THE PHYSICIANS ASSOCIATE:

A TASK ANALYSIS

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ABSTRACT

It is reasonable to assume that a highly trained paramedic such as the Physician's Associate trained at Duke University will save the physician time in doing routine tasks normally done by the M.D. However, the question of exactly how much time, and in what activities the P.A. aids the doctor is non-trivial, and deserves further consideration.

A task analysis was done as a supplement to time/motion studies. Eleven graduates of the Duke University Physician's Associate Program and their physician supervisors were asked to complete questionnaires concerning the frequency and independence of tasks performed by the P.A.'s. There were three-hundred-sixty-eight tasks in the questionnaire and these were divided into six major task categories.

The analytical methods employed were designed to explore the level of independence exercised by the P.A.'s and the extent to which their skills were being utilized. The results of the analyses implied that P.A.'s working in private practice settings were performing more tasks than those working in institutions but that the levels of independence were not notably different between the two groups. However, the main purpose of the study was to test the methods of analysis, which proved to be workable.

CONTENTS

INTRODUCTION

There has been much discussion about the innovative use of allied health personnel during the past decade. The concept of the physician extendor has received a great deal of publicity and interest. Many funding agencies, both public and private, are continually pondering the possibilities of investing in the development of such personnel.

In 1965, under the direction of Dr. Eugene A. Stead, Jr., Duke University initiated the first formal physician's assistant program, now called the Physician's Associate Program, and to date sixty-eight P.A.'s have been graduated. The graduates of the first few classes have been studied, but these studies have been primarily oriented toward the social and psychological aspects of the P.A. role.[1, 2]

One of the most common questions asked about the P.A.'s is "what do they do?" While there is always an answer, it is usually generalized and seldom supported by factual data concerning their functional roles and task performances. In addition to a task analysis, it seemed desirable to consider the relationship of the training to the tasks performed as graduates. A study designed to gather this type of data would provide essential feedback to the program administration based on actual utilization. It would also provide an examination of patterns of delegation for efficiency operation, and delineation of the capacities and limitations of the P.A.'s.

BACKGROUND

In order to fully understand the multiple ramifications of the study it is first necessary to have an understanding of the curriculum and the graduates. The training of the P.A. begins long before he enters the P.A. program. Each student is required to have at least 2,000 hours of patient care experience before matriculation. Many of the students have acquired their experience in the military setting, but others come from a variety of civilian occupations including laboratory technology, nursing, psychology, biology, etc.

The educational curriculum is 24 months in duration. The first nine months are devoted primarily to didactic work and the last 15 months are devoted to practical study in clinical settings. Figures 1, 2, and 3 list the courses taken by this study group.

Figure 1. Didactic courses taken by all P.A. students in first nine months.

Basic Clinical Laboratory	Patient Evaluation
Inorganic Chemistry	Diagnostic Procedures
Anatomy & Physiology	Introduction to Radiology
Essentials of Chemical Biology	Basic Principles of Data Processing
Clinical Medicine	Medical Instrumentation
Pharmacology	Medical Terminology
Animal Surgery	History, Philosophy & Ethics of Medicine
Electrocardiography	Clinical Chemistry
Community Health	
Psychosomatic Medicine	

Figure 2. Required clinical courses.

Medical Inpatient Service	Faculty Health Clinic
or	Emergency Room
Surgical Inpatient Service	Outside Physician
Medical Outpatient Service	Pulmonary Function/ Inhalation Therapy
or	
Surgical Outpatient Service	Research Project

Figure 3. Elective clinical courses.

Gastroenterology	Rheumatology
Psychosomatic Medicine	Orthopedic Surgery
Urology	General Pediatrics
Cardiology	Ophthalmology
Neurology	

While the backgrounds of the students and graduates vary extensively, the backgrounds of the P.A.'s involved in this study were quite similar. All had been in the military medical service: eight in the Navy, two in the Air Force, and one in the Army. Figure 4 briefly describes the settings in which the P.A.'s were working at the time of the study. Eleven M.D.'s and eleven P.A.'s participated in the study, but since one of the physicians never returned his questionnaire, the total sample includes only ten physicians. The sites studied included four private general practices in rural areas and five urban institutional settings. One of the private practices employs two P.A.'s and one of the institutions employs two P.A.'s. The P.A.'s in private practices function both in outpatient and inpatient settings; however (with one exception), those in institutional settings function exclusively in either an outpatient or an inpatient setting. The institutions studied included one pre-paid group practice in Washington State, one V.A. hospital in Oklahoma, one private hospital in New York State, and one state prison hospital in North Carolina. Two of the private practices studied were in North Carolina and the other two were in Vermont.

METHODOLOGY

The detailed questionnaire used for the task analysis is a modification of the protocol of questionnaires designed by the Manpower Branch of the National Center for Health Services Research and Development.[3] There are 368 questions which were divided into six major task categories; History Taking, Physical Examination, Laboratory Procedures, Medical Tasks, Surgical Tasks, and Other Medical Care Tasks (including administrative tasks). (See Appendix B)

The task analysis was done as a supplement to time/motion studies which were initiated in the Spring of 1970. At that time the sample sites were chosen by contacting prospective employers of the class that was to graduate in the Fall of 1970. All those who actually hired P.A.'s and agreed to cooperate in the study were included in the sample. Because this number was very small, employers of previously graduated P.A.'s were invited to participate in the study, and again, those who agreed were included. Since the available study sites were limited and it was deemed necessary to have the full cooperation of the subjects, selectivity proved unavoidable. Therefore, it should be noted that the bias of selectivity has very possibly affected the data. It should also be emphasized that major policy decisions should not be based on these data since the primary purpose of this study was to test the methodology of the analysis.

Figure 4. Brief descriptions of the practices in which the P.A.'s are employed.

P.A.'s A and B work in the same practice with physician's A and B. It is a private, general practice in a rural setting in Vermont. Both P.A.'s see patients in the office and in the hospital. P.A. B also assists in surgery with other physician's in the area.

P.A. C works with physician C in a private general practice in Vermont. He is limited in his duties at the hospital because the board of directors have not given permission for him to perform tasks there.

P.A. D works with physician D and another physician who did not participate in the study. They are in a private, general practice in rural North Carolina. He has both outpatient and inpatient duties.

P.A. E works with physician E in a private, general practice in rural North Carolina. He has both inpatient and outpatient responsibilities.

P.A. F works with physician F and many other physicians who did not participate in the study in a prison hospital in North Carolina. His primary responsibilities are in the outpatient areas but also has some limited inpatient responsibilities.

P.A. G works with physician G and many other physicians in an industrial outpatient clinic in Chicago. His responsibilities are in the emergency and medical clinics.

P.A. H works with physician H and other internists in a pre-paid group practice in Washington state. He has no inpatient responsibilities. The practice is similar to a family practice.

P.A. I works with physician I and physician J in a V.A. hospital in Oklahoma. His responsibilities are limited to a medical inpatient service.

P.A. J works indirectly with physician J in a V.A. hospital in Oklahoma. His responsibilities are on a medical inpatient service but not the same one as P.A. I.

P.A. K works with physician K in a private hospital outpatient clinic. He has no inpatient responsibilities.

The physician questionnaire took from one to two hours to complete and the P.A. questionnaire took from two to four hours to complete because there was more to the questionnaire that just the task related questions. The remaining data, which pertained to the sociological aspects of the setting are not included in this report.

