Elements of Progressive Patient Care in the Yale Health Plan HMO

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AS PART OF A LARGER PROJECT directed at describing the utilization and costs associated with the intermediate care facility of the Yale Health Plan, this paper has three major objectives: *(a)* to summarize the literature on progressive patient care (PPC), with particular attention to the recent evolution of PPC, how it has been implemented in the past, and what effect the concept has on current health delivery systems; *(b)* to determine whether the Yale Health Plan-Intermediate Care Facility (YHP-ICF) meets the traditional characteristics of the intermediate care component of PPC; and *(c)* to discuss the advantages and disadvantages of an intermediate care facility for health maintenance organizations.

Progressive Patient Care

The progressive patient care concept has been used for centuries by the Japanese, by Florence Nightingale in the mid-1800s, and by military hospitals for many years *(1)*. Modern application of the concept to hospital in-patient facilities, however, began in the 1950s, and the term "progressive patient care" was first used in 1956 *(2)*.

The elements of PPC, as defined initially in the classic Public Health Service study *(2)*, included:

INTENSIVE CARE for critically ill patients who require close observation by nurses especially selected for their skill, training, and experience.

INTERMEDIATE CARE for patients requiring a moderate amount of nursing care. Included in this group are ambulatory patients and patients who are beginning to care for themselves.

SELF-CARE for ambulatory and physically self-sufficient patients who require only therapeutic, diagnostic, or convalescing services.

LONG-TERM CARE for patients requiring skilled and prolonged medical and nursing care, with emphasis on rehabilitation, occupational therapy, and physical therapy services.

HOME CARE for patients who can be adequately cared for in the home through the extension of certain hospital services.

OUTPATIENT CARE for ambulatory patients requiring diagnostic, curative, preventive, and rehabilitative services.

Patients in a PPC hospital are usually classified according to their nursing needs rather than by the more traditional specialty classifications, such as internal medicine, surgery, or obstetrics and gynecology.

Most of the PPC literature of the late 1950s and early 1960s highlighted specific hospitals that successfully implemented the various levels of nursing care within a single institution. The McPherson Community Health Center in Howell, Mich., and the Manchester Memorial Hospital in Manchester, Conn., are probably the two most well-known PPC hospitals. Both institutions have been studied extensively since 1959 *(3–7)*. Successful implementation of PPC in other hospitals has also been reported *(8–12)*.

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PPC has been described as "the best patient care possible at the lowest cost" *(12)*. A primary goal of PPC is to raise the level of patient care. This goal is achieved with more effective use of nursing personnel and facilities by grouping patients according to their nursing needs. PPC is also seen as an improved method of controlling costs. Experience has shown that nursing services are a major component of hospital costs. In one hospital, as a patient was moved from one level of PPC to another and his nursing needs decreased, the hospital was able to reduce per diem charges *(13)*. Cost savings are also realized by more efficient use of nursing personnel. During the first year of a PPC program in a military hospital, bed occupancy increased from 152 to 340, while corresponding ward nursing staff decreased from 96 to 87 *(14)*.

If PPC does in fact improve medical care and simultaneously reduce costs, it becomes logical to try to understand why enthusiasm for the idea peaked in the 1960s and now seems to be waning. Although most of the literature reports only the successful implementation of PPC, several articles *(6,9,12)* point out the following types of resistance to the PPC concept by medical staff and patients:

- Acceptance by some medical staff members was initially slow, and successful implementation was difficult without their support.
- Rapid progression through different levels of care was thought to be deleterious to a patient's recovery.
- Patients found it difficult to accept the self-care service because of its homelike atmosphere.
- Observation of patients in the self-care service was inadequate because of a lack of nursing staff.
- Patients objected to being transferred between units.
- Patients objected to the mixing of sexes in the intensive care and homeward-bound units.

The evolutionary trend in hospital construction during the past 15 years and an increased emphasis on coordination of services may also explain the waning support for PPC. The Hospital Survey and Construction Act of 1946, more commonly known as the Hill-Burton program fostered a national program of hospital modernization and construction and is equally well known for stimulating regionalization. Efforts of the Hill-Burton program engendered recognition of the need for planning directed at interrelationships and coordination among hospital facilities into a regional system. Thus, just as the first experiments in PPC were being implemented, the concept of regionalization was gaining popularity as a method for rational hospital planning. To suggest at that time that every hospital formally establish the various stages of progressive patient care seemed to be in direct contradiction to the concept of regionalization.

