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Building Success into Today's Ambulatory Infusion Center

by Kathleen Hanish, R.N., M.S., C.N.A., and Patrick Silovich, R.N., O.C.N.

A

n ambulatory infusion center's viability depends on several factors, including quality of care and patient convenience.

Quality infusion services should be provided to patients in a comfortable, safe setting by qualified personnel who have immediate access to physicians in times of emergency. Convenience derives from a number of components, including plenty of parking, an accessible drop-off area, a door attendant to greet and assist patients, and flexible scheduling.

An infusion center must be able to sustain satisfactory levels of patient volume per day. Having a well-established name in the community, serving a wide geographic area, and providing quality services in a convenient setting are factors that may positively influence patient volume.

Institutions considering establishing an ambulatory infusion center must first consider a number of questions:

- Is the facility accessible and convenient?
- Is there a patient base sufficient to sustain an ambulatory infusion center?
- Do physicians and nursing staff support the development of such a center? (It is important to involve them in the planning process as early as possible.)
- Does the facility have qualified staff to provide the service?
- Has the institution addressed and

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evaluated all the economic issues?

If an institution can answer "yes" to these questions, chances are good for a center's success.

CASE IN POINT

In 1995 the Roger Maris Cancer Center, part of the MeritCare Health System located in Fargo, N.D., converted its outpatient chemotherapy area to the MeritCare Infusion Center. Oncology patients, as well as non-oncology patients from specialty areas such as internal medicine, neurology, and family medicine, receive infusion therapy services. Therapies provided include blood products, antibiotics, chemotherapy, steroids, hydration, immunologicals, and others. Among the services provided are catheter insertions and care, dressing changes, patient education, and training. A lab, pharmacy, and support services are located nearby.

Building support from key stakeholders, such as medical oncologists, neurologists, and internal medicine and infectious disease specialists, was critical from the outset. Before the infusion center was established, a nurse manager gave presentations at department meetings within the MeritCare system to explain to potential referring physicians what was planned and to gather their input. Oncologists were concerned that increased use of the infusion center by non-oncology patients would compromise their patients' ability to schedule suitable times for therapy. Non-oncology specialists wondered whether their patients would feel comfortable receiving IV therapy in an oncology area. When the center opened, these issues were closely monitored. Interviews with non-oncology patients receiving treatment have revealed that they are pleased with the arrangement and appreciate the comfortable setting and the quality of care

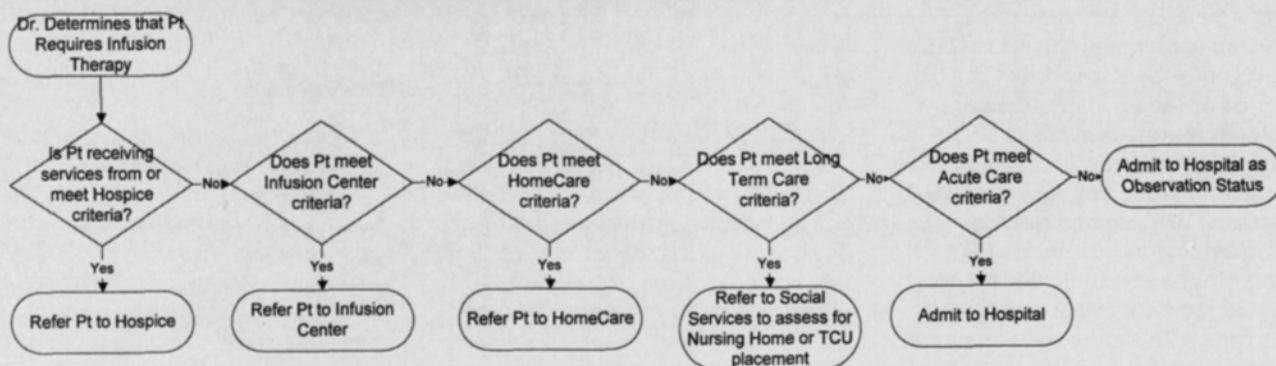
provided by the nursing staff.

After trying a number of different scheduling processes, the infusion center developed a method that has worked well for everyone—oncology and non-oncology patients, physicians, and staff. The scheduling method is based on two factors: infusion center availability and estimated treatment time required. The infusion center has twelve rooms with an average of forty-eight patient visits per day. Treatment time ranges from fifteen minutes for an injection to eight hours for multiple blood product transfusions or prolonged chemotherapy infusions. The scheduler is located in the infusion center where there is ready access to clinical experts if variability occurs in a clinical process that affects scheduling.