Each study site was observed for one day. The practitioners were asked prior to the visit not to alter their routine so that the observer could get an idea of the routine daily activities. During the visit the observer distributed the questionnaire and answered any questions concerning the content and sturcture. The M.D. and P.A. were asked not to consult with each other on the contents of the questionnaire.

There were some interesting observations made concerning the return rate of the questionnaires. All of the physicians and P.A.'s were asked if they could finish the questionnaires on the same day that they received them without interfering with their normal routine. Three physicians and two P.A.'s were able to do this. All were in institutions. Only half of the questionnaires were returned within the first month after distribution, and the other half required several telephone calls and letters before they were completed and returned. Twenty-one of the twenty-two questionnaires were eventually returned.

ANALYSIS

Because of great interest in the current utilization of the P.A. by the M.D. and the resulting productivity, it was hypothesized that if the P.A. performed his tasks without direct supervision he could be considered more productive than if he performed them with direct supervision, the rationale being that the M.D. would be free to perform other tasks in situations where he did not have to provide direct supervision. This study was not designed to explore the quality of task performance.

Each of the P.A.'s was asked to indicate how often he performed each task at certain periods during his life-time work experience. The levels of frequency included: 0-Never, 1-Less than once a month, 2-More than once a month, and 3-Daily. They assigned these values to time periods of Before P.A. Training, During P.A. Training, and After P.A. Training. Each of these categories was further divided into two parts: With Supervision and Without Supervision. Consequently, for each listed task it was necessary to mark each of the six categories using the frequency values of 0 through 3 as mentioned above. It was explained that the word

"supervision" meant direct supervision where the physician was physically present for the purpose of directing the P.A. in performing a task. The category entitled Without Supervision included all tasks performed by the P.A. where the physician was not physically present at the time the task was performed.

Two general categories were explored using the P.A. questionnaires. The first was concerned with the degree of independence exercised by the P.A.'s as perceived by themselves. Each of the four levels of frequency were totaled in each column. These figures were totaled for all P.A.'s and all task categories and averaged. Any task being done more than once a month was considered as being done frequently. Those tasks that were done frequently and without direct supervision were considered an index of independence. Those that were done frequently with direct supervision were considered an index of dependence. Only the Before Training and After Training periods were considered in this analysis since, theoretically, all of the tasks performed in the During Training period were under direct supervision.

Figure 5 illustrates the average percent of tasks performed without direct supervision, before and after training. 46.7% of these tasks are being performed frequently as graduates as compared to 27.7% before being trained as P.A.'s. Figure 6 illustrates how the individual P.A.'s compare with each other in the performance of frequently unsupervised tasks. P.A.'s A through E all work in private practices and P.A.'s F through K work in institutions. It is interesting to note that, with one exception, all of those in private practices are above the average and again, with one exception, all those in institutions are below the average. This particular analysis implies that P.A.'s employed in private practice have a greater level of independence than those employed in institutions. However, this shall be explored further by using another analytical method.

Figure 7 illustrates the percentage of tasks performed frequently without direct supervision. History taking, physical examination and medical tasks are performed much more frequently on an independent basis that are the other categories. This is not surprising since the tasks in these categories are primarily time consuming, routine tasks that bog the physician down. It seems logical that he would delegate tasks in these areas more extensively and frequently. One reason that the tasks listed under Medical Tasks are performed more frequently is that most of the P.A.'s included in the study work for internists, and the others work for G.P.'s who primarily take care of medical and pediatric problems. This also explains why those tasks listed under Surgical Tasks are performed less frequently. Another factor relating to the relatively high degree of independence in performing medical tasks is

Figure 5. Average percent of tasks performed without direct supervision, before and after training.

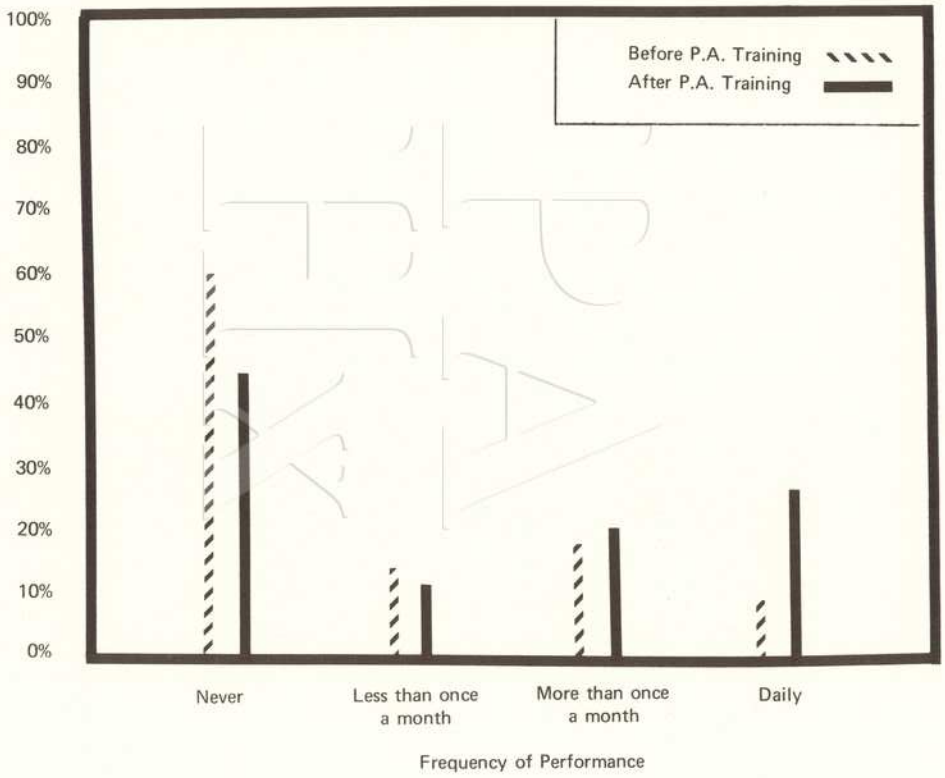


Figure 6. Precent of tasks performed frequently without direct supervision, for individual P.A.'s.