Improved patient care and the potential cost savings associated with PPC, however, remained attractive to several hospital administrators. In the 1960s some hospitals successfully experimented with selected elements of the PPC concept. During the past decade, use of intensive care units expanded rapidly. Today, few large urban hospitals are without an intensive care unit or a cardiac care unit, or both. Sturdavant and Mickey *(15)* and Walker *(16)* reported success with minimal care units within the hospital. Although each of their units had unique criteria for the minimal care patients, these authors recognized that all patients do not require continuous nursing supervision. The minimal care unit met the medical needs of such patients and also allowed the hospital to realize savings in reduced nursing care and services. Other hospitals arranged, through third-party payers, to pass these savings in nursing care on to the patient in the form of reduced hospital bills *(13,17)*.

Extended care is another aspect of PPC that has been widely adopted, principally as a result of Medicare. Although the pure PPC model would have incorporated an extended level of care within each hospital, the trend away from such duplication favors instead transfer agreements between one extended care facility and several general hospitals.

Thus, in the past 15 years the concept of PPC has evolved from a purely hospital organizational model to a system of health care incorporating many types of health facilities. Although there are exceptions, it seems that the elements of PPC are no longer considered to be services such as intensive care, intermediate care, or self-care. Instead, the components of PPC are institutions—hospitals, health centers, limited care facilities, and extended care facilities—and home care. Although the "PPC hospital" may have limited applicability today, the concept of PPC personifies the goal of health care delivery: the right services, for the right patient, at the right time.

The Yale Health Plan

The Yale Health Plan (YHP), a comprehensive prepaid group practice for the Yale University community, is located in a five-story facility that was opened in July 1971. The facility replaced both the Yale Infirmary (constructed in 1892) and an overcrowded facility for ambulatory patients. Three floors of the health center are for ambulatory patient services, one is for inpatients, and one is for support services. The building contains a pharmacy, a clinical laboratory, physiotherapy facilities, and a diagnostic radiology suite; dietary services are also provided *(18)*.

The center was planned as a coordinated university health service for all students as part of their tuition *(19)*. Faculty and employees can enroll in the Yale Health Plan or in the local Blue Cross-Blue Shield plan; each group can supplement its coverage by obtaining major medical insurance *(18)*.

A unique feature of the YHP is its inpatient facility, which is referred to as the "intermediate care facility" (ICF). The ICF has 66 beds; 30 beds are in daily service and the remainder are held in reserve for university emergencies. Preliminary analysis indicates that approximately one-third of the patients admitted to the ICF would otherwise be admitted to a general hospital. Typically, these are patients who require pre-admission evaluation or post-hospitalization care, or they have acute medical conditions which do not require monitor-

ing or intensive nursing care. Since the ICF can be operated at a lower per diem cost than a general hospital and it diminishes the need for admission to a general hospital among the plan's members, it is believed that the facility reduces the costs of the plan *(18)*.

According to an initial review of the ICF patients' records, internal medicine, orthopedics, general surgery, psychiatry, and obstetrics-gynecology are the most common specialties admitting patients to the facility. The predominance of these specialties reflects both the large student membership of the YHP and the admitting practices of the plan's individual physicians. Research in progress includes an analysis of the use of hospital and ICF services by plan members, as well as the decision making by YHP physicians concerning their use or nonuse of inpatient facilities for care of patients.

Preliminary results of the analysis reveal that the following physical limitations of the ICF influence the plan's physicians and their approach to admission practices: absence of an operating room, absence of a blood bank, lack of sophisticated monitoring equipment, lower staffing ratios than in a short-term general hospital, and inconvenience for hospital-based specialists. Additional factors, which influence psychiatric admissions, are absence of locked doors, the facility in general is not "suicide proof," it is relatively easy to leave the facility, and the nursing staff does not have special psychiatric training.

The following five categories of patients are hospitalized in the ICF:

Students: The ICF is the university's infirmary for students who cannot convalesce in their dormitories or apartments because they have infectious diseases or mental problems. Pharyngitis, infectious mononucleosis, and mild depressive reactions are examples of the most common conditions for which students are admitted. Typically, the student is admitted to the ICF for a short time and then discharged.

