

# An Integrated Medical Record and Data System for Primary Care

## Part 8:

## The Individual Patient's Medical Record

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This is the last in a series of eight articles describing an integrated system of recording medical data as developed and used by the Family Medicine Program at the University of Rochester-Highland Hospital. Computability of manual and automated systems has been described. The total system allows the practicing family physician to assess morbidity patterns within his/her practice more effectively, to record and monitor patient care, to perform audit, and to conduct research in primary care.

Since publication of the initial series of communications on integrated medical record systems for primary care,<sup>1-8</sup> a number of advances have been made and implemented. Of particular note are developments in the automation of such systems.<sup>9-11</sup> Although the individual patient's medical record has retained most elements of its traditional form, certain modifications have evolved which provide a simpler, more cohesive format. A description of the organization and content of individual medical records currently in use at the Family Medicine Training Program of the University of Rochester at Highland Hospital is the subject of this report.

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### Objectives

Effective continuing medical care requires maintenance of an organized, consistent system for recording medical history, clinical observations and findings, patient progress, and procedures performed and their outcomes. Complete yet manageable records are essential, not only for quality of care audit, but for medicolegal and third-party payment purposes as well. Design of medical records for this ambulatory family practice was approached with the following objectives in mind; that the individual record should:

1. Allow rapid and accurate identification of the patient.
2. Facilitate recording and retrieval of data.
3. Be problem oriented rather than source oriented.
4. Permit rapid horizontal scanning.
5. Allow meaningful review and audit by:

- a) displaying data in a systematic manner
- b) encouraging the recording of clinical reasoning.

Essential information to be included encompasses:

1. An adequate data base (patient demographics, individual and family history);
2. A problem list of both current and significant past conditions;
3. Patient evaluation and plans for resolution of each current problem;
4. Patient progress.

### The Individual Medical Record

Each component record form is illustrated and/or discussed in sequential order as it appears within the completed record.

#### Front Sheet — Sheet One (Figure 1)

This sheet is color-coded for patient sex; yellow represents females and green, males. The sex-appropriate sheet is used for patients of all ages. It is divided into three sections for descriptive purposes:

Section *A* includes pertinent *demographic and billing information*.

Section *B* provides a vertical check list for *individual and family medical history*.

Section *C* allows space for *critical patient information* for immediate reference such as allergies and drug sensitivities, significant surgical procedures and hospitalizations, or other physicians involved in the patient's care.

The reverse side of the front sheet is reserved for narrative descriptive information on the patient's life-style, employment, housing, avocations, and family situation. Additional individually pertinent factors are frequently included here.

#### Sheet 2 (Figure 2)

Section *A* is an age-indexed grid for recording *immunizations and screening procedures* performed through age 20. Recommended ages for performance of these procedures are indicated by shading. Either a check (✓) or date

A.

Name **Sheldon, James** Date First Seen **9/7/76** Place of Birth **NYC** Census Tract **028**  
 Address **123 Ocean Drive** ZIP CODE **12345** Telephone No. Home: **III-1110** Work: **333-3333**  
 Social Security No. **000-000-00**  
 Occupation: Head of household - **self** Place of Employment of Payer: **Adam Products**  
 Occupation: Self **Supervisor - Production** Address **2264 Commercial St.**  
 Whom to Bill: **Same**  
 Type of Med. Ins.: **BC/BS**  
 Contract No. **987654** Group No. **x14** Class No. **B**

Family Hx.	DATE	State of Health
Father	<b>Rob't 1910</b>	<b>d. MI age 50 (1960)</b>
Mother	<b>Mary 1912</b>	<b>hypertension</b>
Pat. g. f.		
g. m.		
Mat. g. f.		
g. m.		
Spouse	<b>Ellen 1935</b>	<b>a + w</b>
Siblings	<b>Jane 1932</b>	<b>a + w</b>
Children		
	<b>James Jr. 1964</b>	<b>a + w</b>
	<b>Roger 1967</b>	<b>asthma</b>
	<b>Stephen 1970</b>	<b>a + w</b>

Religion **No preference**

REMARKS: (Critical Information)

C.  
 Surgery: **L inguinal hernia 1937, Appendectomy 1946 - No complications or sequelae.**  
 Stomach Problem: **Bleeding duodenal ulcer 1950. Hosp./1 wk. - Edmond's Naval Hosp.**  
 V.D.-G.C. **1949 - R<sub>x</sub> penicillin No sequelae**