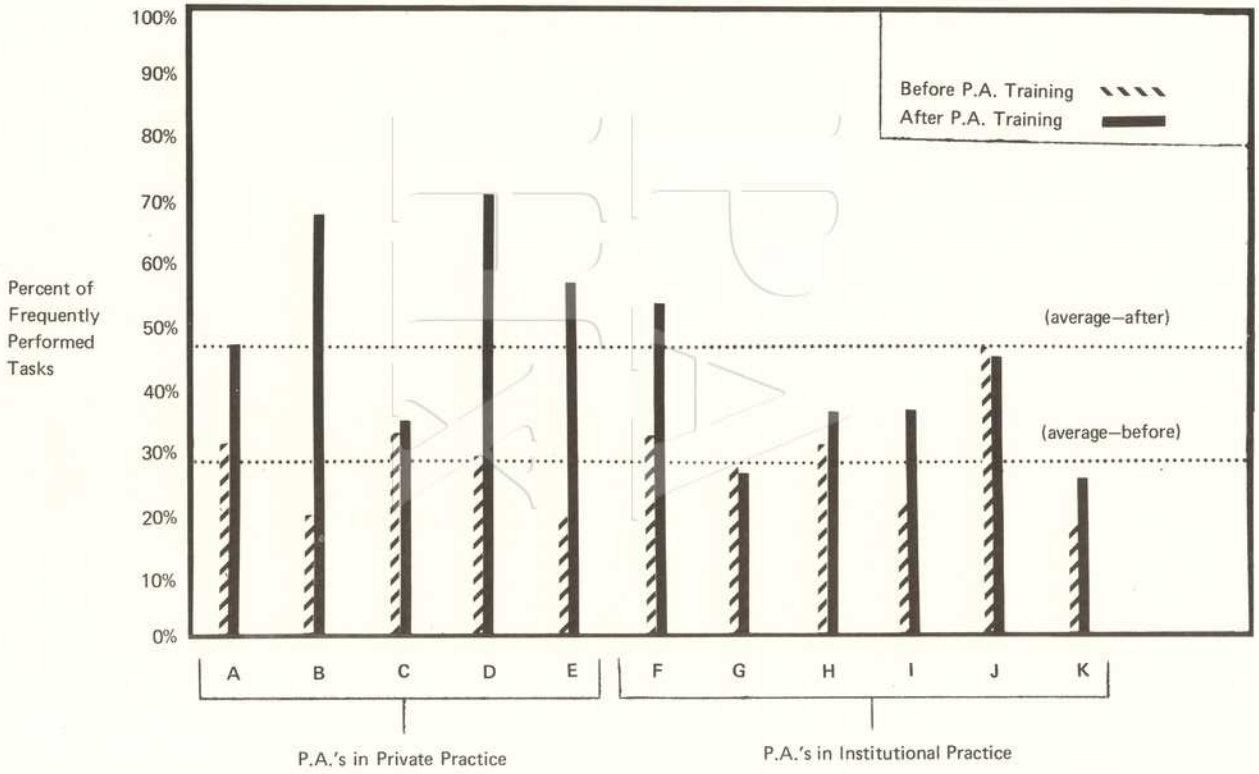
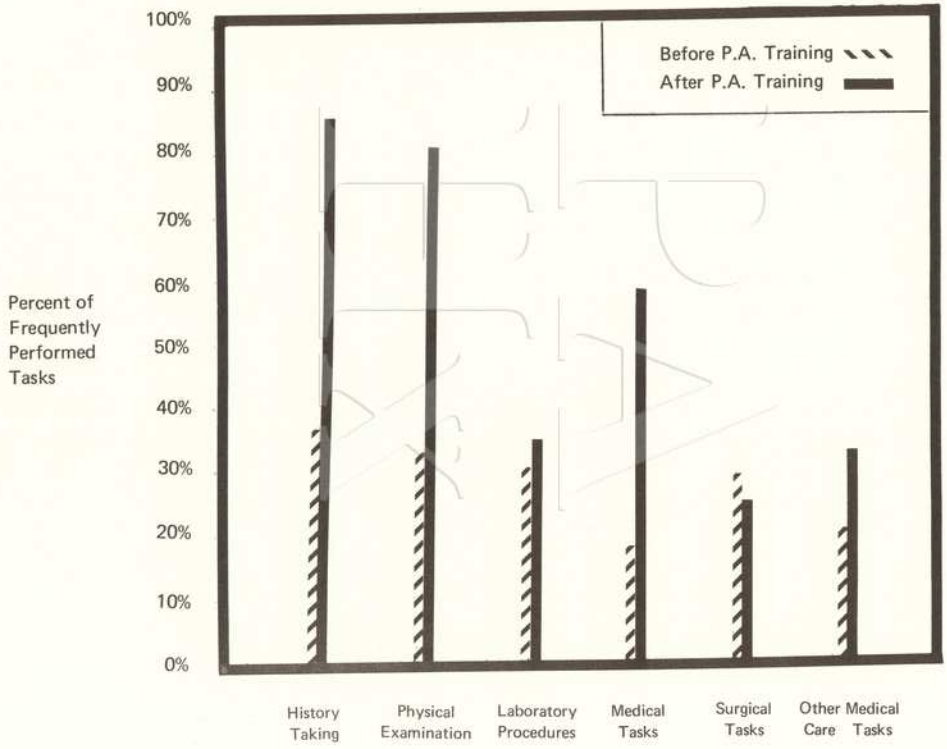


Figure 7. Percent of tasks performed frequently without direct supervision, by major task categories.



that, with a few exceptions, most of the clinical training of this sample group was in internal medicine.

The second analysis done on the data from the P.A. questionnaires was concerned with the frequency of task performance, comparing the Before/During Training periods with the After Training period. This analysis was done by considering each task separately. The most frequent performance in the Before/During period was compared to the most frequent performance in the After period. All those tasks in which there was no frequency change were considered "maintained". Those tasks that were performed less frequently in the After period were considered "decreased". And those which were performed more frequently in the After period were considered "increased". This gave some indication of how the P.A. was being utilized with regard to his past task performance.

On the average, 45% of the tasks were maintained in frequency of performance, while 26% were decreased and 29% were increased. Figure 8 illustrates how the individual P.A.'s compared with each other. Again, with one exception, those in private practices had a higher percent of increased frequency in task performance than did those in institutional practices. Also, the fact that the percent of decreased frequency was lower in the private practices further corroborates the observation that the P.A.'s skills are being utilized more extensively in that setting.

Figure 9 shows that the major task categories of history taking, physical examination and medical tasks have notably higher percentages in the increased frequency columns. This is consistent with the first analysis as illustrated in Figure 7. Laboratory procedures are markedly decreased. This is because there is another member of the team designated to do the laboratory procedures in all of the study sites. Another reason for the high percent of decreased frequency in this category is that the P.A.'s were required as students to perform many laboratory procedures as a learning mechanism and, naturally, are not required to do them as graduates.

The third analysis was done on the data from the physician questionnaires, concerning the physician's judgement of the P.A.'s level of responsibility and competence in the performance of each task. Each physician was asked to check one of the following categories for each task: "I have no knowledge of his ability"; "Cannot perform at all"; "Can perform under close supervision"; "Can perform under limited supervision"; "Can perform with supervisor's initiative and approval, but under his own direction"; "Can perform under his own initiative and direction"; and "Needs additional training". This analysis was done to determine the level of independence of the P.A. as perceived by the M.D.

Figure 8. Percent of tasks decreased, maintained and increased with regard to past task performance, for individual P.A.'s.

