Survey Instrument to Study Institutional Care Services for Convalescent and Long-Term Patients

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WITH THE ADVENT OF MEDICARE, hospitals and other health care institutions are faced with a growing number of patients who occupy beds in acute care hospitals and related health facilities for prolonged periods. Many of these patients are inappropriately placed in relation to the level of care they require. This misuse of resources is of concern to the hospital administrator, the medical staff, the hospital utilization review committee, and the third-party payer.

Prudent use of our community health facilities and resources dictates the need to evaluate the utilization of existing facilities and services and to determine the steps which should be taken to bring about more efficient utilization. The goal of these steps is to insure a satisfactory quality of care for each patient commensurate with his needs at the lowest possible cost.

Among the research projects developed under the aegis of the Health Services Research Center of the University of North Carolina (UNC) are several concerned with the development of instruments for evaluating the delivery of health services. With the center's support, one such instrument was constructed as part of a 1970 study of hospital-based, long-term care units in North Carolina by the Department of Hospital Administration, UNC School of Medicine. This study was supported by the Health Services Research Center through research grant 5P16 HS00239-03 from the National Center for Health Services Research and Development, Department of Health, Education, and Welfare. The complete report of this study with the findings is available on request to Archer (*1*).

Instrument Development

The purpose of our report is to describe the instrument, its development, the method of administering it, its advantages and limitations, and the purposes for which it can be used.

The principal objectives of the project for which the instrument was developed and designed follow:

1. To describe the administrative characteristics and organizational patterns in the relationship between hospitals and their long-term care units
2. To explore the demographic and health characteristics of the patient population in the hospital-based long-term care units
3. To determine the effect of the long-term care units upon the utilization of beds for acute care in the parent hospital
4. To identify transfer barriers which prevent the movement of patients to appropriate facilities for care.

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In developing the instrument for the project, a detailed review was undertaken of the objectives sought, the type of data required to enable the investigation to satisfy the objectives, the method to be used in collecting such data to insure its validity and, finally, the method of data analysis to be employed.

Early in the review period, literature was searched for reports of similar studies, with special attention given to the type of data acquired and the methodology employed in conducting such studies (*2–5*). It soon became apparent that the nature and scope of the study of hospital-based, long-term care units in North Carolina required a new approach and more detailed data.

For example, it was evident, in exploring the effect of these units upon the utilization of beds for acute care in the parent hospital, that not only should the health characteristics of patients staying for long periods in beds for acute care be identified, but also the appropriateness of their assignment and the barriers which prevented their movement to more appropriate facilities. During this initial review several consultants explored the development and design of an instrument that would assure the acquisition of valid data to fulfill the requirements of the objectives.

Several drafts of the survey instrument were prepared and analyzed, with each item weighed and subjected to critical review. These reviews resulted in a working survey instrument which was then tested in two hospitals and one nursing home facility. Our purpose was to observe the attitudes and ability of the nurses to understand the concept and provide the essential data. As a result of these field tests, a few minor changes were made before the final printing of the form, which is reproduced on the next four pages. Copies of the instructions for interviewers who use the long-term patient care survey form are available from Archer.

The instrument was designed to be filled out by an experienced interviewer familiar with medical terminology as well as with the characteristics of institutional patient care services. In the North Carolina study, the interviewers from the university's School of Medicine and the Health Services Research Center included two faculty members from the department of hospital administration, two physicians, one registered nurse, and one senior medical student.

It is our opinion that completion of the form by a few qualified and well-briefed interviewers enhances the validity of the data collected. This method of data acquisition avoids the accumulation of questionable data based on wide variations in interpretations by persons without intimate knowledge of diagnoses and of the characteristics of patient care. It also permits the trained interviewer, through appropriate inquiries, to clarify for recording, at the time of the survey, information which otherwise might result in a faulty record.

The sources of information recorded on the survey form were the patient's institutional medical records, yielding specific demographic data and medical information, and the charge nurse.

Zimmer and Groomes, in their study (*6*), have shown a high degree of agreement between judgments of the charge nurse and the attending physician regarding the physical status of convalescent and long-term patients, their needs for various levels of care, and the appropriateness of their placement. Many observers believe that the judgments of the charge nurse, who has the opportunity and, in fact, the responsibility for observing the day-to-day condition of each patient under her care, are perhaps more valid than those of the attending physician, who may see the patient at irregular and infrequent intervals.

The interviewer should be assured that the charge nurse is prepared to give a reasonable block of time for the interview, preferably without interruption, if a considerable number of patient records are to be reviewed with her. In the UNC study it was found that, after the first few forms were completed, the survey instrument could be completed for each patient in less than 10 minutes.

