Home Health Services in New Hampshire

FRANK A. HALE, PhD, and ARTHUR R. JACOBS, MD, MPH

THE FUNCTIONS of home health agencies—home care, disease prevention, and health education—have long been widely acknowledged, but these agencies remain an underused component of the medical care system. Recently, a combination of factors has given new impetus to the integration and expansion of these community health services. These factors include:

- An increase in the number and proportion of elderly people who need the psychological, rehabilitative, and educational benefits of home care. (*1,2*).
- Recognition that long-term chronic illnesses—such as heart disease, cancer, and cerebrovascular disorders—prevailing among the aged require appropriate management in the patient's home.
- A growing concern, as expressed by utilization review of inpatient facilities, that patients have access to quality care at the level most appropriate to their illnesses. For example, home health services, through early discharge programs, can reduce the number of days a patient spends in a hospital bed or may even prevent institutionalization (*3–5*).
- Public response to health education efforts promoting the benefits of screening programs and early detection of disease.

Although demand for community health services is on the increase, the development of home health agencies has been hampered by a general lack of information among providers and consumers as to their actual and potential capabilities for service. Another impediment to their development is the organizational isolation of the home health agency from hospitals and physicians in the health care system. In addition, the financial base for these services is inadequate because most of the third-party financing available (both government and private sources) is for short-term intensive care after hospitalization of the beneficiary.

New Hampshire's population is feeling the impact of the trends just mentioned—trends that point to the desirability of expanding the quantity and scope of home health services. Furthermore, because of the State's rural nature, the outreach functions of the visiting nurses take on particular significance in increasing accessibility to health care. Among the questions that health care planners and providers will have to address are the following: Should home health agencies be regional or local? Should they be hospital based, clinic based, or free standing? How may optimum staffing patterns for home health agencies be determined? In this paper we report on the scope of services and activities among a group of home health agencies in New Hampshire in 1973 and relate the findings to issues that will arise as the home health movement gains momentum.

Methodology

New Hampshire has 41 certified home health agencies located in the areas where 89 percent of its population of 737,681 lived in 1970. In the summer of 1973 a sample of eight agencies was selected to participate in a study to document their activities. The sample was devised to include rural and urban, public and voluntary agencies.

Personnel from each participating agency completed a patient contact record (figs. 1 and 2) for all patients seen over 4 consecutive weeks. The development of the record and the demonstration of the utility and reliability of the patient contact record method of studying ambulatory services were achieved by the National Functional Task Analysis Cooperative Study (*6*); the authors were members of the study group. Instructions for completing the forms and explanations of all data items were given both verbally and in writing to each agency. The cooperation of the agencies' staffs was excellent, and an average of only 0.41 item per record was missing from all the agencies' forms. A total of 3,819 patient contacts were recorded. Each agency received a report and a brief analysis of the data gathered from that site.

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Figure 1. Patient contact record form

FTA PATIENT CONTACT RECORD

FORM 11 PROJ. OMB #68-S73033 APPROVAL EXP. 7-31-73

PATIENT IDENTIFICATION

ZIP CODE

SITE

BIRTH DATE — MONTH DAY YEAR

TODAY'S DATE — MONTH DAY YEAR

TREATMENT & SERVICES

INSTRUCTIONS FOR TREATMENT AND SERVICES SECTION:

1. Enter your skill code and provider number.
2. Carefully ✓ appropriate treatment and service you performed.
3. Enter total time you spent with patient;