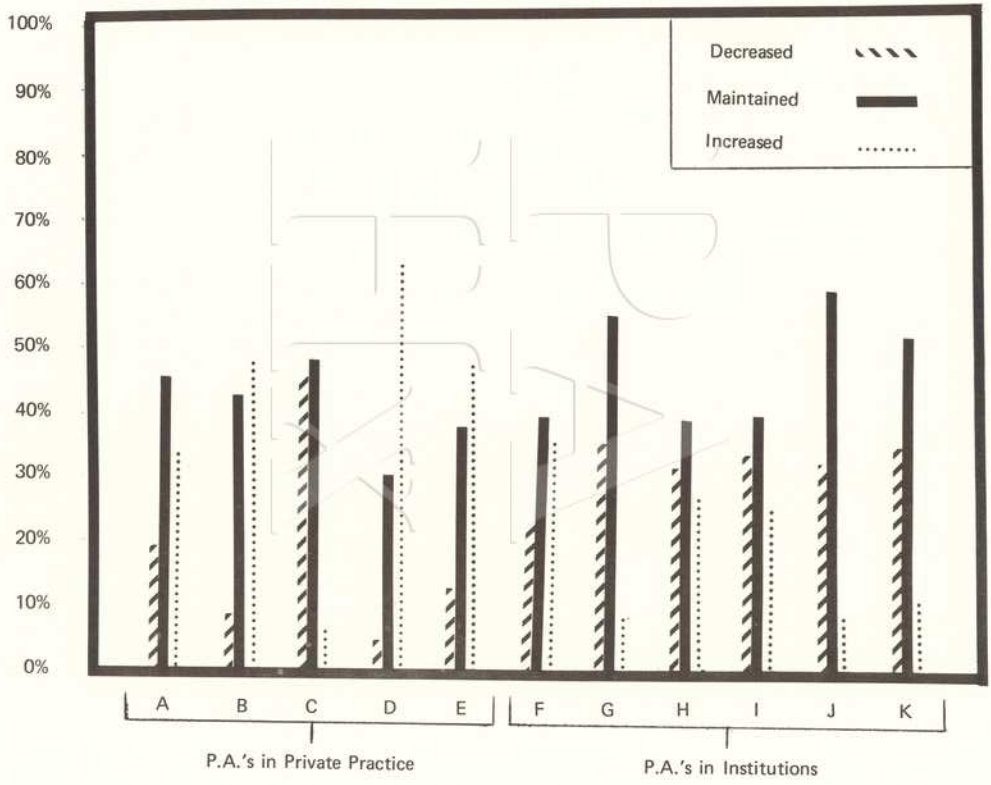
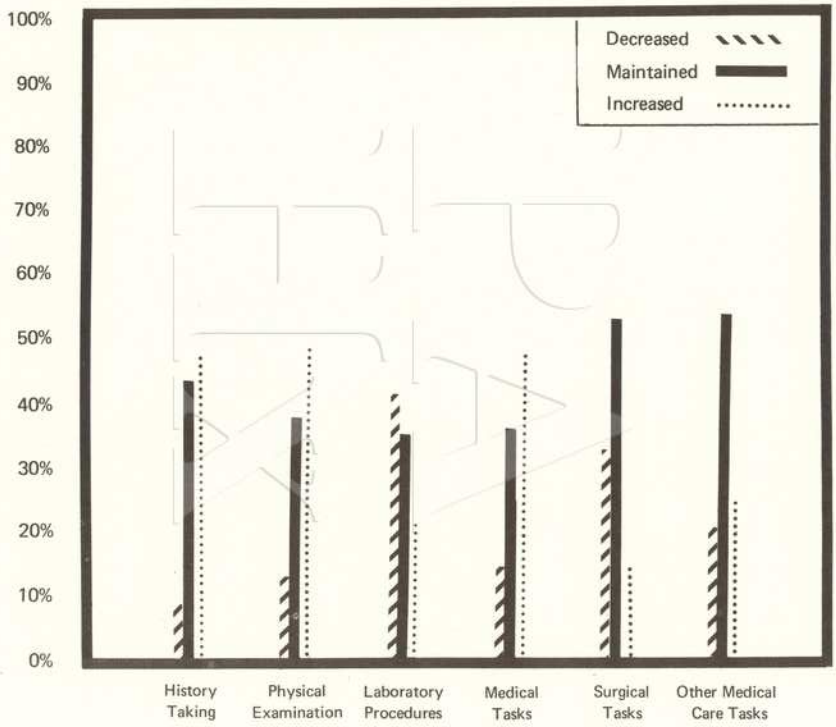


Figure 9. Percent of tasks decreased, maintained and increased with regard to past task performance, for each major task category.



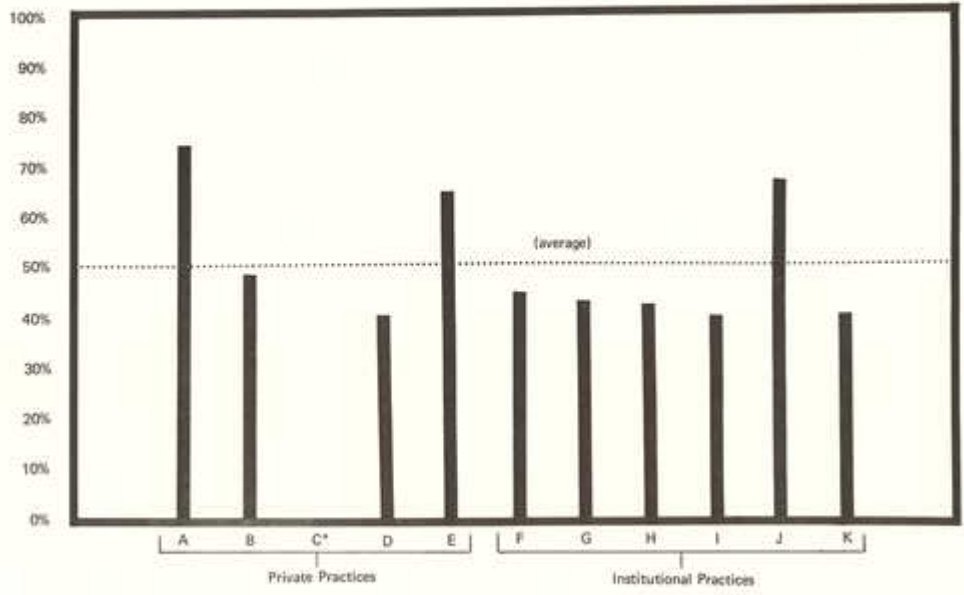
Those tasks that the physicians felt could be performed without direct supervision, the fifth and sixth categories, were considered an index of independence. Figure 10 shows how the individual M.D.'s compared in their expectations of the level of independence to be exercised by the P.A.'s. Although there are two physicians in private practices with higher than average expectations and only one in institutional practice with a higher than average expectation, the difference between the two types of settings is not as notable as were the differences found in the data from the P.A. questionnaires. The physician average is higher than the P.A. average seen in Figure 6. This means that some of the P.A.'s in institutional settings have lower perceptions of their own levels of independence than do their supervising physicians.

Figure 11 illustrates the percentage of tasks that the physicians expect the P.A.'s to perform without direct supervision by major task categories. Again, the three highest are history taking, physical examination and medical tasks. So the physicians and the P.A.'s seem to be in accord on what types of tasks are being performed on an independent basis.

The final analysis compares the findings of the first two analyses with each other. It was done as another attempt to determine the level of independence as perceived by the P.A.'s themselves. This method compared the percentage of tasks performed frequently on a dependent basis to the total number of frequently performed tasks.

Figure 12 illustrates how the individual P.A.'s compare when using this method of analysis. Those with the lowest percent of tasks performed under direct supervision are considered most independent and are at the top of the scale. By this analysis, the P.A. in private practice is no more independent than the P.A. in an institution. The difference is actually in the number of tasks being performed. The private practice P.A.'s perform many more tasks on a frequent basis than do those in institutions. This is not surprising since those in the institutions are in more specialized areas while those in private practices have both inpatient and outpatient duties and see a wider variety of problems.

Figure 10. Percent of tasks that M.D.'s expect P.A.'s to perform without direct supervision, by individual M.D.