Have you or any relative (blood) or husband or wife had:

	Self		Rela-tive		Relationship
	no	yes	no	yes	
Diabetes	✓		✓		
Cancer	✓		✓		
Anemia	✓		✓		
Gout	✓		✓		
Kidney Disease	✓		✓		
High Blood Pressure	✓		✓		<b>Mother</b>
Heart Trouble	✓		✓		<b>Father</b>
Bleeding Disorder	✓		✓		
Asthma Hay Fever	✓		✓		<b>Son</b>
Epilepsy Seizures	✓		✓		
Mental Retardation	✓		✓		
Malformation	✓		✓		
Neurologic Disease	✓		✓		
Stroke	✓		✓		
Blindness	✓		✓		
Thyroid Problem	✓		✓		
Deafness	✓		✓		
Veneral Disease	✓		✓		
Mental Illness	✓		✓		
Stomach or Bowel Problems	✓		✓		
Rheumatic Fever	✓		✓		
Tuberculosis	✓		✓		
Arthritis	✓		✓		
Operations		✓			Mumps
Hospitalization		✓			Chicken Pox
Injuries	✓				Rubella (3 day measles)
Hepatitis-Jaundice	✓				Scarlet Fever
Pneumonia	✓				Polio
Tonsillitis	✓				Tendency to infection
Measles	✓				

Service History: **U.S. Navy (Reserve) 1949-1950. Medical Discharge**

Smoking History: Age Started **15** Cigarettes  Pipe  Cigars   
 Age Stopped \_\_\_\_\_ Quantity **2 ppd** pack'ys. **60**  
 Reason for Stopping \_\_\_\_\_

ALLERGIES:

**None**

Figure 1. Individual Medical Record - Front Sheet

A.

DATE	1970												1971												'72	'73	'75	'77
AGE	1	2	3	5	7	10	12	18	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
DPT	N	3	2	4	6	9	12	18	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Sabin		✓	✓	✓	✓			✓				✓																
Measles			✓	✓	✓			✓					✓															
Mumps								✓																				
Rubella								✓																				
DT																												
Tetanus																												
History & Exam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Height & Weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Head circumference	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Development																												
Hearing																												
Vision																												
Hx of smoking																												
Tine																												
Hematocrit																												
PKU	✓	✓																										
Blood Pressure																												
Dental																												
Urine Culture (♀)																												
Scoliosis																												
Date Audited																												
Complete ?																												

B.

DEVELOPMENTAL MILESTONES	B	3 mo.	6	9	12	15	18	ANTICIPATORY GUIDANCE	
Watches face		✓						<input type="checkbox"/> Flexible feeding schedules	<input checked="" type="checkbox"/> First solid foods
Coos; follows moving objects		✓						<input type="checkbox"/> Sleeping positions and habits	<input type="checkbox"/> Thumb sucking
Laughs			✓					<input checked="" type="checkbox"/> Sibling jealousy	<input checked="" type="checkbox"/> Safety—putting small things in mouth; can aspirate beans, peanuts, etc.
Holds head erect			✓					<input checked="" type="checkbox"/> Sleep schedule	<input checked="" type="checkbox"/> Weaning to cup—desire to keep bottle
Puts things in mouth			✓					<input checked="" type="checkbox"/> Handling of genitals	<input checked="" type="checkbox"/> Safety—crawling gives access to pins, heaters, electric outlets, medicines and poisons. Seat belts.
Rolls over			✓					<input type="checkbox"/> Advice on shoes	<input type="checkbox"/> Discipline
Sits without support			✓					<input checked="" type="checkbox"/> Reduced appetite	<input checked="" type="checkbox"/> Safety—climbing gives greater access to hazards; windows, stairs
Plays peek-a-boo; Crawls			✓					<input checked="" type="checkbox"/> Teething	<input checked="" type="checkbox"/> Nutrition; teeth; reduced appetite; sweets
Pulls up to standing			✓						
Tries to eat with fingers			✓						
Waves goodbye			✓						
Walks without support			✓						
Climbs on furniture			✓						
Tries to use cup and spoon			✓						<input checked="" type="checkbox"/> Desire to do things for himself
Speaks a few words			✓						<input checked="" type="checkbox"/> Bladder and bowel control
Walks up and down stairs			✓						
Uses three-word sentences			✓						
Plays alone; 'helps' clean house			✓						<input type="checkbox"/> Activity and naps
Asks "why?"			✓						<input type="checkbox"/> Need to play with children own age
Uses full sentences			✓						<input checked="" type="checkbox"/> Answering sex questions
Plays cooperatively			✓						<input type="checkbox"/> Bladder and bowel reassurance
Develops bladder and bowel control			✓						<input checked="" type="checkbox"/> Safety—automobiles, fire
Dresses self			✓						
Drops infantile speech patterns			✓						

