient labeling be utilized from the inpatient pharmacy?

Considerations: If dispensing medications from the inpatient pharmacy, outpatient compliant labels can be produced from the EHR in place of the typical inpatient label if required. If the medications are dispensed from outpatient pharmacies, no change to labeling is required.

CONTROLLED SUBSTANCES, INCLUDING INVENTORYING AND WASTING

How will controlled substances be managed for home hospital patients?

Summary: A majority of home hospital patients require controlled substances throughout the home hospital episode either amongst their maintenance medications or as new medications needed for the admission. Oral controlled substances should not be an exclusion for enrolling patients.

Key Questions: What does the board of pharmacy require in your state related to dispensing, inventory, and storage in the home? Is the primary dispensing pharmacy an inpatient or outpatient pharmacy?

Considerations: Controlled substance dispensing is largely determined by the board of pharmacy in each state. Ideally if the inpatient pharmacy is being used as the pharmacy of choice for distribution, then both controlled and non-controlled substances would be dispensed from the inpatient pharmacy. In this scenario, controlled maintenance medications would be supplied as a 24-hour supply just like non-controlled medications. A perpetual inventory would be kept in the MAR comments during each administration. The nurse, when documenting the medication, would document a beginning and ending inventory count for each medication administered. The beginning count should match the ending count of the last administration. Additionally, a controlled medication count with each shift or daily can be completed if desired as part of the required home visits.

In the scenario where the board of pharmacy does not allow the inpatient pharmacy to be the primary dispensing pharmacy or to dispense controlled substances as the primary pharmacy, supply would need to be obtained from an outpatient pharmacy. In this case, a prescription order would need to be sent to the outpatient pharmacy as a duplicate to the inpatient order. In this scenario, more than a 24-hour supply should be dispensed to the home so that a new prescription daily isn't needed to get supply of the medication to the home. As a result, it's typically recommended at least a three-day supply be prescribed to the outpatient pharmacy. It may be reasonable to put refills on the controlled substance prescription if it's a maintenance medication so that the provider does not need to put in an additional prescription each time more supply is needed. Even if the medicine is dispensed from the outpatient pharmacy, an inventory should still be maintained on a perpetual basis through use of the MAR.

For wasting of controlled substances, ideally the patient has an appropriate waste container in their home for extra doses or waste to be disposed in. If the patient only requires a half of a dose for example, the caregiver in the home can be witnessed by the virtual nurse. The nurse would witness the tablet being split in half, administration of half of the tablet to the patient, and the remaining half wasted in a Detera bag for example. Then the virtual nurse would document that witness in the EHR.

PUMPS AND SUPPLIES

Which pumps will be utilized for infusions in the home and who will be responsible for supplies?

Summary: Most home hospital patients have infusion needs and will require a pump with necessary supplies. In home infusion practice, the medications, pumps, and supplies all come from the pharmacy. However, in traditional hospital, pharmacy is not responsible for pumps or supplies and don't have the knowledge base to support these services.

Key Questions: Which pump should be utilized for home hospital patients – hospital or ambulatory pumps? Who will manage distribution of pumps and supplies – home infusion pharmacy, hospital supply chain or a vendor?

Considerations: There are pros and cons to using hospital versus ambulatory pumps. If using a hospital pump, the pump library will align with inpatient orders unlike ambulatory pumps. If an ambulatory pump is utilized, a drug library will need to be built to align with inpatient practice. If hospital supplied pumps are used, typically the dirty pumps can be returned to the hospital, cleaned, and placed back into circulation. Both hospital and ambulatory pumps are intuitive for use by in-home clinicians. Hospital pumps increase the risk for falling in the home. This can be especially challenging if the patient requires continuous infusions for hydration. If hospital pumps are leveraged as the primary source, an ambulatory pump should be considered for continuous infusions to allow for patient mobility.

If utilizing inpatient pharmacy, a mechanism for delivering supplies to the home needs to be designed as inpatient pharmacy should not be responsible for this task. If utilizing home infusion pharmacy, pharmacy will take on this responsibility. A reasonable approach is to set up a supply closet like a traditional supply room in a hospital unit. The supplies could be managed by the hospital supply chain team in collaboration with the centralized virtual team and inventory of supplies in the home assessed regularly for the need to replenish.