*The questionnaire was never returned by this M.D.

Figure 11. Percent of Tasks that M.D.'s expect P.A.'s to perform without direct supervision, by task category.

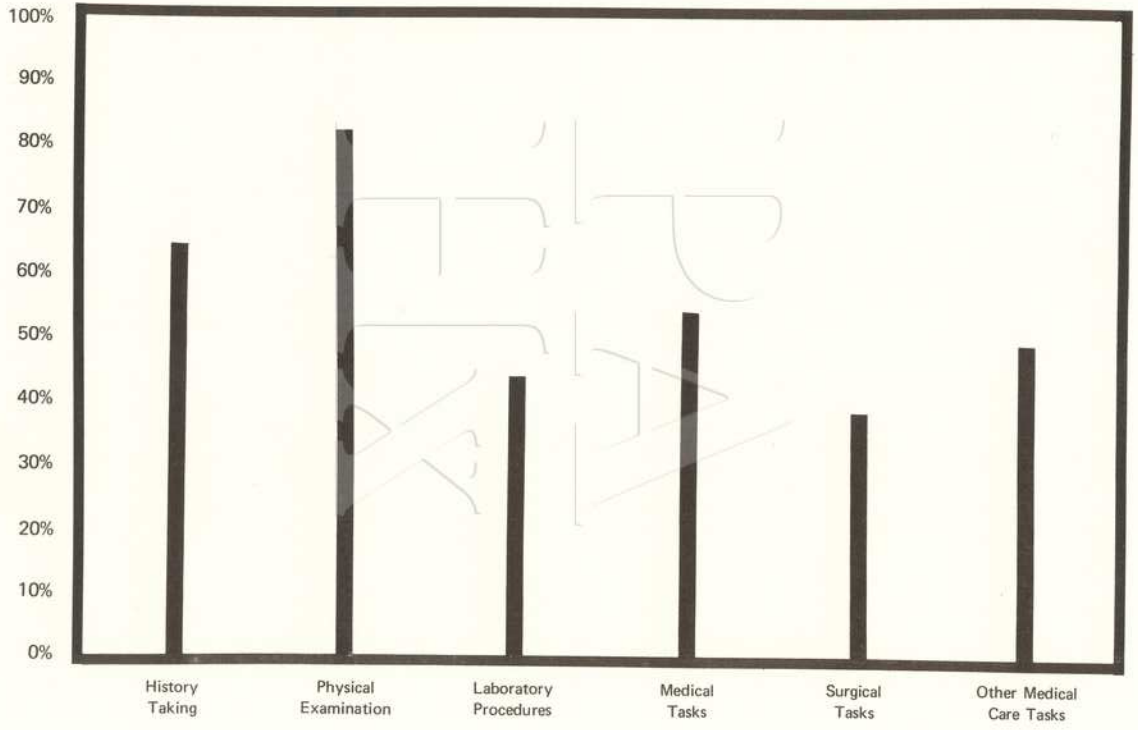
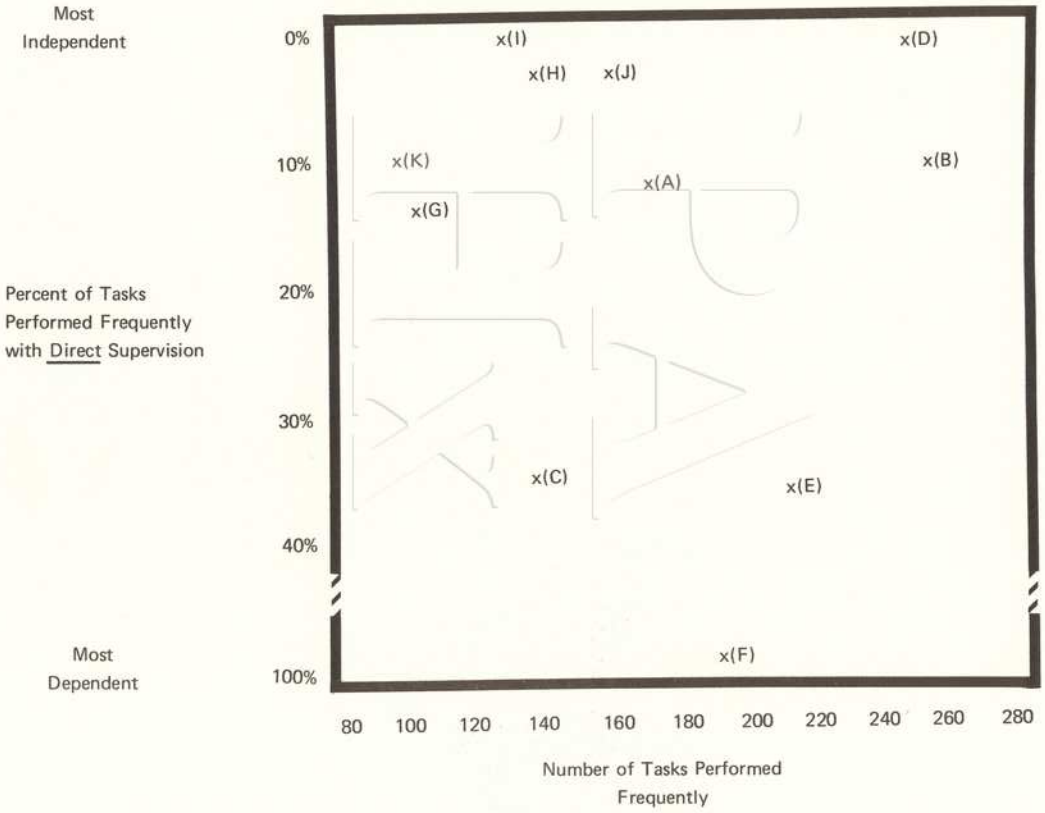


Figure 12. Level of independence, comparing percent of tasks frequently performed with direct supervision to total number of frequently performed tasks, by individual P.A.'s.



SUMMARY

In summary, the primary purpose of this study was to test the methods of analysis designed to explore two basic aspects of task performance by physician's associates–utilization of skills and extent of independence (or dependence). The methods employed in this study proved to be workable. Other types of analysis could and should be done using the same data from the task questionnaire. Although it is of interest to know that this type of analysis can be applied to the performance of the P.A. it would be even more useful to test whether or not the performance of the physician can be analyzed. On the basis of this study it seems reasonable to recommend that a similar test be conducted, analyzing physician task performance. If that were to prove feasible, then a large scale study, using random and larger sample sizes, should be conducted to determine if, how, and in what tasks the P.A. relieves the physician from his traditional duties. It is further recommended that the same method be used to study other types of physician extendors to that the various types can be compared with each other. This would be of great value to those agencies considering the promotion of the various types of training programs.

APPENDIX A

SUPPLEMENTARY INFORMATION

At the end of the questionnaires both the physicians and the P.A.'s were asked to make comments on the curriculum of the P.A. program. They were supplied with copies of the courses taken by the individual P.A.'s involved in this study. There were four basic questions asked.