VISITS: B 3 mo. 6 9 12 15 18 21 24 3 yr. 4 5 6

DATES: \_\_\_\_\_

Figure 2. Individual Medical Record — Immunization, Screening, and Development to Age 20



DATE											NORMALS (KCRL)	
BUN	9/16	10/16										7-22
	20											
Cholesterol	215											150-300
Lipids												400-800
Triglycerides												0-160
CO <sub>2</sub>												20-32 (meq)
Na												135-148
Cl												96-107
K	5.1	4.6										3.5-5.5
Glucose @/2 hr. p.	115	/	/	/	/	/	/	/	/	/	/	70-110/F
T <sub>3</sub> Uptake												25-35%
T <sub>4</sub> (M-P)												2.9-6.5
PBI												4.0-8.5
Uric acid												3.0-8.0 M 2.0-7.0 W

DATE											NORMALS	
ASO titre												100u
Bilirubin, direct												0.0-0.2
" , total												0.1-1.0
Calcium												8.5-10.6
Phosphorus												2.5-4.5
Creatinine	1.0											0.7-1.5
" clearance												105-150 (H.H.)
Glucose Tol: F												60-100 (H.H.)
1/2 hr.												160
1 hr.												160
2 hr.												120
3 hr.												100
Proteins, total												6-8.2
Albumin												3.5-5.5
Globulin												1.5-4.0%
"												3.5-10%
"												7-15%
"												10-20%
Rheumatoid factor												-----
ANF												-----
Latex												-----
SGOT												5-40
LDH												70-225

(H.H.) = Highland Hospital Lab Normals

Figure 3. Individual Medical Record - Laboratory Data Flow Sheet

Enc. Form No.: 041769	HOSPITALIZATION Adm: Disch: ER Visit:	NAME Sheldon, James Enc. Form No.: 049238
Date 9/7/76 Time 9am Place Office	Date 10/12/76 Time 10 <sup>30</sup> am Place Office	
T 26.5 P 80 BP 169/104 Wt 236 Ht 5' 10"	T 36.5 P 76 BP 140/95 Wt 234 Ht 5' 10"	
STAT Lab:	STAT Lab:	

New patient. Told B.P. ↑ at plant.  
cc "They said my pressure was up"

Problem: 277- Obesity  
Subjective:  
Objective (findings):  
Assessment:  
Plan:

Problem: 401- Hypertension  
Subjective:  
Objective:  
Assessment:  
Plan:

All provider notes are dictated immediately following the patient visit. Transcriptionists type dictated notes directly onto this form the day of visit. Completed notes are then returned to the provider for proofing and signature. Occasionally, the nurse or aide will write a brief remark in the chart describing the nature and reason of visit as above. All initial visit and progress notes follow the problem-oriented format illustrated here. Customary individual family and social histories are included on sheet one of the individual patient's medical record. On progress notes each individual problem is noted separately and followed in problem-oriented "SOAP" style.

<input checked="" type="checkbox"/>	1	Gen. App. Ment. Stat.	1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	2	Skin	2	
<input checked="" type="checkbox"/>	3	Nodes	3	
<input checked="" type="checkbox"/>	4	Head	4	
<input checked="" type="checkbox"/>	5	Eyes	5	
<input checked="" type="checkbox"/>	6	Fundi	6	
<input checked="" type="checkbox"/>	7	Ears	7	
<input checked="" type="checkbox"/>	8	Nose	8	
<input checked="" type="checkbox"/>	9	Oral	9	
<input checked="" type="checkbox"/>	10	Throat	10	
<input checked="" type="checkbox"/>	11	Neck	11	
<input checked="" type="checkbox"/>	12	Chest	12	
<input checked="" type="checkbox"/>	13	Breasts	13	
<input checked="" type="checkbox"/>	14	Lungs	14	
<input checked="" type="checkbox"/>	15	Heart	15	
<input checked="" type="checkbox"/>	16	Abdomen	16	
<input checked="" type="checkbox"/>	17	Back	17	
<input checked="" type="checkbox"/>	18	Ext. Gen.	18	
<input checked="" type="checkbox"/>	19	Vag. & Cx.	19	
<input checked="" type="checkbox"/>	20	Pv. Content	20	
<input checked="" type="checkbox"/>	21	Rectal	21	
<input checked="" type="checkbox"/>	22	Extrem.	22	
<input checked="" type="checkbox"/>	23	Peri. Vasc.	23	
<input checked="" type="checkbox"/>	24	Cerebellar	24	
<input checked="" type="checkbox"/>	25	Cranial	25	
<input checked="" type="checkbox"/>	26	DTR's	26	
<input checked="" type="checkbox"/>	27	Neuro. Oth.	27	