Categories of Data Collected

The categories of information in the instrument can be summarized as follows:

1. Demographic data
2. Principal type of care being rendered
3. Diagnosis
4. Physical impairments with scaled measurements
5. Sensory deprivations with scaled measurements
6. Mental status and behavioral patterns
7. Nursing assistance required in activities of daily living
8. Bed status and degree of ambulation
9. Nursing care provided
10. Restorative nursing care
11. Hospital services utilized
12. Medications (type and number)
13. Diet

LONG-TERM CARE PATIENT SURVEY

Sequence _____ (1-5)

SURVEY DATE _____ Mo. (6-7) _____ Day (8-9), 19_____ (10-11)

INSTITUTIONAL CODE: _____ (12-14)

(15) **TYPE OF FACILITY:**
1—Hosp.
2—Hosp. ECF
3—Hosp. NH
4—Hosp. ECF-NH
5—ECF-NH
6—ECF
7—NH

PERSONAL DATA:

Name: _____ (Last) _____ (First) _____ (Initial)

Soc. Sec. No. _____ (16-18) - _____ (19-20) - _____ (21-24) Patient No._____

Date of Adm. _____ Mo. (25-26) _____ Day (27-28), 19_____ (29-30)

(31) **L.P.S. to Date:**

1—Less than 15 days
2—15 to 30 days
3—31 to 60 days
4—61 days to 6 mos.
5—6 mos. to 9 mos.
6—9 mos to 12 mos.
7—1 yr. to 2 yrs.
8—2 yrs. to 5 yrs.
9—Over 5 yrs.

(32) **Sex:** 1—Male 2—Female

(33) **Race:** 1—White 2—Nonwhite

(34) **Marital Status:** 1—Mar. 2—Sing. 3—Wid. 4—Div. 5—Sep. 6—Ukn.

(35) **Age Group:**

1—Under 18
2—18-34 yrs.
3—35-44 yrs.
4—45-54 yrs.
5—55-64 yrs.
6—65-74 yrs.
7—75-84 yrs.
8—85 and over
9—Unknown

Place of Residence:

(36) **State:**
1—N.C.
2—S.C.
3—Va.
4—Tenn.
5—Ga.
6—Other St.
7—Unknown

(37) **County:**
1—Same County as Facility
2—Adjacent County
3—Beyond Adjacent County
4—Unknown

(38) **Source of Referral:**

1—Home, hotel or rooming house
2—General hospital
3—Special hospital (TB, psy., chronic disease)
4—ECF
5—Nursing Home
6—Rest home or home for the aged
7—Other
8—Unknown

(39) **Principal Type of Care Being Rendered:**

1—Diagnosis and/or treatment
2—Short-term convalescent or restorative care (under 30 days)
3—Long-term rehabilitation care
4—Long-term custodial or terminal care
5—Protective living (no nursing care needed)
6—Other (Specify: _____)

CODE NUMBERS FOR DIAGNOSES

Code #	Diagnosis	Code #	Diagnosis
01	Heart diseases	11	Psychoses
02	Hemiplegia (mainly from stroke)	12	Psychoneuroses & other behavior disorders
03	Other circulatory diseases	13	Diabetes
04	Senility	14	Neoplasms
05	Hip Fracture	15	Genitourinary diseases
06	Other Fracture	16	Gastrointestinal diseases
07	Arthritis and rheumatism	17	Total blindness
08	Paralysis agitans	18	Respiratory
09	Multiple sclerosis	19	All other diagnoses
10	Other paralyses	20	Unknown

CURRENT MEDICAL DIAGNOSES:

_____ (40-41) _____ (42-43) _____ (44-45) _____ (46-47) _____ (48-49) _____ (50-51)

_____

_____

DISABLING CONDITIONS:

	None	Slight Impairment	Moderate Impairment	Severe Impairment
(52) **Tremor**	1	2	3	4
(53) **Paralysis**	1	2	3	4

	None	Foot or Hand	Arm or Leg	Two Extremities	Three Extremities	Four Extremities
(54) **Amputation(s)**	1	2	3	4	5	6

SENSORY DEPRIVATION:

	Unable to Rate	No Impairment	Slight Impairment	Moderate Impairment	Severe Impairment	Complete Loss
(55) **Speech**	1	2	3	4	5	6
Hearing:						
(56) Without prosthesis	1	2	3	4	5	6
(57) With prosthesis	1	2	3	4	5	6
Vision:						
(58) Without glasses	1	2	3	4	5	6
(59) With glasses	1	2	3	4	5	6