COURIER SERVICES

What are options for delivering medications to the home?

Summary: A crucial part of the medication use process for home hospital is delivery of medications to the home. In the hospital, we use pharmacy staff or hospital volunteers and in the ambulatory setting, patients or family members pick up medications. This process needs to happen in a timely manner, and medications need to be available at the due time for medication administration.

Key Questions: There are several options to consider here. Caregivers (nurses, paramedics, providers) are going out to the patient's home at least twice daily and medications can be brought out with one of those caregivers. Are the caregivers dispatching from the campus that pharmacy is located on? The answer to that question will likely determine if that's a viable option. Courier services can also be contracted independently, or vendor pharmacies may offer delivery or courier services tied with dispensing services.

Considerations: Delivery by caregivers should be caregivers employed by the institution providing home hospital care and most easily achievable with insourced services. Caregiver delivery is very convenient if caregivers are on site with pharmacy and is a cost-effective mechanism for delivery. Under the CMS waiver, twice daily visits are required and therefore offer opportunity for coordination with pharmacy delivery. Multiple services are outsourced to vendor suppliers and therefore this delivery mechanism via insourced caregivers may not be an option. With home hospital patients, multiple services beyond medications will require a courier so medications can be added to the service contract. This obviously adds a cost each time a medication requires delivery. Additionally, pharmacies often have courier services so delivery to the home may be included with the vendor pharmacy service contract.

Tracking of deliveries, specifically medications, is key. Proof that the delivery was made, and medications received, should be considered. This can be accomplished through collection of signatures or barcode scanning.

MEDICATION ADMINISTRATION AND DOCUMENTATION

How will medications be administered and documented in the home?

Summary: Patients admitted to a home hospital program will have a similar number of medications ordered for administration as a traditional hospital stay. The 5 rights for medication administration are crucial and often completed virtually by the virtual nurse.

Key Questions: How will the nurse determine the 5 rights on administration? How will administration be documented by a virtual team member in collaboration with an in-home clinician?

Considerations: During acute care in the home, patients are generally not allowed to use their own medications, like a traditional hospital stay. Home medications are sequestered on admission and set aside to avoid use by the patient. Best practice is to utilize a MAR to drive the medication schedule and regimen. This guides scheduling of in-home clinicians and connection of the virtual nurse with the patient when medications are due. When administration occurs, the in-home clinician, patient, or caregiver holds the medication to be administered up to the camera for validation by the virtual nurse. The nurse validates the medication being given and works through the 5 rights of administration. The administration is documented on the MAR via proxy as well as the person witnessed completing the administration in the MAR comments for each. Barcode medication administration is difficult in the home currently. Multiple caretakers are responsible for administration of medications, including the patient or his/her caregiver at times. Also, medications are often sourced outside of the inpatient pharmacy so do not have scannable barcodes affixed. Enhanced automation is needed in the home to advance this piece of the medication use process.



THE POTENTIAL ROLE OF AUTOMATION

Summary: Automation plays an integral role in medication distribution for inpatient pharmacies. Automated dispensing cabinets (ADCs) are the cornerstone of medication dispensing for most hospital systems. These devices provide safe and efficient medication access for nurses, providers, and other health team members. To date, there has not been an automated dispensing device tailored to the home hospital setting.

Key Question: What types of automation (if any) should be incorporated into the medication distribution and dispensing process within your home hospital program?

Considerations: Standard ADCs used in the inpatient setting are often large machines designed to hold hundreds of medications. They integrate seamlessly with the electronic health record and provide on demand medication access for hospitalized patients. However, these machines are large, not portable and require complex configuration. These challenges do not make them practical for use in the home hospital setting.