Present Illness:  
Review of Systems:  
Physical Exam (positive findings)  
1) obesity  
6) abn fundi

Problems:  
1) obesity (277-)  
Plans: 1) diagnostic  
2) therapeutic  
3) patient education

2) hypertension (401-)  
Plans: 1) diagnostic  
2) therapeutic  
3) patient education

*Sheldon*

*Sheldon*

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STAPLING MARGIN

Figure 4. Individual Medical Record — Progress Notes

**SHELDON**

Last Name

**JAMES**

Given Name

**7 11 31**

Date of Birth

**0 2 8**

CT

DATE	DIAGNOSTIC CODE	PROBLEM TITLE	DATE RESOLVED	INACTIVE
			1937	L. INGUINAL HERNIA
			1946	APPENDECTOMY
9/7/76	277-	OBESITY		
9/7/76	401-	HYPERTENSION		
10/2/76	3049	TOBACCO ABUSE		
10/2/76	791-	HEADACHE	→ 11/6/77	
4/6/77	7855	ABDOMINAL PAIN (DUODENAL ULCER)	→ 5/3/77	
5/3/77	532-	DUODENAL ULCER		
5/27/77	484-	MARITAL PROBLEM		

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Figure 5. Individual Medical Record - Cumulative Problem List

Figure 6. Individual Medical Record - Medication Record

Drug Allergies, Intolerances, Idiosyncracies, Abuses: <div style="text-align: center; font-size: 1.2em; margin-top: 10px;">None</div>	Well-tolerated and Effective Drugs:
--	-------------------------------------

LONG-TERM MEDICATIONS								
DATE	DIAG CODE	PROBLEM TITLE	MEDICATION	DOSE	SIG	AMT RXd	REFILL INSTR	SUBSEQUENT REFILLS (Date / amount or cutoff date)
9/76	401-	Hypertension	Hydrochloro- thiazide	50mg	one bid	100	x 3	4/77 x 3
5/77	532-	D.U.	Mylanta II	30cc	7xd.	12oz	x 3	

SHORT-TERM MEDICATIONS														
DATE	CODE	MEDICATION	DOSE	SIG	AMT	REFILL	DATE	CODE	MEDICATION	DOSE	SIG	AMT	REFILL	



may be entered in the appropriate grid for items completed.

Section B — The importance of monitoring the physical and emotional development of children is a well-accepted tenet of good medical practice. In addition to allowing recording of the age at which the child passes *developmental milestones*, this grid also indicates when 90 percent of normal children may be expected to achieve certain motor, communicative, and social skills. In the adjacent section appear *anticipatory guidance* items which remind the health-care provider of areas to be discussed with the parents.

#### Sheet 2, reverse side (Figure 2A)

This is a continuation of the *immunization and screening* grid for ages 21 to 69. The types and frequency of procedures shown here have been adapted from published recommendations for the asymptomatic adult.<sup>12</sup> Unspecified grid lines are provided for recording other selected tests or procedures in patients identified as "high risk" for any particular problem.

#### Sheet 3 (Figure 3)

Both sides of the *laboratory data* flow sheet are illustrated by this single figure. Blank grid lines are provided for entry of additional laboratory data.

#### Sheet 4 (not shown)

This simple sheet for collection of laboratory slips is unremarkable. For ease of location, however, slips are affixed in shingle fashion with date in evidence at the top of each slip.