Patients requiring only ICF care. This category includes students and nonstudent members of the YHP who have medical conditions that can be treated at the ICF. Obviously, the ICF would not be appropriate for patients requiring intensive care or other services not available in the ICF.

Patients requiring pre-hospital evaluation. YHP physicians can admit pre-hospital patients to the ICF and have ready access to laboratory and X-ray services. If the patient's medical condition becomes too serious for intermediate care, he is transferred to the affiliated general hospital.

Patients requiring post-hospital care. YHP members can be transferred to the ICF when they no longer need general-hospital care and when an intermediate level of care is medically desirable.

Patients requiring several types of care. The ICF caseload also includes a fifth category of patients who represent a combination of the preceding four groups. It is not uncommon for a member to be admitted to the ICF, transferred to the hospital, and eventually readmitted to the ICF before final discharge. A possible sequence might be as follows: A patient is admitted to the ICF because of abdominal pain, and diagnostic tests confirm that he has appendicitis. He is then transferred to the hospital for an appendectomy and later readmitted to the ICF for postoperative convalescence before final discharge.

The ICF Compared With PPC

Of the six components of PPC—intensive, intermediate, self, long-term, home, and outpatient care—only long-term and home care are not provided by the ICF. Yale Health Plan members who need intensive care are admitted to the affiliated hospital. The youthful population of the plan generally precludes the need for long-term care. Although informal arrangements between the YHP nursing service and the Visiting Nurse Association cover home care services, such services are not within the plan's benefit structure at present. Outpatient care is provided in the YHP's ambulatory care facility and, as subsequently described, the remaining components of PPC—intermediate and self-care—are also provided in the ICF.

The ICF is indeed an intermediate care facility; however, it is too simplistic to describe its function as the provision of only an intermediate level of care. Students' needs as well as the varying demands of the nonstudent members have broadened the traditional PPC nursing services in the ICF.

The PPC literature ranges from descriptions of the types or levels of care provided in intermediate and self-care facilities to descriptions of levels of care that were not defined originally as components of PPC; these levels are continuing, partial, and minimal care. As shown in the table, the levels of care described in the PPC literature were compared with those provided by the YHP-ICF. The articles selected for this comparison span 11 years. They were selected because each specifically identified the medical needs of the patients admitted to the particular level of care discussed.

From the descriptions of patients' needs that various articles list for the same level of care, it is apparent that there is a lack of universal agreement on which needs are appropriate for a particular level of care. Ford *(11)*, Hunter and Cleveland *(14)*, Jeffers *(10)*, and DeVries *(7)* describe intermediate care patients as requiring "less intensive," "a lesser degree," or "less critcal" nursing care. Walker *(16)*, however, describes the same requirements for minimal care patients.

Ford *(11)* and Griffith and co-authors *(21)* use the self-care unit for patients hospitalized for diagnostic tests, whereas Walker *(16)* and Hunter and Cleveland *(14)* place such patients in the minimal care unit. Gordon and associates *(20)* distinguish between ambulatory and nonambulatory patients requiring diagnostic tests by placing those who are ambulatory in minimal care and those who are nonambulatory in intermediate care.

For ambulatory patients and those approaching dis-

Types or levels of care described in selected literature on progressive patient care that are or are not provided at the Yale Health Plan-Intermediate Care Facility (YHP-ICF)