	Skill Code	Provider Number	Skill Code	Provider Number	Skill Code	Provider Number	Skill Code	Provider Number
	TIME (MIN)		TIME (MIN)		TIME (MIN)		TIME (MIN)	
HISTORICAL DATA								
11—Registration/record prep.		11		11		11		11
12—Administrative procedure (appts., forms, etc.)		12		12		12		12
EXAMINATION								
20—Partial history		20		20		20		20
22—Complete history		22		22		22		22
26—Measurements - Ht., Wt., BP, Temp., etc.		26		26		26		26
21—Partial physical exam		21		21		21		21
23—Complete physical exam		23		23		23		23
24—Pelvic exam		24		24		24		24
25—PAP		25		25		25		25
29—Other examination		29		29		29		29
DIAGNOSTIC PROCEDURES								
30—Bacteriology		30		30		30		30
31—Blood chemistry		31		31		31		31
32—EKG		32		32		32		32
33—Hematology		33		33		33		33
34—Hearing test		34		34		34		34
35—Immunology studies/skin test		35		35		35		35
36—Psch. test/develop screening		36		36		36		36
37—Pulmonary function		37		37		37		37
38—Urinalysis		38		38		38		38
40—Vision test/tonometry		40		40		40		40
41—X-ray		41		41		41		41
49—Other diagnostic procedures		49		49		49		49
TREATMENT								
51—Cast/fracture		51		51		51		51
52—Cardiopulmonary resuscitation		52		52		52		52
53—Catheterization		53		53		53		53
55—Dressing/change		55		55		55		55
56—Perscribe medication		56		56		56		56
57—Discuss/instruct medication		57		57		57		57
58—Admin. med.-(not injections)		58		58		58		58
59—Inject medication - IV		59		59		59		59
60—Inject med.-IM, SQ, etc.		60		60		60		60
61—Ear irrigation		61		61		61		61
62—Immunization		62		62		62		62
66—I.U.D.		66		66		66		66
67—I.V. fluid		67		67		67		67
68—Minor surgery		68		68		68		68
70—Oxygen		70		70		70		70
71—Physical therapy		71		71		71		71
72—Place/remove sutures		72		72		72		72
79—Other treatment		79		79		79		79
COUNSELING/EDUCATION								
80—Birth control		80		80		80		80
81—Diet		81		81		81		81
82—Health education		82		82		82		82
83—Patient education		83		83		83		83
84—Psychological/behavioral		84		84		84		84
89—Other counseling		89		89		89		89

SKILL CODES

02—MD
03—Physician assistant
05—Nurse practitioner
07—Registered nurse
11—LPN/LVN
13—X-Ray tech.
17—Lab. Tech.
19—Nurses aide/ Med. asst.
23—Recept./Sec.
29—Pharmacist
97—Other

WHO COMPLETED THIS FORM?

1—Site personnel-clinic only
2—Site personnel-mix of clinical & clerical
3—FTA project personnel
4—Combination of site and project personnel

Functional Task Analysis Study Group
1225 Observatory Dr., Madison, Wi., 53706

RACE
1—American Indian
2—Black/Negro
3—Oriental
4—Spanish surname
5—White
9—Other/Unknown

SEX
1—Male
2—Female

LOCATION OF VISIT
1—Office/OPD
2—Emergency Dept.
3—Hospital
4—Patient's home
5—Nursing home
9—Other

TYPE OF VISIT
1—Walk-in routine
2—Walk-in urgent
3—Appointment
4—Appointment urgent
5—Emergency
9—Other

PATIENT'S REASON FOR THIS VISIT

10—Acute problem (1-14 days)
11—Acute problem follow-up
12—Chronic problem, routine
13—Chronic problem, flare-up
14—Treatment or lab. only
15—Checkup or physical (adult)
16—Well child visit
17—Prenatal/Postnatal checkup
18—Health education
20—Family plan or counsel
21—Post operative follow-up
99—Other

PROBLEM OR DIAGNOSIS
(For which services were provided)
Enter up to 3 codes from opposite side of this sheet in order of importance

1 _____ 1 — — —
DIAGNOSIS WRITE-IN
2 _____ 2 — — —
3 _____ 3 — — —

DISPOSITION
Enter 1 code for each section

PATIENT DISPOSITION
1—Home
2—Admit
3—Transfer to institution/facility
4—DOA
5—Died on site
9—Other

FOLLOW-UP
1—No planned follow-up
2—Return if necessary
3—Return at specific time
4—Patient to phone
5—Physician to phone
6—Physician to see on rounds
9—Other

REFERRAL
1—None
2—Own physician
3—Other physician-(within site)
4—Other physician-(outside site)
5—Other non-physician provider-(within site)
6—Other non-physician provider-(outside site)
7—Other agency

EXPECTED PAYMENT SOURCE

10—Medicaid Title XIX
11—Medicare — PRIMARY
13—Welfare/Public Assistance
14—Workman's Compensation
15—Blue Cross/Blue Shield
16—Other Private Insurance
17—Capitation — SECONDARY
18—Patient Self Payment
20—No Charge
21—None
99—Other