#### Sheet 5 (Figure 4)

Sheet 5 is the standard form for recording progress notes on all patients. It is designed to promote rapid horizontal scanning of all notations of patient progress. A check (✓) is placed beside the indicated region or organ examined if found normal, or an (x) beside areas with abnormal findings. Reference to specific items listed by number in the center section facilitates subsequent review. Frequently information on such items as breast or ophthalmoscopic examination, or heart murmurs, for example, are located in this fashion. Progress notes are record-

ed by the health-care provider in the two spaces provided to either side of the central checklist column. A review of systems, history of present illness, objective findings, and plans for management are recorded in the problem-oriented style. In relatively uncomplicated patient visits, a single column suffices for entry of all necessary information. In no instance is the progress note sheet stapled permanently into the chart until all columns are filled.

#### Floating Sheet, face side (Figure 5)

This sheet is made of heavy stock paper and "floats" immediately in front of the latest patient progress notes. The face side contains the cumulative problem list. Each problem considered to have long-term health implications for the patient is listed.

Indiscriminate recording of all minor problems would overburden the problem list and detract significantly from its utility. The date of diagnosis of significant problems is entered together with a written and coded diagnosis. Diagnoses or problems are coded in this practice in accordance with the *International Classification of Health Problems in Primary Care* (ICHPPC).<sup>13</sup> The same diagnostic code number appears in the progress notes, and the problem list thus serves an indexing function for the narrative and descriptive portions of the patient's medical record. Columns are also provided for recording date of resolution of problems as well as titles of inactive problems with continuing health-status impact.

#### Floating Sheet, reverse side (Figure 6)

Both *long and short-term medications* are listed on this sheet of the medical record. When this record becomes filled, additional sheets may be affixed to the back of the problem list. Experience has indicated that modification of this form is in order and in the future more space will be allotted to long-term medication and refills and less to short-term therapy.

The floating sheet, in its entirety, provides immediate access to the most salient factors of the patient's condition. The fact that it is not affixed to any specific portion of the chart body allows rapid cross reference with any other bit of chart information.

#### Growth Chart

If the patient is less than 18 years of age, standard height-weight recording forms become part of the individual record, and are stapled into the child's chart immediately behind the screening grid (Figure 2A).

#### Conclusion

Description of the individual patient's medical records completes the series of communications on data systems currently in use at one family practice center. It is our hope that the series has been helpful, either *in toto* or in part, to other primary care practices offering continuing ambulatory care.

#### References

1. Farley E, Treat D, Baker C, et al: An integrated system for the recording and retrieval of medical data in a primary care setting (Introduction to Series); Part 1: The age sex register. *J Fam Pract* 1(1):45, 1974
2. Froom J: An integrated system. . . Part 2: Classification of diseases. *J Fam Pract* 1(1):47, 1974
3. Froom J: An integrated system. . . Part 3: Diagnostic Index-E Book. *J Fam Pract* 1(2):49, 1974
4. Froom J: An integrated system. . . Part 4: Family folders. *J Fam Pract* 1(2):49, 1974
5. Farley ES: An integrated system. . . Part 5: Implications of filing charts by area of residence. *J Fam Pract* 1(3/4):43, 1974
6. Froom J: An integrated system. . . Part 6: The problem-oriented record. *J Fam Pract* 1(3/4):49, 1974
7. Froom J: An integrated system. . . Part 7: The encounter form and the minimum basic data set. *J Fam Pract* 2:37, 1975
8. Treat D: An integrated system. . . Part 8: The individual patient's medical record. *J Fam Pract* 2:43, 1975
9. Froom J, Culpepper L, Boisseau V: An integrated medical record and data system for primary care. Part 3: The diagnostic index, manual and computer methods and applications. *J Fam Pract* 5:113, 1977
10. Froom J, Culpepper L, Kirkwood R, et al: An integrated medical record. . . Part 4: Family information. *J Fam Pract* 5:265, 1977
11. Farley ES, Boisseau V, Froom J: An integrated medical record. . . Part 5: Implications of filing family folders by area of residence. *J Fam Pract* 5:427, 1977
12. Frame PS, Carlson SJ: A critical review of periodic health screening using specific screening criteria: Part 4: Selected miscellaneous diseases. *J Fam Pract* 2:283, 1975
13. Classification Committee of the World Organization of National Colleges, Academies, and Academic Associations of General Practitioners/Family Physicians: *International Classification of Health Problems in Primary Care*. Chicago, American Hospital Association, 1975