The scheduling method also includes a third factor to add convenience to a predominantly rural population. Treatment scheduling is coordinated with the physician office visit to allow the patient to see his or her physician and receive treatment on the same day. This service is important to the many patients who travel a long distance and who have limited resources. This scheduling method has the support of physician stakeholders because it addresses both patient and physician needs and can be easily explained to patients.

From the beginning, infusion center planners shared a commitment to providing quality care. Only qualified registered nurses, most of whom are oncology certified, administer therapy to patients. Oncology nurses have extensive experience in providing infusion therapy and are well prepared to deal with any adverse reactions. The nurses' station is centrally located to allow visibility into ten of the twelve treatment rooms, with the two corner rooms monitored by closed-circuit television.

Figure 1. Outpatient Decision Model for Infusion Therapy (Fargo-Moorhead-West Fargo Area)



Hospice Criteria

- Limited Prognosis
- Focus of care is on comfort
- Pt and family know the diagnosis and consent to Hospice services
- Pt resides in service area

Infusion Center Criteria

- Hours of Service: M-F 7a - 9p, Weekends & Holidays 8a - 4p
- Pt must be able to sit in chair 6 - 8 hrs
- Pt must be ambulatory or be able to transfer by wheelchair
- Pt with infectious disease will be evaluated for proper placement. Pt with TB, chicken pox, and herpes zoster will not be admitted.
- Pt under 18 will be screened on an individual basis re: age, size, and maturity level.

HomeCare Criteria

- Normal inability to leave home
- A considerable and taxing effort to leave and
- Absences from home are infrequent, or short duration, or to receive medical care
- Is it medically contraindicated to leave home?

Medicare will reimburse for HomeCare Nursing to administer IV therapy, supplies, and the following medications when administered with a pump:

Vancomycin	Heparin
Amphotericin	Ganciclovir
Morphine	TPN
Voscovir	Acyclovir

Chemo (for liver and colorectal cancer)
Desferal (for iron poisoning)

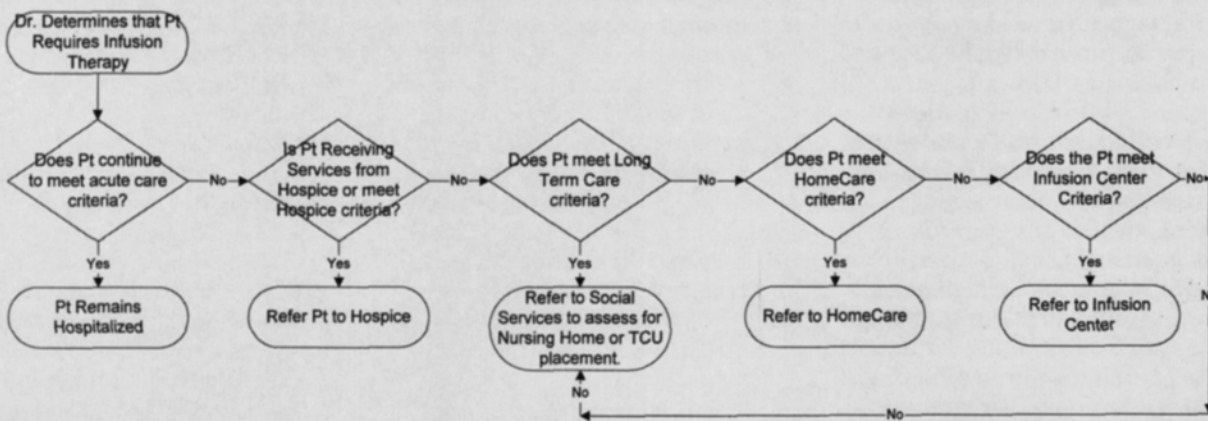
TCU / Nursing Home Criteria

- Pt must have 3 day (3 night) acute inpatient stay within the past 30 days
- Pt must have a skilled care need

Acute Admission Criteria

- Oral temperature above 103F
- Oral temperature above 102F with wbc above 15,000 mm or bacteria by smear
- Pulse < 40 or > 120
- Respiratory rate > 32/min (acute onset within 6 hours)
- Blood Pressure: Systolic < 80mm hg or > 250 mm hg, Diastolic > 120 mm hg
- Hemoglobin < 7 grams and symptomatic
- Serum NA < 120
- Serum Potassium < 2.5 or > 6.0
- Functional Impairment: Sudden Onset (within 24 hours)
 - * Impaired breathing
 - * Loss of sight, hearing, speech or sensation or movement of any body part.
 - * Disorientation
 - * Severe incapacitating pain
 - * Vomiting/Diarrhea with signs of dehydration

Figure 2. Inpatient Decision Model for Infusion Therapy (Fargo-Moorhead-West Fargo Area)



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Each treatment room is call-light equipped. If needed, there is immediate access to physicians. Oncologists' offices are adjacent to the infusion center, and the MeritCare Emergency Center is down the hall.