There are a wide variety of consumer products designed to help patients with medication compliance. These products allow the patient or caregiver to load medications into the dispensing device and set a schedule based on when medications are due. These devices are tailored for use in patient homes and are designed to be easy to use for patients and caregivers. There are a few distinct advantages that come from using these devices. First, patients are better able to manage their medications in their home. Unit dose or prescription bottles is currently the standard of medication dispensing in the home hospital setting. This often leads to confusion for patients, especially those who previously used pill planners or other compliance devices. Second, nurses and providers can get real time updates from the devices. These updates could include information on compliance, medication supply, and dosing schedule. There are also a few limitations with these devices since they are not designed for use in a hospital setting. The devices only have the capacity for 10-20 medications and are limited to oral dosage forms. In their current state, these devices do not integrate with the electronic health record. This creates challenges for patients and healthcare staff to assure medication orders and documentation remain consistent across platforms. The advantages and limitations should be considered prior to implementing medication automation in a home hospital program.



CLINICAL PHARMACY SERVICES

Summary: There are multiple ways for pharmacy to clinically engage in home hospital care models. Strong clinical practices exist in pharmacy across inpatient and outpatient settings and can be applied across the home hospital continuum of care.

Key Question: Of the clinical services being provided by inpatient, ambulatory and outpatient pharmacies within your health system today, which of these services will be provided to home hospital patients?

Considerations: Patients being admitted to home hospital programs are often of a similar acuity level to those admitted to the brick and mortar hospital. Due to this, the pharmacy services provided to these patients should closely mirror the services provided to patients in the brick and mortar hospital. Some examples of clinical services commonly performed in the inpatient setting include order verification, medication dosing and monitoring, medication reconciliation, therapeutic interchanges, attending rounds, IV to PO conversions, and many others. These clinical services are a great starting point for ways pharmacy should be involved in home hospital programs outside of medication dispensing.

In addition to clinical services provided to your typical inpatients, there are a few unique clinical roles pharmacy can be involved in for home hospital patients. These include a detailed medication history, medication management services (also known as medication therapy management), and medication reconciliation and education. Below we explore these concepts further.

Medication History and Inventory

Summary: An accurate medication history is extremely important in providing the best care for patients. The best possible medication history should be completed utilizing multiple sources. These often include a patient interview followed by validation of information via dispense reports in the EHR, calling pharmacies or reviewing MARs. In addition, in the home hospital setting we can visualize what medications the patient actually has in their home, which is an additional resource when completing a medication history.

Key Question: How will your team complete medication histories and check what inventory of medications the patient has in their home?

Considerations: Whichever personnel is in the home on admission should collect the patient's medications. It's important to get an accurate medication inventory including medication dose, dosage form, instructions, quantity of medications and quantity of refills. This will help if the patient is using his/her own medications, so the team knows if supply in the home is sufficient. For those programs that don't use patient medications until later phases of care, an accurate inventory helps the teams on transition. The inventory also helps validate the patient's home medication list. An accurate inventory of what the patient has in the home isn't sufficient. This inventory must be compared to the medication list in the EHR, and discrepancies resolved. Finally, an inventory can

help determine if the patient has medications that are no longer being used or are expired. If the patient is agreeable, these medications can be disposed of in a safe manner. In the end, we should have an accurate medication history, which truly reflects what the patient is taking at home.

Medication Management Services (MMS)

Summary: Transitions of care are critically important for patient success as they move through the healthcare system. In the home hospital setting, patients often transition from an acute setting into more of a restorative or home health episode. This provides a unique opportunity for MMS pharmacists to meet with patients and help manage and optimize their chronic disease states.

Key Questions: Should patients receive an MMS visit while in the home hospital program? If so, when should this visit occur and what pharmacy group should be responsible for this visit? Should recommendations be sent to the home hospital provider team or the patients primary care provider?

Considerations: Ambulatory care pharmacists play an important role in management and optimization of chronic disease states. Patients in a home hospital program are great candidates for MMS services as they are often monitored for additional time after their acute admission. This allows patients and providers to work together on medication changes or additional monitoring while still part of the home hospital program. An MMS visit within the first week of transition after the acute phase is an ideal model. This allows for medication changes while the patient still has 2-3 weeks remaining in the restorative or home health portion of the home hospital program.