TOTAL CHARGES THIS VISIT

$ — — — — —

Figure 2. Problems or diagnosis. Reverse side of patient contact record form

GENERAL
- No abnormality 101
- Abnormal X-Ray 102
- Abnormal Lab 103
- Congenital abnormality 104
- Cancer, primary unknown 105
- Drug reaction/toxicity 106
- Exogenous obesity 107
- Fatigue or weakness, etiology unknown 108
- Fever of unknown origin 109
- Internal injury—chest, abdomen, pelvis 110
- Malnutrition, failure to thrive 111
- Poisoning, accidental 112
- Senility 113
- Weight loss, etiology unknown 119

PSYCHOLOGICAL PROBLEMS
- Economic 620
- Housing 621
- Health and medical 622
- Education 623
- Family 624
- Personal 625
- Employment 626
- Legal 627
- Other psychological problems ..629

ENDOCRINE AND METABOLIC
- Adrenal abnormality 120
- Diabetes mellitus
  - Adult onset 121
  - Juvenile 122
- Electrolyte/hydration abnormality 123
- Glycosuria 124
- Thyroid abnormality
  - Hypothyroidism 125
  - Hyperthyroidism 126
- Other endocrine/metabolic problems, signs and symptoms 139

SKIN
- Acne 140
- Corns and Callosities 141
- Dermatitis
  - Atopic 142
  - Contact 143
  - Neuro- 144
  - Seborrheic 145
  - Stasis 146
- Growths
  - Cancer 147
  - Lipoma/fibroma 148
  - Nevus 149
  - Sebaceous cyst (wen) 150
  - Warts (verrucae vulgaris) 151
- Infections
  - Abscess 152
  - Carbuncle/furnucle 153
  - Cellulitis 154
  - Felon 155
  - Fungal 156
  - Herpes simplex 157
  - Herpes zoster 158
  - Impetigo 159
  - Paronychia 160
- Keratosis
  - Seborrheic 161
  - Senile 162
- Psoriasis 163
- Pityriasis Rosea 164
- Pruritis 165
- Rash, nonspecific 166
- Rash, diaper 167
- Trauma
  - Abrasion/contusion 168
  - Burn 169
  - Foreign body 170
  - Frostbite 171
  - Hematoma 172
  - Insect/animal bite 173
  - Laceration 174
- Urticaria and allergic dermatoses 175
- Other skin problems, signs and symptoms 179

EYE
- Blepharitis 180
- Cataract 181
- Conjunctivitis 182
- Contusion (eye/orbit) 183
- Corneal abrasion 184
- Exophthalmos 185
- Foreign body 186
- Glaucoma 187
- Hordeolum (sty) 188
- Iritis 189
- Lacrimal apparatus (including tear duct) problem 190
- Refractive error 191
- Retinopathy 192
- Strabismus (squint) 193
- Other eye problems, signs and symptoms 199

EAR, NOSE, THROAT, NECK
- Ear
  - Ceruminosis (earwax) 200
  - Labyrinthitis 201
  - Otitis
    - Externa 202
    - Media 203
- Otosclerosis 204
- Sensorineural hearing loss 205
- Nose
  - Epistaxis 206
  - Polyp 207
  - Rhinitis, allergic 208
  - Sinusitis 209
- Throat
  - Epiglottitis 210
  - Hypertrophic T&A 211
  - Hoarseness 212
  - Laryngitis 213
  - Pharyngitis
    - streptococcal 214
    - viral 215
  - Stomatitis
    - fungal 216
    - herpetic 217
  - Tonsillitis
    - acute 218
    - peritonsillar infection 219
- Neck
  - Mass 220
  - Torticollis 221
- URI (upper respiratory infection—Coryza) 222
- Cancer (ENT and neck) 223
- Other ENT and neck problems 229

DENTAL
- Abscess 230
- Caries 231
- Cellulitis, oral 232
- Fractured tooth 233
- Gingivitis 234
- Malocclusion 235
- Poor oral hygiene 236
- Other dental problems 239

RESPIRATORY
- Asthma 240
- Bronchiectasis 241
- Bronchitis
  - Acute 242
  - Chronic 243
- Bronchiolitis 244
- Cancer, lung 245
- Croup 246
- Emphysema and chronic obstructive lung disease 247
- Funnel chest 248
- Hay fever and other respiratory allergies 249
- Influenza syndrome 250
- Pleural effusion 251
- Pleurisy
  - Acute 252
  - Residual 253
- Pneumoconiosis 254
- Pneumonia
  - Bacterial 255
  - Viral 256
- Pneumothorax 257
- Pulmonary embolism 258
- Pulmonary fibrosis, nonspecific 259
- Pulmonary TBC
  - Active 260
  - Inactive 261
- Sarcoidosis 262
- URI (upper respiratory infection—Coryza) 222
- Etiology unknown
  - Chest pain 263
  - Cough 264
  - Dyspnea 265
  - Hemoptysis 266
  - Stridor 267
- Other respiratory problems 269