One of the major challenges in designing the center has been managing a shifting paradigm: the change from a standard clinic physician office schedule that operated from 8:00 a.m. to 4:00 p.m., Monday through Friday, to a patient-focused, needs-based model that runs 7:00 a.m. to 5:30 p.m., five days a week, and 8:00 a.m. to 12 noon weekends and holidays.

Another difficulty involved varying views about how ambulatory infusion services should best occur within a patient's treatment plan. Consensus was reached when staff from a variety of services helped develop two flow charts: an Outpatient Decision Model for Infusion Therapy (Figure 1) and an Inpatient Decision Model for Infusion Therapy (Figure 2). These flow charts encourage physicians and staff to identify the most appropriate treatment setting for patients receiving infusion services. The flow charts include patient criteria for each treatment setting option.

Both the inpatient and outpatient models begin when a physician identifies a patient needing IV therapy. For inpatients, the physician and/or oncology nurse must determine whether the inpatient setting continues to be appropriate. The inpatient flow chart is their tool to help transition the patient from inpatient to outpatient care. For outpatients, the flow chart operates in reverse, with inpatient admission as the final decision in a series of setting options.

For MeritCare, the establishment of an ambulatory infusion center was a good decision. Achieving a satisfactory level of patient volume has been an evolutionary process that occurred over a period of sixteen months. The infusion center currently averages forty to forty-five patients a day during the week, and eight to ten patients on weekend days and holidays. The center was not designed to replace home, hospice, or inpatient care for patients needing those services. However, for ambulatory patients, the ambulatory infusion center is the preferred site of service. ■

Expanding an Infusion Unit

Administration and staff at Memorial Medical Center in Springfield, Ill., recently made changes in the way they provide outpatient infusions to their patients. Outpatient services were incorporated into the oncology acute care unit. Just one year after their changes were initiated, the infusion unit has experienced a 59 percent increase in volume, and both patient and physician satisfaction have improved.

PREVIOUS POLICIES

Prior to 1990, patients at Memorial Medical Center in Springfield, Ill., had received their chemotherapy either as inpatients or in the physician's office.

During planning sessions for the new Regional Cancer Center facility in 1990, administration and staff noted the need to improve the infusion therapy process by creating a comfortable infusion unit within the cancer center that was easily accessible to outpatients. They placed the outpatient infusion area on the main floor of the Cancer Center near the offices of two oncologists and radiation therapy. The hospital laboratory and blood bank were on the same floor, and pharmacy preparation was one floor away. Hospital runners were available to transport blood products and medications. Designated parking near the entrance and greeters who helped direct or transport patients added to the convenience.

Reservations for treatment and appropriate orders were received via calls from the physician's office. Nursing staff related demographic information to the admitting department, which allowed patients to enter the treatment area directly

without checking in at the admitting area.

Initially the infusion unit served only oncology patients receiving chemotherapy, blood products, or stem cell pheresis. To be eligible for treatment on this unit, patients had to be ambulatory and must have had previous chemotherapy. One registered nurse covered the unit from 8 a.m. to 4 p.m., Monday through Friday, excluding holidays. Patients requiring services at other times were treated in the inpatient unit as outpatient observation patients.

By 1994 the infusion unit was experiencing a relatively low daily volume of patients due in part to the fact that most chemotherapy was being given in physicians' offices. The unit's limited criteria for admission as well as its limited hours of operation were believed to also have significantly affected patient volume. As a result, major operational changes were adopted.

CHANGES TO THE SYSTEM

One of the first changes was to relocate oncology outpatient services to an area adjacent to the oncology acute care unit. This area now includes space for four recliners and a bed for patients who have longer treatments or whose physical conditions require a more restful atmosphere. There are televisions, VCRs, and radios for diversion. A visitor's lounge is located next door, although most visitors prefer to stay in the infusion unit. Patients who are in the infusion unit at meal time are served a meal.