Author and types or levels of care	*Provided by YHP-ICF*
Ford, 1960 (11)	
Self-care; ambulatory patients hospitalized for:	
Diagnostic tests	Yes
Learning self-care	Yes
Transition and adjustment from hospital to home	Yes
Emotional readjustment, mild mental disturbance	Yes
Other health problems which patients can participate in solving	Yes
Intermediate care:	
Less intensive observation and care	Yes
Patients still need physical and emotional nursing care	Yes
Patients are ambulatory part of the day	Yes
Patients are taught some aspects of self-care	Yes
Walker, 1964 (16)	
Minimal care:	
Patients coming to the hospital for diagnosis	Yes
Patients recovering from surgery or serious illness	Yes
Patients requiring treatment but not special hospital care	Yes
Medical Economics, July 26, 1965 (6)	
Intermediate care; patients in less-critical condition	Yes
Continuing care; patients who have good chance of recovery through physical or occupational therapy	Yes
Self-care; ambulatory patients and those approaching discharge	Yes
Jeffers, 1966 (10)	
Intermediate care; patients in less-critical condition	Yes
Self-care; ambulatory patients and those soon to be discharged	Yes
Gordon, et al., 1966 (20)	
Intermediate care:	
Moderately ill	Yes
Patients requiring diagnosis or treatment	Yes
Patients for whom treatment is only palliative (the terminally ill)	No
Patients with nonemergency conditions	Yes
Patients requiring continuous skilled care and techniques	Yes
Patients needing treatment to prevent complications	Yes
Patients "in and out of control"	Yes
Patients having exacerbations or remissions	Yes
Patients who are ambulatory for short periods	Yes
Minimal care:	
Ambulatory patients who are convalescing or who need daily or more frequent diagnostic studies or therapy—require daily medical supervision	Yes
Ambulatory patients waiting for surgery or transfer to another service whose conditions and distance or difficulty of transportation between home and hospital make discharge for a temporary period undesirable or impractical	Yes
Patients should not remain under minimal care for more than 7 days	No
Sturdavant and Mickey, 1966 (15)	
Minimal care:	
Ambulatory patients	Yes
Patients eligible for the minimal care unit 2 nights or more if transfer is required	No
Patients who have no fever, no special nursing needs, no unsightly wounds, no massive dressings, no emotional disturbances, and so forth	No
Patients who are able and willing to—	
Bathe and dress without assistance	Yes
Go to the nursing station for medications, when scheduled	Yes
Patients who require only minimal nursing care	Yes
Griffith, et al., 1967 (21)	
Intermediate care:	
Patients requiring "normal" care	Yes
Standard admission procedures—	
Blood pressure	Yes
Complete blood count	Yes
Urinalysis	Yes
Venereal disease tests	No
Temperature and pulse rate 2 times a day; if elevated, every 4 hours	Yes
Self-care:	
Ambulatory patients who can dress themselves	Yes
Patients who can care for their bodily needs	Yes
Patients who can walk to the cafeteria	[1]Yes
Patients who require minimum nursing care	Yes
Patients requiring diagnostic workups	Yes
Patients requiring preoperative procedures	Yes
Patients requiring adjustment of medications	Yes
Advanced convalescents becoming conditioned to home-like living before returning home	No
No routine or standing orders	No

Types or levels of care (table continued from page 122)

Author and types or levels of care	*Provided by YHP-ICF*
Phillips, 1967 (22)	
Intermediate care:	
Patients requiring active medical care for chronic conditions for as long as specific medical treatment is justified	Yes
Patients needing lengthy hospitalization	Yes
Patients responding slowly to treatment	Yes
Patierno, 1968 (12)	
Semi-acute or convalescent care:	
Patients requiring care between acute phase of illness and discharge	Yes
Patients requiring only casual nursing care, bed rest, supervised diet, medication, or miscellaneous random special services	Yes
Hunter and Cleveland, 1969 (14)	
Intermediate care:	
Patients requiring a "lesser" degree of nursing care	Yes
Many patients were ambulatory	Yes
Minimal care:	
Ambulatory patients requiring little nursing care	Yes
Patients undergoing diagnostic workup	Yes
Patients well into convalescence	Yes
Self-care:	
Convalescent patients still undergoing continued treatment in physical therapy, occupational therapy, or job therapy	Yes
Patients requiring no nursing care	Yes
Orthopedic patients undergoing continued treatment in physical therapy, occupational therapy, or job therapy	
DeVries, 1970 (7)	
Intermediate care:	
Patients needing nursing care for acute conditions	Yes
Patients needing less critical care than those in the special-services unit	Yes
Knowlton and Dunn, 1971 (17)	
Self-care:	
Patients can get in and out of bed without assistance	Yes
Patients can bathe without assistance	Yes
Patients can get to the bathroom without assistance	Yes
Patients can cut food, feed themselves, and brush their teeth without assistance	Yes
Partial care:	
Patients need 1 person to help them in and out of bed; may also need assistance in walking	Yes
Patients need assistance in bathing	Yes
Patients need assistance in getting to the bathroom or must be given bedpan or urinal; also need to be handed washcloths	Yes
Patients need help with eating and brushing teeth	Yes

[1]Not enforced.

charge, Jeffers *(10)* describes the self-care unit, Patierno *(12)* the semi-acute or convalescent care unit, and Gordon *(20)* the minimal care unit.