CARDIAC
- Angina pectoris 275
- Arrhythmias
  - Atrial fibrillation 276
  - Premature ventricular contractions 277
  - Other arrhythmias 278
- Arteriosclerotic heart disease (ASHD) 279
- Congestive heart failure
  - Compensated 280
  - Uncompensated 281
- Cor pulmonale 282
- Cyanosis 283
- Dyspnea 265
- Edema 284
- Endocarditis 285
- Hypertension
  - Essential 286
  - Malignant 287
  - Renovascular 288
- Hypertensive heart disease 289
- Hypotension, postural 290
- Murmur
  - Functional 291
  - Undiagnosed 292
- Myocardial infarction 293
- Myocardiopathy/itis 294
- Pericarditis 295
- Pulmonary edema, acute 296
- Rheumatic fever, acute 297
- Septal defect 298
- Valvular disease 299
- Other cardiac problems 309

PERIPHERAL VASCULAR
- Arteriosclerotic peripheral vascular disease 310
- Edema, peripheral 284
- Peripheral arterial occlusion, acute 311
- Raynaud's disease 312
- Stasis dermatitis 146
- Stasis ulcer 313
- Thrombophlebitis 314
- Varicose veins 315
- Other peripheral vascular problems 319

ABDOMEN—G.I.
- Appendicitis 320
- Bleeding
  - Upper GI 321
  - Lower GI 322
  - Unknown source 323
- Cancer
  - Esophagus/stomach 324
  - Colon/small bowel 325
- Colitis
  - Spastic (functional) 326
  - Ulcerative 327
- Constipation 328
- Diverticulosis/itis 329
- Esophagitis 330
- Fissure, rectal 331
- Gastritis 332
- Gastroenteritis
  - Bacterial 333
  - Viral 334
  - Toxic or nonspecific 335
- Heartburn (pyrosis) 336
- Hemorrhoids 337
- Hernia Inguinal/femoral 338
- Hernia other abdominal 339
- Malabsorption 340
- Peptic ulcer disease 341
- Polyp 342
- Pruritis ani 343
- Regional enteritis 344
- Etiology unknown
  - Abdominal pain/cramps 345
  - Anorexia 346
  - Ascites 347
  - Colic 348
  - Diarrhea 349
  - Dysphagia 350
  - Excessive gas 351
  - Hiccough 352
  - Indigestion 353
  - Nausea 354
  - Splenomegaly 355
  - Vomiting 356
- Other GI disorders 359

LIVER AND BILIARY TREE
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- Gall bladder disease
  - Cholecystitis 361
  - Stones 362
- Hepatitis 363
- Hepatomegaly, etiology unknown 364
- Jaundice, etiology unknown 365
- Liver failure 366
- Pancreatitis 367
- Cancer 368
- Other problems of the liver and biliary tree 379

GENITOURINARY TRACT
- Cancer (except prostate) 380
- Diabetic nephropathy 381
- Enuresis (bed wetting) 382
- Glomerulonephritis 383
- Impotence 384
- Incontinence 385
- Kidney stones and/or renal colic 386
- Nephrotic syndrome 387
- Prostate
  - BPH or prostatism 388
  - Cancer 389
  - Prostatitis 390
  - Retention of urine 391
- Structural
  - Hydro/Spermatocele 392
  - Phimosis 393
  - Undescended testicles 394
  - Urethral stricture 395
- Uremia (azotemia) 396
- Urinary tract infection 397
  - Asymptomatic bacteriuria 398
  - Cystitis 399
  - Epidydimitis and Orchitis 400
  - Pyelonephritis
    - acute 401
    - chronic 402
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- Vasectomy 404
- Venereal disease
  - Gonorrhea 405
  - Syphilis 406
- Etiology unknown
  - Dysuria 407
  - Frequency 408
  - Glycosuria 124
  - Hematuria 409
  - Polyuria 410
  - Proteinuria 411
  - Pyuria 412
- Other GU problems 419