(60) **MENTAL STATUS:**

1—Unable to rate
2—Oriented all the time
3—Confused some of the time
4—Confused most of the time

PRINCIPAL BEHAVIOR PATTERNS:

	Unable to Rate	Rarely	Some of the Time	Most of the Time
(61) **Combative**	1	2	3	4
(62) **Wanders**	1	2	3	4
(63) **Withdrawn**	1	2	3	4
(64) **Belligerent**	1	2	3	4
(65) **Noisy**	1	2	3	4
(66) **Cooperative**	1	2	3	4

NURSING ASSISTANCE WITH A.D.L.:

A.D.L.	INDEPENDENT	DEPENDENT
(67) **Bathing** (sponge, shower or tub)	1—assistance only in bathing a single part (as back or disabled extremity) or bathes self completely	2—assistance in bathing more than one part of body; assistance in getting in or out of tub or does not bathe self
(68) **Dressing**	1—gets clothes from closets and drawers, puts on clothes, outer garments, braces; manages fasteners; act of tying shoes is excluded.	2—does not dress self or remains partly undressed
(69) **Toileting**	1—gets to toilet; gets on & off toilet; arranges clothes; cleans organs of excretion; (may manage own bedpan used at night only and may or may not be using mechanical supports.)	2—uses bedpan or commode or receives assistance in getting to and using toilet
(70) **Transfer**	1—moves in and out of bed independently & moves in and out of chair independently (may or may not be using mechanical supports)	2—assistance in moving in or out of bed and/or chair; does not perform one or more transfers
(71) **Continence**	1—urination and defecation entirely self controlled	2—partial or total incontinence in urination or defecation; partial or total control by enemas, catheters, or regulated use of urinals and/or bedpans
(72) **Feeding**	1—gets food from plate or its equivalent into mouth (precutting of meat and preparation of food, as buttering bread, are excluded from evaluation)	2—assistance in act of feeding; does not eat at all or parenteral feeding

(73) **BED STATUS:**

Ambulatory:
1—Out of bed 6-12 hours per day
2—Out of bed 2-6 hours per day
3—Out of bed 1-2 hours per day

Chairbound:
4—Out of bed 6-12 hours per day
5—Out of bed 2-6 hours per day
6—Out of bed 1-2 hours per day
7—Bedfast

(74) **AMBULATION:**

1—Climbs stairs with no human assistance
2—Climbs stairs only with human assistance
3—Walks with no human assistance
4—Walks only with human assistance
5—Walks with walker or cane
6—Walks with crutches
7—Patient uses wheelchair with no human assistance
8—Patient uses wheelchair only with human assistance
9—Not applicable since patient is bedfast

PATIENT'S GENERAL CONDITION SINCE ADMISSION:

	Unable to Rate	Improved	Unchanged	Deteriorating
(75) **Physically**	1	2	3	4
(76) **Psychologically**	1	2	3	4

(77-79)—Blank

(80)-A (card sequence)

Sequence_____
(1-5)

NURSING CARE PROVIDED:

		None	PRN	Monthly	Weekly	Several Times Weekly	Daily	Several Times Daily
(6)	**Vital Signs**	1	2	3	4	5	6	7
(7)	**Blood Pressure**	1	2	3	4	5	6	7
(8)	**Urinalysis**	1	2	3	4	5	6	7
(9)	**Weight**	1	2	3	4	5	6	7
(10)	**Enemas**	1	2	3	4	5	6	7
	Irrigations:							
(11)	**Bladder**	1	2	3	4	5	6	7
(12)	**Colostomy**	1	2	3	4	5	6	7
(13)	**ENT**	1	2	3	4	5	6	7
(14)	**Vaginal**	1	2	3	4	5	6	7
(15)	**Catheterization**	1	2	3	4	5	6	7
(16)	**Dressings**	1	2	3	4	5	6	7
	Exercises:							
(17)	**R.O.M.**	1	2	3	4	5	6	7
(18)	**Muscle Strengthening**	1	2	3	4	5	6	7
(19)	**Special Feeding Tube**	1	2	3	4	5	6	7
(20)	**Oxygen Therapy or Suctioning**	1	2	3	4	5	6	7
	Incontinence:							
(21)	**Bladder**	1	2	3	4	5	6	7
(22)	**Bowel**	1	2	3	4	5	6	7
(23)	**Decubiti Care**	1	2	3	4	5	6	7

TEACHING RESTORATIVE NURSING CARE:

		Not Req.	Needed But Not Given	Weekly	Several Times Weekly	Daily	Several Times Daily
(24)	**Gait training, transfer**	1	2	3	4	5	6
(25)	**Use of assistive appliances**	1	2	3	4	5	6
(26)	**Self-admin. of medications**	1	2	3	4	5	6
(27)	**Bowel or bladder training**	1	2	3	4	5	6
(28)	**Diet instructions**	1	2	3	4	5	6
(29)	**A.D.L.; bathing, feeding, etc.**	1	2	3	4	5	6

SERVICES UTILIZED:

The patient is receiving each of the following services:

		None	Annually	Every 3 to 6 Months	PRN	Monthly	Weekly	Twice a Week	Daily
(30)	**Radiology**	1	2	3	4	5	6	7	8
(31)	**Laboratory**	1	2	3	4	5	6	7	8
(32)	**Phys. Therapy**	1	2	3	4	5	6	7	8
(33)	**Occup. Therapy**	1	2	3	4	5	6	7	8
(34)	**Rec. Therapy**	1	2	3	4	5	6	7	8
(35)	**Social Service**	1	2	3	4	5	6	7	8
(36)	**Dental**	1	2	3	4	5	6	7	8
(37)	**Optical**	1	2	3	4	5	6	7	8
(38)	**Podiatry**	1	2	3	4	5	6	7	8
(39)	**Inhalation Therapy**	1	2	3	4	5	6	7	8
(40)	**Speech Therapy**	1	2	3	4	5	6	7	8

MEDICATIONS:

		Number Receiving									
	Type	None	One	Two	Three	Four	Five	Six	Seven	Eight	Nine+
(41)	**Oral**	0	1	2	3	4	5	6	7	8	9
(42)	**S.C., Rectal or Topical**	0	1	2	3	4	5	6	7	8	9
(43)	**IM**	0	1	2	3	4	5	6	7	8	9
(44)	**IV**	0	1	2	3	4	5	6	7	8	9

(45) Can patient or persons living with patient be taught to administer all of the medications? (except IV's)

1—Yes
2—No, due to the nature of the medication
3—No, due to physical incompetence of the patient or person(s) living with the patient
4—No, due to mental incompetence of the patient or person(s) living with patient
5—Don't know

(46) **DIET:**

Patient is on a prescribed special diet:

1—Which does not require professional supervision and control.
2—Which requires professional supervision and control.
3—Which cannot be provided in the patient's own home due to the nature of the diet.
4—Which cannot be provided in the patient's own home due to the physical incompetence of the patient or person(s) living with the patient.
5—Which cannot be provided in the patient's own home due to the mental incompetence of the patient or person(s) living with the patient.
6—But don't know whether it can be provided in the patient's own home.
7—Patient is **not** on a prescribed special diet.

(47) **LAST VISIT BY A PHYSICIAN:**

0—Unknown
1—Within the last 48 hours
2—Within the last 72 hours
3—Within the last week
4—Within the last 2 weeks
5—Within the last month
6—Within the last 2 months
7—Within the last 6 months
8—Within the last year
9—Within the last 2 years

(48) **REASON FOR M.D. VISIT:**

1—Diagnosis and/or treatment upon an admission and/or transfer
2—Routine supervision
3—Change in condition requiring additional diagnosis and/or treatment
4—Discharge or transfer visit
5—Not known

(49) **PLACE WHERE LAST SEEN BY M.D.:**

1—Hospital as inpatient
2—Emergency room
3—Hospital outpatient dept.
4—Extended care facility
5—Public health clinic
6—Nursing home
7—M.D.'s office or private clinic
8—Patient's home
9—Unknown

(50) **ROUTINE PATTERN OF PHYSICIAN VISITS TO PATIENT SINCE ~~HIS ADMISSION~~ TO THIS FACILITY:**

1—Unknown
2—No visits
3—Annually
4—Semi-annually
5—Quarterly
6—Monthly
7—Twice a month
8—Weekly
9—Twice a week or more

LIVING ARRANGEMENTS:

(51) **Prior to being an inpatient, the patient:**

1—Lived alone
2—Lived with household help
3—Lived with spouse
4—Lived with relatives
5—Lived with non-relative
6—Other (specify) _____
7—Unknown

(52) **Are the same living arrangements still available?**

1—Yes
2—No, the person checked in question 51 is no longer living at patient's home
3—No, family or non-relative refuses to permit patient to return home
4—No, patient's former residence no longer exists
5—Other (specify) _____
6—Don't know

(53) **HOME ENVIRONMENT:**

1—Unknown
2—Suitable
3—Unsuitable due to physical facility
4—Unsuitable due to lack of necessary equipment
5—Unsuitable because remotely located to needed health facilities

(54) **Considering the medical condition of the patient today, which of the following facilities or programs is appropriate for the care of the patient?**