The first question was "If you had to choose three subjects to be dropped from the P.A. curriculum . . . . .what would they be?" It was explained that the answers should not necessarily mean that they thought those courses were unimportant but that they were the least necessary of those taken by the P.A. The responses were as follows:

Inorganic Chemistry	(4 M.D.'s, 3 P.A.'s)
Essentials of Chemical Biology	(1 M.D., 1 P.A.)
Basic Principles of Data Processing	(3 M.D.'s, 4 P.A.'s)
Electrocardiography	(2 M.D.'s)
Medical Electronics	(4 M.D.'s, 8 P.A.'s)
Library Research	(1 M.D., 1 P.A.)
Pulmonary Function/ Inhalation Therapy	(2 M.D.'s, 1 P.A.)
Introduction to Animal Experimentation	(2 M.D.'s, 1 P.A.)
Faculty Health Clinic	(1 M.D.)
Basic Clinical Lab	(3 P.A.'s)
Community Health	(3 P.A.'s)
Medical Inpatient Service	(1 P.A.)

The next question was "If you had to choose three subjects to be exapnded, what would they be?" The responses were:

Pharmacology	(5 M.D.'s, 4 P.A.'s)
Ophthalmology	(1 M.D.)
Cardiology	(2 M.D.'s)
Medical Terminology	(1 M.D.)
Patient Evaluation	(2 M.D.'s, 5 P.A.'s)
Clinical Medicine	(4 M.D.'s, 3 P.A.'s)
Anatomy and Physiology	(1 M.D., 5 P.A.'s)

Electrocardiography	(1 M.D.)
Community Health	(3 M.D.'s, 1 P.A.)
Pulmonary Function/ Inhalation Therapy	(1 M.D.)
Medical Outpatient Service	(1 M.D., 1 P.A.)
Basic Clinical Lab	(1 P.A.)
Surgical Outpatient Service	(1 P.A.)
Radiology	(3 P.A.'s)
History, Philosophy and Ethics of Medicine	(1 P.A.)
Psychosomatic Medicine	(2 P.A.'s)
Pediatrics	(1 P.A.)

The third question was "List three subjects not included in the P.A. program curriculum that you feel would have better qualified him (you) for work in your practice." The responses were:

Gynecology	(2 M.D.'s, 1 P.A.)
Pediatrics	(2 M.D.'s, 2 P.A.'s)
Radiology	(1 M.D., 3 P.A.'s)
Psychiatry	(4 M.D.'s)
Dermatology	(2 M.D.'s, 1 P.A.)
ENT	(2 M.D.'s, 1 P.A.)
English Grammar	(1 M.D., 1 P.A.)
Interviewing Techniques	(1 M.D.)
Use of the Problem Oriented Record	(1 M.D.)
Family Practice Course	(1 M.D., 3 P.A.'s)
Neurology	(1 M.D.)
Gastroenterology	(1 M.D.)
Rheumatology	(1 M.D.)
Adolescent Medicine	(1 P.A.)
Administration	(1 P.A.)
Special Procedures	(1 P.A.)
Minor Surgery	(1 P.A.)
Psychology	(1 P.A.)

The subjects that are deemed least necessary are Chemistry, Data Processing and Electronics. The P.A. program has already deleted Data Processing and Electronics from the curriculum. Those subjects that seemed to be most valuable to the practitioners were Pharmacology, Patient Evaluation, Clinical Medicine, Anatomy and Physiology, Community Health, and Radiology. Psychiatry was recommended by four of the M.D.'s but not by any of the P.A.'s. In summary, it seems that the greatest need is in the basic clinical subject areas and not so much in the pure sciences.

APPENDIX B

This section contains the list of tasks that were used in the questionnaires.

HISTORY TAKING AND SCREENING

1. Screen patients via telephone to determine need for medical attention
2. Receive patients on arrival, i.e., introduce self, obtain patient's name
3. Screen patients on arrival to determine who should see patient
4. Review patient's medical record
5. Obtain patient's chief complaint
6. Evaluate symptoms of patient complaining of abdominal pain
7. Evaluate symptoms of patient complaining of anxiety
8. Evaluate symptoms of patient complaining of chest pain
9. Evaluate symptoms of patient complaining of constipation
10. Evaluate symptoms of patient complaining of depression
11. Evaluate symptoms of patient complaining of ear trouble
12. Evaluate symptoms of patient complaining of eye problems
13. Evaluate symptoms of patient complaining of indigestion
14. Evaluate symptoms of patient complaining of muscle pain
15. Evaluate symptoms of patient complaining of nasal or sinus problems
16. Evaluate symptoms of patient complaining of nausea, vomiting, or diarrhea
17. Evaluate symptoms of patient complaining of nontraumatic joint pain or swelling
18. Evaluate symptoms of patient complaining rashes, sores, warts or other skin problems
19. Evaluate symptoms of patient complaining of rectal bleeding
20. Evaluate symptoms of patient complaining of shortness of breath
21. Evaluate symptoms of patient complaining of sore throat or cough
22. Evaluate symptoms of patient complaining of trouble swallowing
23. Evaluate symptoms of patient complaining of urinary problems
24. Obtain past medical history
25. Obtain family and social history
26. Conduct a review of systems
27. Obtain prenatal history
28. Obtain developmental history of a child
29. Question patient about symptoms of possible side effects of medication or treatment

PHYSICAL EXAMINATION

Adults

1. Observe patient's general appearance and behavior
2. Determine patient's mental status (i.e., level of consciousness, orientation, etc.)
3. Measure height and weight
4. Measure blood pressure
5. Take radial pulse
6. Take apical pulse with stethoscope
7. Take patient's temperature
8. Measure respiratory rate
9. Test function of the cranial nerves
10. Test coordination and cerebellar function
11. Test reflexes
12. Test sensation
13. Examine skin, e.g., for rashes or cellulitis
14. Examine head, e.g., for trauma
15. Examine nose, e.g., for inflammation
16. Examine gums and teeth, e.g., for caries or gingivitis
17. Examine mouth and throat for inflammation or sores
18. Examine ears using otoscope
19. Test hearing acuity, e.g., with watch
20. Examine eyes externally (i.e., conjunctiva, extraocular muscles, pupillary reactions)
21. Examine eyes using ophthalmoscope
22. Examine external lymph nodes
23. Examine thyroid, e.g., for nodules
24. Examine cervical and lumbar spine
25. Examine breasts
26. Examine lungs for abnormal findings, e.g., rales, rhonechi, dullness
27. Examine heart for abnormal sounds, e.g., murmurs or extra beats
28. Examine extremities for pulses, edema, varicosities, color
29. Examine abdomen for organ enlargement, masses, bladder distnesion
30. Examine abdomen for tenderness or guarding
31. Examine for hernias (inguinal, femoral, or ventral)
32. Perform rectal examination
33. Perform pelvic examination

34. Examine bones for tenderness, deformity, signs of fracture
35. Examine joints for range of motion, swelling, internal derangement, tenderness
36. Examine muscles for strength, size, tone, tenderness

Infants, Children, and Prenatal

37. Observe children for abnormal behavior patterns
38. Weigh baby
39. Measure baby's length and head circumference
40. Take child's temperature, pulse, and respiratory rate
41. Measure child's blood pressure
42. Perform general physical examination on child
43. Perform prenatal examination, (i.e., measure height of fundus, determine position of fetus, etc.) after initial visit

General Physical Examination Tasks

44. Explain procedures used during examination, e.g., position, breathing
45. Position or hold adult patient for examination or treatment
46. Restrain or control children for examination or treatment