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- Cancer
  - Cervix 420
  - Ovary 421
  - Other 422
- Infections
  - Bartholin's cyst 423
  - Cervicitis 424
  - Pelvic inflammatory disease 425
  - Gonorrhea 405
  - Pruritis vulvae 426
  - Syphilis 406
  - Vaginitis
    - Monilial 427
    - Trichomonal 428
    - Nonspecific 429
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  - Amenorrhea 430
  - Dysmenorrhea 431
  - Problems of menarche 432
  - Menorrhagia 433
  - Menopausal syndrome 434
  - Ovulation pain 435
  - Premenstrual tension 436
  - Sterility 437
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  - Normal 438
  - Complicated 439
  - Abortion spontaneous 440
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  - Frigidity 442
- Uterine fibroids 443
- Other problems of female genital tract 449

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- Cancer 450
- Fibrocystic disease 451
- Gyneconmastia 452
- Mass, etiology unknown 453
- Mastitis, acute 454
- Nodules, nonspecific 455
- Other breast problems 459

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- Arthritis
  - Gouty 460
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  - Osteoarthritis 462
  - Rheumatoid 463
  - Traumatic 464
- Bursitis
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  - Hip 466
  - Knee 467
  - Shoulder 468
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- Contusion 168
- Dislocation
  - Shoulder 470
  - Finger 471
  - Other 472
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  - Cervical 473
  - Lumbar
    - with sciatica 474
    - without sciatica 475
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- Flat feet 477
- Fracture
  - Neck or skull 478
  - Upper extremity 479
  - Lower extremity 480
  - Other 481
- Knee, internal derangement 482
- Low back syndrome 483
- Myopathy, nonspecific 484
- Osteoporosis 485
- Sprain/strain
  - Ankle 486
  - Finger 487
  - Low back 488
  - Neck 489
  - Wrist 490
  - Other 491
- Scoliosis, Kyphoscoliosis 492
- Synovitis 493
- Tenosynovitis 494
- Toe in, Toe out 495
- Torticollis 221
- Tumor, benign or malignant 496
- Whiplash injury (no fracture or disc) 497
- Etiology unknown
  - Arthralgia (pain in join) 498
  - Low back pain
    - with sciatica 499
    - without sciatica 500
  - Muscle cramps 501
  - Muscle pain 502
  - Swollen joint 503
- Other musculoskeletal problems 509

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- Cerebrovascular insufficiency 510
- CVA (stroke) 511
- Transient ischeme attack (TIA) 512
- Concussion 513
- Demyelinating disease 514
- Developmental defect/retardation 515
- Drug abuse 516
- Headache
  - Migraine 517
  - Tension 518
- Labyrinthitis 519
- Mass lesion or tumor 520
- Meniere's disease 521
- Meningitis/encephalitis 522
- Neuralgia/neuritis 523
- Neuropathy 524
- Parkinson's disease 525
- Seizure disorder (epilepsy)
  - Primary 526
  - Secondary 527
- Senile and presenile dementia 528
- Etiology unknown
  - Ataxia 529
  - Coma and stupor 530
  - Convulsions 531
  - Delerium 532
  - Diplopia 533
  - Headache 534
  - Insomnia 535
  - Intra-cranial injury (excluding fracture of skull) 536
  - Paraesthesiae 537
  - Syncope 538
  - Sciatica 539
  - Tinnitus 540
  - Tremor 541
  - Vertigo/dizziness 542
- Other signs, symptoms and problems of the nervous system 549

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- Neurotic reactions
  - Anxiety 550
  - Conversion 551
  - Depression
    - reactive 552
    - involutional 553
  - Personality disorder including sociopathic 554
  - Phobia 555
  - Psychosomatic 556
- Psychotic reactions
  - Depression 557
  - Paranoid state 558
  - Schizophrenia 559
- Suicide attempt/gesture 560
- Other conditions
  - Alcoholic problem 561
  - Behavior problem 562
  - Delusions and hallucinations 563
  - Developmental defect/retardation 515
  - Drug abuse 516
  - Drug addiction 564
  - Enuresis (bed wetting) 382
  - Hyperkinesis 565
  - Hyperventilation syndrome ..566
  - Learning problem 567
  - Sexual problem/deviation 568
  - Smoking problem 569
  - Speech problem 570
- Other psychiatric problems 579