The apparent lack of agreement in definitions of self-care, intermediate care, minimal care, and so on must be considered in this attempt to evaluate the ICF in terms of levels of care described in the literature. Another limitation of the comparison is an absence of descriptors. Ford *(11)* includes emotional readjustment for "mild" mental disturbances under self-care, but does not define "mild" and does not present diagnostic examples. Medical Economics *(6)* describes intermediate care for patients with less-critical conditions, but does not explain "less" or how the decision is made to transfer a patient from intensive care to intermediate care. Many authors list several needs of patients for a particular level of care, but the relative importance of these needs is rarely discussed nor is their frequency distribution presented.

Despite these limitations, the table shows that the ICF is providing all aspects of intermediate care, self-care, continuing care, minimal care, and partial care as defined in the literature cited. The care provided by the YHP-ICF has been modifed similarly to that described in the literature to include not only intermediate care patients but to fill gaps in the inpatient needs of the Yale Health Plan population. Thus, the ICF provides a composite of services, and the extent to which one particular level of care predominates depends on both patient need and demand.

Seven characteristics described in the literature are not characteristic of YHP-ICF patients, as shown in the table. Gordon and associates *(20)* place treatment of the terminally ill under intermediate care. The youthful membership of the YHP eliminates the need for this type of care in the ICF. Griffith and associates *(21)* include a venereal disease test among the standing admission procedures for intermediate care; the ICF does not. The time limitations for minimal care patients cited by Gordon *(20)* and Sturdavant and Mickey *(15)* do not apply to the ICF. Nor does the ICF exclude "patients with fever, special nursing requirements, massive dressings, emotional disturbances, etc." as did the minimal care unit described by Sturdavant. Finally, two characteristics of Griffith and associates' self-care unit do not apply to the ICF. The ICF may admit patients for self-care purposes; however, the facility is geared toward the intermediate care patient. Standing

orders do exist, and the ICF itself resembles an intermediate care floor of a hospital rather than the homelike atmosphere of a self-care unit.

Discussion

As stated earlier, this article is part of a larger project that is essentially a case study of the YHP-ICF. It is hoped, however, that the overall project and this paper will have general applicability for other university-based HMOs, as well as non-university health plans. Thus, our following discussion focuses on describing the ICF in terms of three general areas of concern: costs, management, and patient care.

Costs. If it can be shown that the existence of the ICF results in an overall reduction in total hospital costs, this would indeed be significant for health maintenance organizations in general. It is fairly obvious that the ICF, lacking the sophisticated equipment and facilities of the acute-care, general hospital and having lower nursing and staffing ratios, has a lower per diem cost than the general hospital. Thus, for medical care where the length of stay in the ICF replaces an equal length of stay in the hospital, costs in the ICF obviously would be lower. If, however, there is a tendency to keep patients longer in the ICF than if the same patients had been hospitalized in a general hospital, then it must be determined whether the lower per diem ICF costs compensate for the difference in length of stay. A subsequent phase of the project is directed at providing the answers to such questions. Currently, it is generally believed that the ICF does, in fact, lower the costs of hospitalization for Yale Health Plan members.

Management. Other health maintenance organizations may be interested in learning why the YHP decided to locate the ICF within its health center rather than simply taking over a floor of the affiliated general hospital for intermediate care use. Although several reasons are discussed here, the overriding consideration was that the Yale Health Plan would have complete administrative and medical management of its intermediate care patients.

There are definite advantages in locating an ICF in a general hospital. If hospital space is available, the conversion of an existing floor into an intermediate care facility eliminates the construction costs of a new facility. In addition, transferring patients from an acute-care floor to an intermediate-care area is certainly easier and less expensive than transporting them to a different facility. Although the YHP-ICF is located less than 2 miles from the affiliated hospital, patients must be transported between the two institutions. It has been shown that third-party payers are willing to establish varying reimbursement schedules so that patients receiving less costly nursing care pay lower daily room charges than the acute-care patients in a general hospital *(13,17)*.