0—Unknown
1—An acute general hospital
2—A long-term hospital (psy., chronic dis., TB)
3—An extended care facility
4—A skilled nursing home
5—A resident care institution
6—Patient's residence under a coordinated home care program
7—Patient's residence with limited home care services
8—Domiciliary institution (no care required)
9—Patient's residence (no care required)

TRANSFER BARRIERS:

(55-56) **If the patient is not in the type of facility circled above, indicate the primary reason.**

00—Unknown
01—Patient is in appropriate facility
02—Type of facility or program needed not available in the area
03—No bed available in the needed facility
04—Patient does not qualify for treatment or care under the policies of the facility or program
05—Physician advises against transfer because of quality of services in other facility or program
06—Uncertainty that patient will qualify for Medicare or Medicaid certification in another facility or program
07—Family refuses transfer
08—Patient refuses transfer
09—Economic reasons
10—Patient awaiting transfer to another facility
11—Patient awaiting transfer to his place of residence
12—Other (specify) _____

(57-79)—Blank

(80)—B (card sequence)

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14. Frequency of visits by attending physicians
15. Adequacy of patient's living arrangements
16. Level of care required and modality
17. Transfer barriers, if any

The instrument does not include certain socioeconomic data which may be of special interest to some investigators but were not considered essential in the study undertaken in North Carolina. Excluded were patients' religious preference, number of living children, educational level, usual occupation, employment status, family income, and source of payment for care.

It should also be pointed out that in the UNC study no effort was made to evaluate the actual medical or nursing needs of the patient through a medical audit or examination. The nature and extent of the care being provided was considered sufficient evidence of the level of care required by the patient. Accordingly the structured instrument makes no provision for such an assessment or medical audit.

Although it was recognized that nursing services and care constitute the principal type of care for patients in the study, no effort was made to record the number of hours of such care given each patient. Investigators concerned with the influence of such data in developing patient classification systems could easily add these or similiar items to the form.

Instrument Use

We found that the instrument effectively provided individual patient profiles as well as institutional profiles. The instrument also permits standardization of data acquired and emphasizes the collection of factual information rather than subjective judgments. It can be used by groups concerned with utilization review in the initial screening of patients to permit concentration of effort on those requiring detailed review. It is also an effective mechanism for recording changes in patients' physical, psychological, and medical conditions.

It should be recognized that the long-term care patient survey form is not a decision-making tool but provides a method for recording data which should be considered in reaching decisions regarding classification of patients and the appropriateness of their assignment. Such data must be weighed in relation to the sociological, physical, medical, and environmental factors which affect the patient's total welfare.

Data from the survey instrument can be easily transferred to punchcards and other data processing systems for appropriate analysis and detailed study.

Comment

There is a need for continued effort to extend and improve our knowledge in evaluation technology in all areas of health and medical services, particularly in direct patient care and in the delivery of health services. Perhaps no area has been in greater need of evaluation than patient classification and determination of the level of care required by the individual patient. The advent of Medicare has accentuated the need for an evaluative tool to assist in the classification of patients according to the level of care they require.

The investigators have designed an instrument which has been found to be effective in providing profiles of individual patients and in determining the appropriateness of their assignment. It can also assist in the identification of transfer barriers which tend to prevent the movement of patients to appropriate facilities and to services designed for meeting their special needs.

In our opinion a further refinement of this instrument, by reducing the number of variables without compromising the statistical reliability of the data, would be desirable. We are currently pursuing further studies in this direction.

REFERENCES

(1) Archer, H. E., and Van Horn, A. L.: Hospital-based long-term care units in North Carolina. Department of Hospital Administration, School of Medicine, University of North Carolina, Chapel Hill, March 1972.

(2) Rosenfeld, L. S., Goldman, F., and Kaprio, L.: Reasons for prolonged hospital stay. J Chronic Dis 6: 149–155 (1957).

(3) Katz, S., Ford, A. B., Moskowitz, R., and Jackson, B. A.: Studies of illness in the aged. The index of ADL: a standardized measure of biological and psychosocial function. JAMA 185: 914–919, Sept. 21, 1963.

(4) Mosher, J. E., and Conners, E. J.: Hospital-based long-term patient care units in Wisconsin. W. K. Kellogg Foundation, Battle Creek, Mich., 1968.

(5) Berg, R. L., Browning, F. E., Hill J. G., and Wenkert, W.: Assessing the health care needs of the aged. Health Serv Res 5: 36–59 (1970).

(6) Zimmer, J. G., and Groomes, E. W.: An observer reliability study of physicians' and nurses' decision in utilization review of chronic care facilities. Med Care 7: 14–20 (1969).