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- Anemia
  - Aplastic 580
  - Hemolytic 581
  - Iron deficiency 582
  - Nutritional (B-12, folate) 583
  - Sickle cell 584
  - Other/unknown cause 585
- Bleeding/coagulation defect 586
- Leukopenia/thrombocytopenia 587
- Leukemia/lymphoma 588
- Lymphadenopathy/itis 589
- Polycythemia 590
- Other problems of the blood and lymph 599

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- Chicken pox (varicella) 600
- Infectious mononucleosis 601
- Measles 602
- Mumps 603
- Parasites
  - Pinworms 604
  - Other 605
- Roseola 606
- Rubella 607
- Wound infection 608
- Other infectious disease 619

Table 1. Site characteristics of eight New Hampshire home health agencies

Characteristic	Home health agency 1	2	3	4 [1]	5	6	7	8 [1]
Population served	40,321	34,618	24,000	15,256	20,850	7,692	5,035	1,112
Median annual family income (dollars)	10,092	8,075	9,461	8,180	9,824	9,276	9,200	9,800
Percent of families below poverty level	5.2	9.2	6.8	8.0	6.1	7.9	6.1	5.9
Percent of population over age 65	7.5	5.5	12.4	8.1	10.3	12.5	11.8	10.6
Miles to nearest hospital	1	0	0	1	0	0	9	10
Number of full-time staff equivalents	12	14	6	3.5	3.5	2	1	1
Number of home visits per 1,000 population	21	20	21	18	8	25	18	49
Number of visits to patients over age 65 per 1,000 population over age 65	156	261	131	203	33	122	69	483
Number of full-time staff equivalents per 1,000 population	0.30	0.35	0.25	0.23	0.19	0.26	0.19	0.90

[1] Public agency. All others are voluntary agencies.

Results

Specific characteristics of the selected agencies are shown in table 1. They varied greatly in size. Agencies 1 and 2 are among the largest in the State both in numbers of full-time equivalent staff and population served; agencies 7 and 8 serve the smallest populations with only one full-time equivalent staff person. Six were incorporated as voluntary agencies, and two were municipal entities. For the eight populations served, variations were great in median family income (range of $8,075–$10,092), in families below the poverty level (range of 5.2–9.2 percent), and in the proportion of elderly treated by the staff (range of 33–483 per 1,000 population over 65).

Certain characteristics of patients' visits are illustrated in table 2. Most patients were cared for in the home. The remaining patient encounters occurred in hospitals, at well-baby, family planning, or similar clinics, or at the agency's site. The range of sites where treatment was given attests to (*a*) the different physical bases from which these agencies operate (that is, whether there are onsite facilities for seeing patients) and (*b*) their degree of involvement in screening and outreach programs. These fundamental differences indicate the lack of com-

Table 2. Characteristics of patients' visits for eight New Hampshire home health agencies

Characteristic	Home health agency 1	2	3	4	5	6	7	8
Number of visits during sample period	1,048	1,039	715	401	236	202	100	78
Length of visit (minutes)	45	42	40	20	33	37	26	38
Average charge (dollars)	7.80	4.80	7.60	1.80	11.10	5.90	5.00	1.40
Location of visit (percentages):								
Agency's office	0	14	0	33	26	4	1	0
Hospital	0	9	20	0	6	0	0	1
Patient's home	82	67	71	67	67	95	94	71
Clinic or other location	18	10	7	0	1	0	4	27

monality with which the respective communities finance and direct these agencies and are reflected in much of the variation in age, source of payment, diagnosis, and treatment which emerge upon closer inspection of the data in tables 3–6.

The majority of patients served by each agency during the study period were elderly, female, and had chronic illnesses (tables 3 and 4). The source and amount of expected payments for all patient visits were obtained, and averages were computed for the eight

Table 3. Sex and age of patients served by eight New Hampshire home health agencies, in percentages

Characteristic	Home health agency								
	1	2	3	4	5	6	7	8	Average
Age (years):									
0–14	32	12	15	8	21	6	16	38	19
15–44	14	25	10	6	26	12	26	4	15
45–64	8	14	20	22	21	18	14	3	15
65 and over	46	49	55	63	34	64	45	56	52
Sex:									
Male	35	29	31	20	30	27	29	33	29
Female	65	71	69	80	70	73	71	67	71

Table 4. Reason for visits of patients served by eight New Hampshire home health agencies, in percentages