Discharge Medication Reconciliation

Summary: Medication reconciliation is an important piece of all hospital discharges. It is extremely important in the home hospital setting as programs often send outpatient prescriptions while caring for the patient in the acute or inpatient phase of their care. It is critical for medication reconciliation to be completed on discharge to ensure patients have an accurate medication list.

Key Question: What role should pharmacy play in discharge medication reconciliation?

Considerations: Discharge medication reconciliation in the home hospital setting should closely mirror the process for patients in the brick and mortar hospital. Pharmacy often plays an important role in discharge medication reconciliation. After the provider has entered discharge orders, it's important for pharmacy to review these orders and clarify all discrepancies between the prior to arrival medications and changes made throughout the inpatient stay. This step is especially important in the home hospital setting as outpatient prescriptions are often utilized to obtain "inpatient" medications. These "inpatient" medications are often changed or discontinued upon discharge. Pharmacists are uniquely positioned to help with this discharge medication reconciliation process and ensure patients have an accurate medication list upon discharge from the home hospital program.



HOW TO JUSTIFY PHARMACY FTE TO SUPPORT THE PROGRAM

Summary: Home hospital programs are new and require dedicated resources to be successful. It may be sufficient to leverage internal resources initially for planning and program launch, but as the program grows, you will most likely need dedicated resources to care for the admitted patients.

Key Questions: What Pharmacy services are you insourcing and what are you outsourcing? What level of clinical care and operational support will your Pharmacy team be providing? Will these services change over the length of the patients' admission to the program?

Considerations: The extent of Pharmacy FTE needed to manage home hospital patients will depend on two key factors: the volume of patients projected to be enrolled in the home hospital program, and the extent of your Pharmacy team's engagement in the care of each patient.

Patient volume

Pharmacy FTE justification will be closely tied to patient volume. We recommend connecting with your home hospital leaders to gain access to their projected volume of admissions and daily census numbers for the first two years of the program. The administrators are undoubtedly using these numbers to forecast financial projections and staffing for other departments. It's beneficial to connect your needs to the overall program needs and make sure your FTE requirements are considered early in the process.

Pharmacy team's engagement

To predict your FTE needs it's essential to consider the extent of your team's engagement in the care of these patients. If you plan to provide clinical pharmacy services, we recommend considering your patient : clinical pharmacist ratio on your inpatient units and using that as a starting point for the number of pharmacists you'll need. Again, these are acutely sick patients, so you'll want to think of them like your acute care volume and clinical pharmacy workload. For example, if you have a typical patient : clinical pharmacist ratio of 20 inpatients per day, and your home hospital program predicts that six months into the program there will be an average daily census of 20 patients, you'll want to consider having at least 1.0 FTE added to support the care of these patients. Make sure to consider that these are inpatients and require care 24/7, so your FTE needs may be greater than simply 1.0 to accommodate care in the evening, overnights, and weekends.

Dispensing

- **Outsourcing:** If you plan to outsource, there should be minimal operational support needed. That said, our experience indicates there are periodic dispensing issues with outsourced pharmacies, and internal pharmacy staff are often asked to assist in the resolution.

- Insource as back-up Pharmacy: Some home hospital programs may choose to outsource most dispensing but leverage their hospital pharmacy as the back-up dispensing site (eg, after hours dispensing). It's important to anticipate this volume and consider if some portion of FTE, likely technician FTE, would be needed to add-in to your after-hours staffing model to support this back-up Pharmacy function.
- Insource as primary Pharmacy: This medication use process is a new phenomenon and requires different resources depending on how you decide to dispense. We recommend proactively requesting 1.0 FTE Pharmacy Technician. Even if there are only 3-4 patients enrolled initially, this new work is challenging, time-consuming and takes substantial coordination. The 1.0 FTE will enable your team to begin piloting and learning which dispensing processes will best integrate with your Pharmacy team and overall home hospital care team.

Proactively using the patient census projection data, along with the extent of your clinical and dispensing roles will enable you to engage effectively in FTE planning, and will facilitate growth of your team in conjunction with the growth of the home hospital program.