LABORATORY

Injections and IV's

1. Give subcutaneous injections
2. Give intradermal injections
3. Give intravuscular injections
4. Give intravenous injections
5. Draw blood by fingerstick
6. Draw blood from a vein
7. Start an I.V.
8. Check I.V. site for infiltration, phlebitis, or cellulitis
9. Administer tine test for tuberculosis
10. Perform skin tests for allergies
11. Read intradermal skin tests, (e.g., TB, fungal, or allergy)

Hematology

12. Measure hematocrit
13. Measure hemoglobin
14. Perform red cell or white cell count using manual counting chamber
15. Operate automatic cell counter (Coulter counter)
16. Calculate erythrocyte indices
17. Prepare and stain blood smear
18. Perform differential white cell count
19. Evaluate red cell morphology
20. Measure E.S.R. (erythrocyte sedimentation rate)
21. Perform bleeding time procedures
22. Measure prothombin time

Urine

23. Record color, gross appearance, and odor of uring specimen
24. Test urine for sugar, protein, ketones, pH
25. Measure uring specific gravity or osmolarity
26. Examine urine sediment under microscope

Bacteriology

27. Describe or record characteristics of sputum or mucus
28. Take throat culture specimen
29. Take nasopharyngeal culture specimen
30. Take blood culture specimen
31. Take stool culture specimen
32. Take wound culture specimen
33. Take urethral or vaginal culture specimen
34. Prepare bacteriological culture medium
35. Inoculate samples on bacteriological culture medium (plate or tube)
36. Interpret colony growth on bacteriological culture medium
37. Prepare and stain alide of bacteriological specimen
38. Interpret stained bacteriological slide under microscope
39. Prepare wet mounts of vaginal specimens

Stool

40. Describe or record characteristics of stool or vomitus
41. Examine stool for gross blood
42. Test stool for occult blood (guaiae, Hematest, etc.)
43. Examine stool under microscope for protein
44. Examine stool under microscope for fat
45. Examine stool for parasites

X-Ray

46. Place patient in radiographic positions
47. Take routine X-rays, i.e., chest, abdomen, long bones, skull, and spine
48. Develop, wash, and dry exposed X-ray films
49. Read X-ray films for technical adequacy
50. Point out possible abnormalities on X-ray film to physician
51. Interpret routine X-rays, i.e., chest, abdomen, long bones, skull, and spine

Machines

52. Test intraocular pressure using tonometer
53. Test pulmonary function using spirometer
54. Test adult's visual acuity using Snellen chart
55. Test child's visual acuity using Snellen chart
56. Test adult's hearing acuity with audiometer
57. Test child's hearing acuity with audiometer
58. Take electrocardiogram (EKG, ECG)
59. Read electrocardiogram for technical adequacy
60. Identify abnormal cardiac rhythms on electrocardiogram or cardiac monitor
61. Measure basal metabolic rate (BMR)

Tubes and Endoscopes

62. Insert nasogastric or Levine tube
63. Measure gastric acidity
64. Perform histamine (Histalog) stimulation test
65. Perform signoidoscopy (proctoscopy)

Other

66. Take cervical smear for Pap test
67. Perform urine test for pregnancy
68. Perform glucose tolerance tests (I.V. or oral)
69. Prepare blood, urine, or bacteriological specimens for shipment

MEDICINE

General Medicine

1. Explain or answer patient's questions about treatments, test procedures or disease
2. Explain or answer patient's questions about medication, e.g., purpose, dose, schedule, side effects
3. Teach patient or family how to administer injections
4. Plan special diets, e.g., salt free, diabetic
5. Review prothrombin or clotting times to determine proper dose of anticoagulant
6. Review blood sugar or fractional urine values to determine proper dose of insulin
7. Explain or answer questions about methods of contraception
8. Teach prepartum or postpartum exercises
9. Teach prepartum classes
10. Explain or answer mother's questions regarding postpartum care
11. Explain or answer mother's questions on newborn care
12. Teach newborn classes, e.g., baby bath demonstrations, feedings
13. Explain or answer parent's questions on child development problems
14. Instruct parents in care of children with communicable diseases, e.g., fever control, isolation
15. Teach parent recognition and prevention of allergies in children

Medical Counseling and Treatment

16. Counsel and instruct patient in the treatment regimen for abdominal pain of unknown cause
17. Counsel and instruct patient in the treatment regimen for abrasions
18. Counsel and instruct patient in the treatment regimen for acne
19. Counsel and instruct patient in the treatment regimen for acute bronchitis

19. Counsel and instruct patient in the treatment regimen for acute bronchitis
20. Counsel and instruct patient in the treatment regimen for acute otitis media
21. Counsel and instruct patient in the treatment regimen for acute tonsillitis
22. Counsel and instruct patient in the treatment regimen for alcoholism
23. Counsel and instruct patient in the treatment regimen for ankle sprain
24. Counsel and instruct patient in the treatment regimen for arteriosclerotic heart disease
25. Counsel and instruct patient in the treatment regimen for asthma
26. Counsel and instruct patient in the treatment regimen for bacterial pneumonia
27. Counsel and instruct patient in the treatment regimen for cellulitis
28. Counsel and instruct patient in the treatment regimen for chest pain of unknown cause
29. Counsel and instruct patient in the treatment regimen for constipation
30. Counsel and instruct patient in the treatment regimen for dental caries
31. Counsel and instruct patient in the treatment regimen for duodenal ulcer
32. Counsel and instruct patient in the treatment regimen for emphysema
33. Counsel and instruct patient in the treatment regimen for essential hypertention
34. Counsel and instruct patient in the treatment regimen for exogenous obesity
35. Counsel and instruct patient in the treatment regimen for finger sprain
36. Counsel and instruct patient in the treatment regimen for functional heart murmurs
37. Counsel and instruct patient in the treatment regimen for hemorrhoids
38. Counsel and instruct patient in the treatment regimen for hypertensive heart disease
39. Counsel and instruct patient in the treatment regimen for indigestion of unknown causes
40. Counsel and instruct patient in the treatment regimen for iron deficiency anemia
41. Counsel and instruct patient in the treatment regimen for laceration
42. Counsel and instruct patient in the treatment regimen for menopausal syndrome
43. Counsel and instruct patient in the treatment regimen for muscle contusion
44. Counsel and instruct patient in the treatment regimen for osteoarthritis
45. Counsel and instruct patient in the treatment regimen for respiratory allergy
46. Counsel and instruct patient in the treatment regimen for streptococcal sore throat
47. Counsel and instruct patient in the treatment regimen for trichomonal vaginitis
48. Counsel and instruct patient in the treatment regimen for uncomplicated, adult-onset diabetes mellitus
49. Counsel and instruct patient in the treatment regimen for URI (upper respiratory infection)

50. Counsel and instruct patient in the treatment regimen for urinary tract infection
51. Counsel and instruct patient in the treatment regimen for viral gastroenteritis
52. Give supportive care to prevent or deal with a depression
53. Give supportive care to prevent or deal with an anxiety reaction

SURGERY

General

1. Describe or record characteristics of drainage from chest tubes, stomach tubes, etc.
2. Describe or record characteristics of drainage from incision or wounds
3. Check dressing, e.g., for cleanliness
4. Apply or change sterile dressings
5. Stop minor bleeding
6. Control arterial bleeding
7. Examine and describe burns, e.g., extent, degree, source
8. Identify insect and snake bite wounds
9. Clean wound, cut, or abrasion
10. Debride superficial wound or burn
11. Remove splinters
12. Check incisions, wounds, or burns for progress of healing
13. Remove sutures
14. Administer routine minor first aid
15. Give care to patient with colostomy or ileostomy
16. Perform a fecal disimpaction