Reason	Home health agencies								
	1	2	3	4	5	6	7	8	Average
Disease control	63	62	82	93	64	94	65	54	72.2
Acute condition	17	6	28	5	7	13	7	33	14.5
Chronic condition	40	55	30	86	56	72	57	21	52.2
Treatment or laboratory test	5	0	20	0	0	2	1	0	3.5
Postoperative care	1	1	4	2	1	7	0	0	2.0
Disease prevention	28	26	17	5	36	6	30	45	24.1
Adult checkup	3	2	0	0	5	0	6	0	2.0
Well-child visit	13	10	13	5	18	3	13	36	13.9
Prenatal or postnatal care	5	1	4	0	4	2	8	1	3.1
Health education	5	3	0	0	8	0	1	8	3.1
Family counseling	2	10	0	0	1	1	2	0	2.0
Other	9	12	1	1	0	0	5	0	3.7

Table 5. Expected source of payment for patients' visits to eight New Hampshire home health agencies, in percentages

Source	Home health agencies								
	1	2	3	4	5	6	7	8	Average
Medicaid and welfare	10	12	11	19	19	17	17	4	14
Medicare	33	15	37	33	7	42	24	12	25
Blue Cross and Blue Shield	1	2	5	1	2	5	2	0	2
Other private insurance	0	0	2	0	1	0	0	0	<1
No charge	44	35	30	9	43	9	39	67	35
Self-payment	8	25	11	37	15	22	8	18	18
None or other [1]	5	11	2	0	13	4	9	0	6

[1] Although a charge was customary, no payment was expected or the payment was expected to be from a source not listed.

agencies (table 5). Payments from Medicaid, welfare, and Medicare sources reimbursed the agencies for services, but more than half of the expected payments were from other sources: the patient (self-payment 18 percent) and community subsidies (no charge, 35 percent and none or other, 6 percent). Private insurance companies contributed little to the support of these agencies (Blue Cross and Blue Shield, 2 percent and other private insurance, less than 1 percent). Substantial community subsidy is necessary for a high percentage of visits, with the patients paying for a little more than 20 percent through self payment and private insurance programs, including Blue Cross and Blue Shield. Table 2 shows that the agencies' average charge (range of $1.40–$11.10) is low in comparison to the average length of visit (range of 20–45 minutes).

Communities appear to have established different priorities for disease control and disease prevention, as evidenced by the range of reasons for visits displayed in table 4. Grouped as disease control visits were visits for acute conditions, chronic conditions, treatment, or laboratory tests and postoperative care; grouped as disease prevention visits were visits for an adult checkup, well-child visit, prenatal and postnatal care, health education, and family counseling. The averages for the eight agencies showed that 72.2 percent of all visits were for disease control (range of 54–94 percent), 24.1 percent for disease prevention (range of 5–45 percent), and for other reasons 3.7 percent (range of 0–12 percent).

The diagnoses of patients receiving services (table 6) also indicate a pattern of variation across the agencies studied. Visits of patients with endocrine disorders were a sizable proportion of the workload of two agencies. Among the eight agencies, patients' diagnoses of musculoskeletal problems (primarily provision of physical therapy) ranged from 1 to 25 percent; problems of the nervous system from 2 to 37 percent; and psychiatric or psychosocial problems from 0 for three agencies to 21 percent for one. Since the prevalence of illness would not be expected to differ substantially across New Hampshire, factors other than prevalence of disease account for the variation in services provided by the home health agencies. These eight agencies obviously varied in their approach to the health problems of people in their service areas.

Discussion

The data gathered from these eight home health agencies in New Hampshire reveal a variety of patients served and of reasons for the care provided. These differences cannot be grouped according to any of the site characteristics listed in table 1, but are seemingly manifestations of a more fundamental discrepancy in financing and priorities.