Concerning the Yale Health Plan, it is doubtful whether space at the affiliated hospital could have been provided for an intermediate care unit. Special third-party arrangements would have been equally difficult. Even if both had been possible, it was decided to locate the ICF within the YHP's own health center for the following reasons:

1. The health plan retains complete control over staffing, admissions, and costs; such control would certainly be diminished in a hospital-based ICF.

2. The availability of YHP professional services in the same building as the ICF has a direct influence on the usage of the ICF. It is more convenient for YHP physicians to follow intermediate care patients in the same building in which they are treating ambulatory patients. The location of the ICF within the health center encourages physicians to admit patients to the ICF who might otherwise be admitted to the hospital. Interestingly, the Yale Health Plan experienced a significant increase in ICF utilization between fiscal years 1972 and 1973. As physician confidence in the ICF increased, the admission rate increased; however, it has been difficult to interest hospital-based specialists such as plastic surgeons, otolaryngologists, and urologists in using the ICF. These specialists prefer to keep their patients in the hospital; again, convenience seems to be the logical reason for this preference.

3. YHP laboratory and X-ray costs are substantially lower than the same services at the affiliated hospital. This saving in ancillary costs probably would not be realized in a hospital-based ICF.

In addition to the preceding considerations for locating the ICF in the the Yale Health Plan's ambulatory service building, other managerial advantages have accrued to the health plan as a result of the ICF.

Increased efficiency in the management of hospitalized patients. Patients have been transferred between the affiliated hospital and the ICF with little difficulty or delay. Thus, the Yale Health Plan has a continuous option to hospitalize its members in whichever inpatient facility is most appropriate, economical, and efficient for their needs.

Increased physician satisfaction. For YHP physicians seeing ambulatory patients at the health plan's facility, the convenience of hospitalizing some of their patients in the same building greatly enhances their satisfaction in working for the YHP. The ICF is a bonus for the YHP medical staff, and it could be presented as such in the recruitment of new physicians.

Increased member satisfaction. For many YHP members, the ICF is an extra benefit not available in other prepaid groups or to persons who have traditional indemnity insurance. As discussed in the following section, the ICF cares for many types of patients who otherwise would be required to convalesce at home. YHP members who have been hospitalized in the ICF have been overwhelmingly enthusiastic about the type and quality of care they received. For these persons, the ICF is one additional reason for maintaining their membership in the YHP.

Patient care. PPC has been defined as "the right patient, in the right bed, with the right services, at the right time" *(2)*. Although at present there is little analytical evidence to prove that the ICF results in improved care for YHP members, several factors relating to quality of

care should be considered to determine whether an intermediate facility would be advantageous for other prepaid group practices:

1. All hospital patients do not require acute-care and short-term general care. Exposure to the emotional trauma of an acute-care general hospital is minimized for the intermediate care patient.

2. It is generally held that many patients benefit by some transitional level between acute care in a hospital and discharge to their homes. The intermediate-care unit provides this transition for many patients and thus helps to avert potential relapses that result when patients are discharged too rapidly.

3. The atmosphere of an intermediate-care unit is less hectic and fosters greater independence for the patients than does the general hospital. Therefore, the intermediate-care unit has inherent therapeutic advantages.

4. Patients who might benefit from hospitalization but who would not be admitted to the affiliated hospital (for example, patients with severe situational problems or pneumonia) can be admitted to the ICF.

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SYNOPSIS

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The results of a study of the use of intermediate care beds in the intermediate care facility (ICF) of the Yale Health Plan, a prepaid group practice plan for students and an enrolled nonstudent population, indicate that the ICF may be a possible model for other health maintenance organizations. The ICF, with 30 beds in active use, is located in the Yale health center. Approximately one-third of the ICF patients would have been admitted to the affiliated short-term general hospital if the ICF did not exist. The plan's medical staff also has the option of transferring patients between the affiliated hospital and the ICF, depending on which institution is most appropriate for the patient's needs.

A comparison of the levels of care provided in the ICF with those presented in selected articles from the progressive patient care literature revealed that the ICF is not only providing intermediate care but several other classic elements of progressive patient care —self care, continuing care, minimal care, and partial care.