Minor Surgery

17. Clean ears of impacted wax
18. Remove foreign body from ear canal
19. Pierce ears for earrings
20. Remove foreign body from conjunctiva
21. Remove foreign body from cornea
22. Remove foreign body from nose
23. Control anterior nasal hemorrhage (simple nose bleed)
24. Control posterior nasal hemorrhage

25. Administer tissue infiltration anesthesia
26. Administer digital block anesthesia
27. Inject thrombosing agents into hemorrhoids or varicose veins
28. Assist physician with minor surgery
29. Suture superficial laceration
30. Incise and drain abscess (I & D)
31. Perform venous cutdown
32. Remove ingrown toenail
33. Excise wart or wen
34. Excise superficial fatty tumors
35. Perform superficial biopsy
36. Insert packing into incision, wound or cavity
37. Insert or adjust wound drain

Orthopedics

38. Instruct patient in doing simply physical exercises
39. Apply manual massage to relieve muscle pain
40. Teach patient to use crutches or cane
41. Tape or apply Ace bandage to ankle, wrist, knee, or chest
42. Apply sling
43. Apply simple splint to possible or untreated fracture of extremity
44. Prepare necessary ingredients for plaster cast or splint
45. Apply finger or hand splint
46. Apply plaster arm splint
47. Apply plaster leg splint
48. Apply cervical collar
49. Reduce simple fractures
50. Apply short-arm plaster cast
51. Apply long-arm plaster cast
52. Apply short-leg plaster cast
53. Apply long-leg plaster cast
54. Apply walking plaster cast
55. Remove, reinforce, or bivalve plaster cast
56. Give injection into bursa
57. Give injection into joint

Genitourinary

58. Catheterize the urinary bladder in adult male
59. Catheterize the urinary bladder in adult female
60. Catheterize the urinary bladder in child
61. Give prostatic massage
62. Perform circumcision in newborn
63. Perform circumcision other than in newborn
64. Perform a vasectomy

Obstetrics-Gynecology

65. Cauterize cervix
66. Insert intrauterine contraceptive device (IUD)
67. Examine patient to determine progress of labor
68. Instruct patient in labor on how to breathe, relax, bear down
69. Perform routine vaginal deliveries
70. Assist physician with vaginal deliveries
71. Pack vagina to control hemorrhage
72. Perform a D & C
73. Assist physician with a D & C
74. Perform cesarian section
75. Assist physician with cesarian section

Emergency Procedures

76. Accompany ambulance on calls
77. Load or unload patients from ambulance on stretchers
78. Lift, turn, or position patients with injuries
79. Defibrillate patient
80. Intubate patient's trachea, i.e., pass endotrachial tube
81. Perform a lumbar puncture (spinal tap, LP)
82. Perform a phlebotomy
83. Perform a thoracetesis or paracentesis
84. Perform an arterial puncture
85. Perform closed chest cardiac massage
86. Pump stomach
87. Rotate tourniquets, e.g., for patient in pulmonary edema
88. Suction trachea, i.e., perform deep endotracheal suction
89. Use IPPB equipment (e.g., Bird respirator) to help patient in respiratory distress
90. Ventilate patient with Ambu bag and face mask

Operating Room

91. Sterilize equipment
92. Shave and scrub patient for surgery, delivery, or examination
93. Ground patient, e.g., for electrical cautery, defibrillation
94. Administer inhalation anesthetics
95. Set up surgical back table with sterile instruments and equipment
96. Pass instruments to surgeon during operation
97. Assist physician with an abdominal hysterectomy
98. Assist physician with an appendectomy
99. Assist physician with a breast biopsy
100. Assist physician in excising a pterygium
101. Assist physician with a fistulectomy
102. Assist physician with gall bladder surgery, e.g., cholecystectomy
103. Assist physician with a hemorrhoidectomy
104. Assist physician with hernia surgery, e.g., herniorrhaphy
105. Assist physician with a tonsillectomy and/or adenoidectomy
106. Assist physician with a vein ligation or stripping
107. Perform an abdominal hysterectomy
108. Perfrom an appendectomy
109. Perform a breast biopsy
110. Perform an excision of a pterygium
111. Perform a fistulecotomy
112. Perform gall bladder surgery, e.g., a cholecystectomy
113. Perform a hemorrhoidectomy
114. Perform hernia surgery, e.g., a herniorrhaphy
115. Perform a tonsillectomy and/or adenoidectomy
116. Perform a vein legation or stripping

OTHER MEDICAL CARE TASKS

1. Consult doctor or nurse to obtain information or advice on patient care
2. Make suggestion to physician regarding patient care, e.g., need for medication, treatment, test
3. Coordinate patient treatment plan with other agencies, e.g., social service, welfare, school
4. Plan patient discharge from hopsital, e.g., referrals needed, health education needs, family or home preparation
5. Write progress notes in patient's chart
6. Dictate discharge summaries
7. Dictate operative summaries
8. Write orders in patient's chart or make out prescriptions for physician's countersignature

9. Accompany physician on house calls, nursing home rounds, or hospital rounds
10. Make housecalls without physician
11. Make nursing home rounds without physician
12. Make hospital rounds without physician

Administration

1. Make and confirm appointment date and time
2. Explain to waiting patients what delay to expect when running behind schedule
3. Escort patient to examination or treatment room
4. Receive calls and answer questions from patients or prospective patients
5. Explain doctor's fees to patients
6. Answer complaint letters from patients
7. Attend meetings and participate in community activities related to doctor's practice
8. Extablish and maintain personal information file on each patient
9. Arrange meetings and conferences
10. Open and sort incoming mail
11. Run errands for doctor
12. Screen phone calls and independently handle as many as possible
13. Answer correspondence on an independent basis
14. Draft letters for doctor's signature
15. Pull or file patient's medical record
16. Summarize doctor's notes and transfer information to patient's permanent record
17. Prepare and replenish supplies in physician's bag
18. Complete nonmedical portion of medical record
19. File reports and correspondence in patient's medical chart
20. Pull medical record files for scheduled appointments
21. Arrange for patient's admission to hospital
22. Explain consent form, obtain patient's signature and sign as witness to signature
23. Instruct patient on blood bank operation and arranging for donors
24. Arrange for external and internal custodial care of building
25. Order medical supplies, medications and office supplies
26. Inspect all areas and rooms for proper housekeeping, temperature, and adequate supplies
27. Train other employees
29. Screen night telephone calls
30. Maintian supplies of sterile instruments
31. Accumulate and organize history, physician and laboratory data

32. Complete, submit and file insurance forms
33. Maintain a file of paid and unpaid invoices
34. Call patient or guarantor in regard to payment of bills
35. Complete forms to assign accounts to an outside collection agency
36. Make bank deposits
37. Reconcile bank accounts
38. Establish and control petty cash fund
39. Make financial arrangements with patients
40. Obtain and record billing information for hospital or home visits by physician
41. Receive and review copy of a multiple-purpose patient visit record after doctor or staff sees patient
42. Prepare charge slips for services to patient
43. Complete insurance forms for filing insurance claims

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