OPERATING WITHIN AND COMMUNICATING WITH THE BROADER HOME HOSPITAL TEAM

Summary: A multidisciplinary approach is vital to success for home hospital programs. Pharmacy dispensing and clinical services touch almost all aspects of patient care. For this reason, it's important for pharmacy staff and leadership to be engaged at all levels within your home hospital program.

Key Questions: What committees and meetings should have pharmacy representation? How will the pharmacy team communicate with frontline staff? How are operational and practice changes communicated to the broader home hospital team?

Considerations: Home hospital is a new and ever-evolving care model. The pace of change is far faster than the standard brick and mortar practice. This results in many new meetings, committees, and other obligations to work through challenges and improve the home hospital care model. With pharmacy services impacting almost all aspects of patient care, it's important for pharmacy to have representation at operational, clinical, and administrative engagements. Some examples may include home hospital planning and development, ongoing operational meetings, clinical practice meetings, and safety and quality committees. These engagements are often separate from similar meetings for the hospital practice due to the unique practice model of home hospital. This raises some additional questions. How much time and resources should pharmacy devote to the home hospital program? Who within the pharmacy department should participate in these committees and meetings?

Communication with the home hospital program is vital to success. With the practice changing and evolving rapidly, effective communication is essential to provide the highest level of pharmacy services. With frontline staff often split between virtual and in home staff, standard communication can be a challenge. Electronic communication (email, skype, EMR messages, etc.) are often utilized within the hospital setting for communication between frontline and administrative staff. In the home hospital setting, this can be a challenge as staff are often on the road or in patient homes. A detailed communication plan including electronic, phone and paging systems are essential for communication across disciplines.

Communication of operational or practice changes in a consistent and timely manner is also extremely important. Workflow and policy distribution across the multidisciplinary team is crucial to maintaining continuity. A cloud-based information storage system for the home hospital program should be considered to assure all staff (virtual and frontline) can access workflows, policies, and procedures in a timely manner. These workflows, policies and procedures should be reviewed and updated frequently as your home hospital program continues to evolve.

CONCLUSION

This is an incredibly innovative care model within our healthcare system. As a pharmacy profession, we can stand back and let others determine our fate or we can insert ourselves into the conversations and workflows. We as pharmacists and pharmacy leaders need to be at the forefront in creating the standard model to follow in which pharmacy is valued and utilized in the best way possible to serve our patients. Home hospital is an incredible opportunity facing us with endless opportunities to engage, demonstrate and reaffirm our value as pharmacists in patient care.

This care model combines our inpatient and outpatient practices like never before, addressing issues of transitions of care. Pharmacists engaged in this model must develop a unique, well rounded skill set. A home hospital model eliminates the distinction between an inpatient and outpatient pharmacist and challenges our practitioners to think holistically about the patient and their care. The role of pharmacists could morph into a new role specifically for home hospital patients or push current roles beyond comfort levels.

Lastly, operationally this is new territory for our profession. Inpatients are being cared for in their homes. We need to develop best practice standards and concurrently drive legislation that supports the appropriate dispensing models. We're blurring the lines between inpatient and outpatient dispensing and need rules that apply. Our profession should work together across the globe to push boundaries and advocate for legislative change that decreases barriers and puts the needs of our patients first.

Best of luck on this exciting new venture. Let's work together to make it great.

RESOURCES

ASHP KEY ISSUE - HOSPITAL-AT-HOME

1. [ASHP Issue Analysis, Background Information, and Resources](#)

PODCASTS

1. [ASHP Podcast - Hospital at Home: Operational Considerations](#)
2. [ASHP Podcast - Hospital at Home: Clinical Considerations](#)

ARTICLES

1. [Developing pharmacy services in a home hospital program: The Mayo Clinic experience](#)
2. [Executive summary of the meeting of the 2022 ASHP Commission on Goals: Optimizing Hospital at Home and Healthcare Transformation](#)
3. [Hospital at home: Development of pharmacy services](#)

ASHP PHARMACY EXECUTIVE LEADERSHIP ALLIANCE

1. [Hospital at Home and Alternate Sites of Care: Leading Pharmacy Services in a Shifting Landscape Report](#)

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