Incorporating the infusion unit into the inpatient unit has allowed greater flexibility with nursing staffing. Often there are enough patients scheduled to justify one registered nurse assigned to the unit. When volume is low, the nurse assigned to the infusion unit can also assist with inpatient activities. On less active days the charge nurse for the inpatient unit

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might oversee infusion patients. Other staffing alternatives have included assigning a registered nurse to the infusion unit and a lesser load of inpatients. Nursing staff have expressed satisfaction with caring for ambulatory patients, especially when they see patients they had cared for during an acute hospitalization come to the infusion unit on their lunch hour or after work. Seeing the "well" side of cancer care has been beneficial to staff.

Discussions with discharge planners and the hospital-affiliated visiting nurse association made clear the need to provide infusion therapy to non-oncology patients in a more appropriate setting. These patients had been treated in an outpatient area that was physically separate from, but staffed by, the emergency department. The emergency department, which had experienced a sharp increase in emergency patient volume, could no longer fully support infusion outpatient services.

Before accepting non-oncology patients, infusion unit staff solicited input from oncologists and the infection control department. Concern for neutropenic patients, who received treatments in this multiple patient area along with patients with infections, led staff to establish guidelines for the types of patients treated and services offered on the unit. The nurses on the infusion unit have two options when treating non-oncology patients:

- 1) adjust the patient's appointment to a time when there are no other patients in the unit
- 2) use an adjacent patient room for the patient's treatment. All central line blood draws for the laboratory are done in this area.

To market infusion services to non-oncology patients, information about services is published regularly in the hospital's *Physician Bulletin*. Staff also send out direct mailings to the departments of internal medicine and infectious

disease. Early on, meetings were established with departments with which infusion unit staff interact on a daily basis. For example, social service staff often negotiate with insurance companies over reimbursement for infusion therapy. Emergency department staff regularly refer patients to the unit. It is important that these staff know what the infusion unit offers and how it operates.

Computer-based programs have assisted the infusion unit manager with coordinating charges and billing, as well as measuring productivity. A simple computer charging system allows staff to directly enter charges for services. This program is interfaced with the hospital billing department to decrease paperwork and streamline the billing process. A program was also developed with the assistance of an acuity specialist to capture nursing productivity. A time study was conducted to determine nursing care hours. Increments of nursing time were entered onto the computer charging screen. Although the cost of nursing care is included in the treatment charge, the increments are reported with inpatient productivity. Each month the infusion unit manager is able to track the number of each type of treatment and the nursing time required to deliver each service.

LESSONS LEARNED

In just a few months, infusion unit staff found they would have to be more assertive in scheduling patients. Although every attempt is made to accommodate the patient's time preference, staff will negotiate with patients to ensure that treatment area space is available.

To provide better service with non-emergency blood transfusions, type and cross-match are completed the day before transfusion. In addition, chemotherapy orders are obtained the day before treatment. This preparation facilitates communication with the blood bank or pharmacy and helps ensure that

the blood or medication is available when the patient arrives and can be started in a timely manner. Delay in starting treatment is a major factor influencing patient satisfaction.

Revised patient documentation forms include a comprehensive patient profile designed to follow the patient's course for one year, both for inpatient and outpatient care, thus facilitating continuity of the plan of care. Infusion unit staff have also developed teaching materials for patients about the services they receive.

The first fiscal year after these revisions, the infusion unit has experienced a 59 percent increase in volume, which has validated the need for placement of one full-time equivalent registered nurse staff. Patient satisfaction continues to be high, especially in the areas of convenience and comfort with staff capabilities. Should patients need to be admitted as inpatients, they are pleased to have the same nurses caring for them as in the infusion unit. The patients who had previously been treated in the emergency department are especially pleased with the atmosphere of the infusion unit.

Consults by other members of the oncology team such as dietary, physical therapy, and social service are also more convenient when the infusion unit is located near the inpatient unit. Physicians often stop in the unit to see patients who otherwise would have had to make another trip to their offices.

The infusion unit at Memorial Medical Center's Regional Cancer Center is accomplishing its mission of providing quality, cost-effective care to the patients requiring outpatient services. The pediatric unit has also developed an outpatient infusion unit that mirrors the adult unit. The Regional Cancer Center's next project is to study the data to determine the need for expanding the size of the infusion unit and providing an area for the patients with transmittable infections. ■