These discrepancies may partly result from the extent to which community physicians refer their patients to these agencies. For example, agency 8, with the highest number of home visits (49 per 1,000 population) is the closest of the eight agencies to a referral and teaching hospital with a discharge planner on its staff. Physicians in such a hospital may be more inclined than those in other hospitals to refer patients to local home health

Table 6. Diagnoses of patients of eight New Hampshire home health agencies, in percentages

Diagnostic group	Home health agencies								Average
	1	2	3	4	5	6	7	8	
General	27	14	15	8	25	6	3	44	18
Endocrine, metabolic	3	6	18	25	1	6	5	1	9
Skin	5	2	0	0	1	0	5	13	2
Eye, ear, nose, throat, neck	2	2	2	0	1	5	2	1	2
Respiratory	4	10	5	9	8	1	2	3	6
Cardiac, peripheral vascular	13	13	10	24	14	21	20	16	15
Abdomen, gastrointestinal, liver	6	5	5	9	5	4	4	12	6
Genitourinary tract; genital tract, female, breast	5	7	8	2	5	2	18	2	7
Musculoskeletal system	12	8	25	8	9	1	22	1	12
Nervous system	10	7	7	5	17	37	2	5	10
Psychiatric problem, psychosocial problem	7	21	5	0	3	0	8	0	9
Blood and lymph disorders	5	3	1	7	8	16	3	0	5
5 most common individual problems or diagnoses:									
Arteriosclerotic heart disease	3	3	5	1	11	4	5	1	4
Diabetes, adult onset	3	6	18	25	1	6	5	1	9
Cerebrovascular accident	8	3	4	4	4	15	1	0	5
Congestive heart failure	1	3	1	1	0	0	1	4	2
No abnormality	26	13	13	7	25	5	0	40	17

agencies and to use the discharge planner. Agency 5, with the fewest home visits (8 per 1,000 population) may be underserving its population since agency 4, with the same number of staff, is making more than double the number of home visits (18 per 1,000 population, table 1). In such a situation, policies can be developed to increase the use of home health agency services through more efficient use of manpower and the education of consumers and health care providers to stimulate referrals.

There is no apparent correlation between the percentage of patients over age 65 seen by the agencies and the percentage of the population over 65 in the agencies' service areas noted in table 1. The two public agencies (4 and 8) appear to be putting more effort into treating the elderly. They averaged 343 visits to patients over 65 per 1,000 population 65 and and older, compared to an average of 129 visits to such patients per 1,000 population 65 and older for the six voluntary agencies. The activities of all agencies appear to mirror local realities rather than reflect a comprehensive service program based upon community and patients' needs.

If the needs of the public are to be more appropriately served, providers and planners should examine the current activities of each agency to promote optimal use of this vital source of community health care. The patient contact record is useful in describing activities of home health agencies as well as the activities of other ambulatory care providers. Data on population characteristics and disease patterns of each community should be reviewed when the agencies' priorities for manpower and services are budgeted. Such analyses may be further stimulated by the development of health systems agencies in conformity with Public Law 93–641, the National Health Planning and Resources Development Act of 1974.

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SYNOPSIS

HALE, FRANK A. (Dartmouth Medical School), and JACOBS, ARTHUR R.: *Home health services in New Hampshire. Public Health Reports, Vol. 91, November–December, 1976, pp. 545–551.*

While home health services have traditionally been an underused component of the health care system, current trends suggest the desirability of expanding these services. These trends include an increase in the number of elderly who need the benefits of home care, the recognition that long-term chronic illnesses require appropriate management at home, and concern that patients have access to care at the level most appropriate to their illnesses.

In New Hampshire, 41 certified home health agencies offer services. Little systematic research has been conducted on the kinds of services they provide and the patients seen by their staffs. Patient encounter data were collected from a sample of eight agencies for a 4-week period. Staff of the agencies used the patient contact record developed by the National Functional Task Analysis Cooperative Study to collect data. The data reflected differences among the agencies in the size of the populations they serve, organizational characteristics, reasons for patients' visits, expected sources of the revenue that supported them, and the diagnoses of the patients they cared for.

The agencies served areas with populations ranging from 1,000 to 40,000. The staffs ranged from 1 to 14 full-time persons. Two were public agencies; the others had voluntary sponsorship. When data on reasons for visits were averaged for the eight agencies, it was shown that 72 percent of the visits were made for disease control activities such as care for a chronic or acute condition or for treatment or a laboratory test. Disease prevention activities such as a checkup for adults, children, prenatal or postnatal care, or health education accounted for only 24 percent of the visits. This result may indicate that, in areas short of physician manpower, the community health nurse is taking on increasing responsibility for medical care as well as health education.

Reimbursement for the visits came from Medicare, 25 percent; Medicaid-welfare, 14 percent; the patients, 18 percent; and health insurance, 3 percent. For 35 percent of the visits there was no charge; they were underwritten by community resources.