REQUIREMENTS FOR CONVERSION
FROM ADP-EDP

# 317 - 66

AUTHOR: R. VAUGHAN
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Dr. Arvine G. Popplewell, Director
Marion County General Hospital
960 Locke Street
Indianapolis, Indiana

Dear Dr. Popplewell:

This report has been prepared to achieve several objectives:

1. To document, in a broad sense, the input and output associated with the present accounting machine operation.

2. To assist Mr. Kidd, Mr. Hipskind, and me in our weekly I.H.D.A. meetings to discuss modifications to the PAL package.

3. To point up problem areas which will be encountered in a changeover from the Tab operation to a PAL package.

4. To recommend various means to overcome the problems in Item 3.

We have noticed some additional problems which are strictly of an accounting nature that will not affect PAL package implementation. These will be reported upon in a separate report from the George S. Olive & Company.

Mr. Hipskind and I both have in our files more detailed information concerning the areas covered in this report. It is not thought to be necessary to publish more details at this time since the details of input and output format modification have not yet been finalized by IBM, MAC, and the IHDA EDP coordinators committee.

I would like to thank Mr. Kidd and Mr. Feurer, Assistant Administrators; Mr. Hipskind, George S. Olive & Company; Miss Vidmar, Associate Controller; Miss Starbuck, Tab Room Supervisor; and your secretary, Mrs. Zumwalt, for their cooperation during the preparation of this report.

Very truly yours,

[Signature]

R. G. Vaughan, III
Regional Director
SYNOPSIS

The IBM 402 Accounting Machine System at Marion County General Hospital was implemented about 6 years ago. The system was well designed and has functioned very well until recently. Now, with the much changed billing and information requirements (stemming from the growth of Blue Cross and the advent of Medicare), the hospital is contemplating the replacement of this system. This report outlines the general requirements for the conversion from the present ADP system to an IBM 1400 series EDP system. It is assumed that the IBM PAL ("canned" hospital program) package will be used with as little modification as possible.
# Table of Contents

## Part A: In-Patient Billing and Daily Census
- Overview ......................................................... Page 1
- Present System ............................................... Page 3
- General Requirements for Conversion .............. Page 9

## Part B: Out-Patient Billing
- Overview ......................................................... Page 12
- Present System ............................................... Page 13
- General Requirements for Conversion .............. Page 15

## Part C: Accounts Receivable
- Overview ......................................................... Page 16
- Present System ............................................... Page 17
- General Requirements for Conversion .............. Page 18

## Recommendations ............................................. Page 19
PART A: IN-PATIENT BILLING AND DAILY CENSUS

OVERVIEW

All in-patient bills are now prepared in the Tab Room. Bills showing detailed charges are prepared every seven days and following discharge. Welfare patients' bills are automatically written off (and detailed charges are dropped from the file) every seven days. Lately, this seven day cycle has fallen way behind. All detailed charges are retained for paying patients and third-party bills; these are summarized manually (total charges by ancillary service, etc.) following discharge. From an accounting standpoint, the present procedure of writing off welfare accounts leaves much to be desired. PAL will require a more sophisticated write-off procedure and a slight revision in input data. PAL output will be far superior to that available with the present system.

Presently two midnight census reports are prepared: one, every night, by Nursing Service and Admitting; and one, the following morning (on an as-requested basis only), by the Tab Room. The two rarely agree. The PAL output will replace both of these and accuracy should be improved.

Several monthly statistical reports are currently being generated in the Tab Room which are not standard PAL output. It will be necessary to program these individually.
PRESENT SYSTEM

1. ADMISSIONS

During the admitting process, a 9-line Addressograph plate is prepared for each patient. A white 3 x 5 card is imprinted and sent to the Tab Room where three cards are punched as follows ("Card Column" numbers are abbreviated "CC":)

**Address Card**

- CC 1-25 Patient Address
- CC 26-27 Financial Rating
- CC 32-51 Patient Name
- CC 52-57 Hospital Number
- CC 58 Check Digit
- CC 59 "X" Punch (Auto)
- CC 60 "3,8,9" Punch (Auto)
- CC 61-66 "Indpls." (Auto)
- CC 68-69 Postal Zone
- CC 71-73 "Indiana" (Auto)
- CC 76-80 Admission Date

**Census Card**

- CC 10 "X" Punch (Auto)
- CC 11 "1" Punch (Auto)
- CC 17-19 Census Tract
- CC 20-23 Month, Year of Birth
- CC 25 "1" Punch (Auto)
- CC 26-27 Financial Rating
- CC 28-29 Service Code
- CC 30-31 Floor Location Code
- CC 32-51 Patient Name
- CC 52-57 History Number
- CC 58 Check Digit
- CC 59 Sex Code
- CC 60 Race Code
- CC 61 Religion Code
- CC 64 Marital Status Code
- CC 65-66 City Zone Number
- CC 67-71 Admission Date
- CC 72-75 Room Rate

**Balance Card**

- CC 8-12 Admission Date
- CC 30-31 Floor Location
- CC 32-51 Patient Name
- CC 52-57 History Number
- CC 58 Check Digit
- CC 59 "0" Punch (Auto)

The reason for the duplication of effort is that each card serves a different function. Following punching and verifying, the census cards are duplicated and held for statistical reporting at the end of the month.

Since the specific details regarding the processing of these cards within the Tab Room is already well documented, they will be described in the report only when absolutely necessary. Throughout the balance of this report, we will be primarily interested in data input, and reports output from the tab system.
2. CHARGES

Room and board charges are generated each day from the census cards corresponding to those patients in the house as of midnight. Source documents for other charges that flow into the Tab Room are as follows:

a. Blue I.B.M. cards, imprinted with patient's 5-line plate, with the service and charge written and/or coded in appropriate boxes. These come from I.C.U., delivery, O.R., C.S.S., Physical Medicine, E.R., Pharmacy, and the Wards. Patient number, service date, service code and/or special charge is punched directly into this card.

b. Requisition copies from Lab. and X-Ray. One card is punched for each service checked on the requisition.

c. Medication sheets, which show all medications received by a given patient during a five day period. A total charge has been written on this sheet in the pharmacy. One card is punched per medication sheet.

In each case the cards are punched as follows:

CC 25 "1" Punch to designate I-P charge
CC 52-57 History Number
CC 58 Check Digit
CC 59 Service ID Code
CC 65-69 Service Code
CC 70-75 Charge Amount (if non-standard charge)
CC 76-80 Date Service Requested

The charge amount, if not key-punched, is gang-punched from a master charge deck. These cards are used (1) to make a daily revenue printout (by ancillary service within nursing unit), (2) to update the patients' accounts, and (3) the lab statistics report (See Section 7 below).
3. RECEIPTS

All receipts are recorded by the cashiers on a Cash Receipts Form #A-11. One card is punched for each receipt; no distinction is made between types of payment (cash from patient, check from patient, check from Blue Cross or other third party, etc.). Cards are punched as follows:

- CC 1-7 Receipt Number
- CC 10 Class ("1" - House, etc.)
- CC 26-27 Financial Class (only punched for "Recovery Cash")
- CC 32-51 Patient Name
- CC 52-56 History Number
- CC 57 Check Digit
- CC 59 "8" Punch (Auto)
- CC 60 "1" Punch if "Current Cash" (Against an open account);
  "3" Punch if "Recovery Cash" (against an account that was already written off)
- CC 70 "X" punch
- CC 71-75 Amount Received
- CC 76-80 Date Received (Auto)

From these cards a daily cash receipts journal is printed out. The cards are then used to update the patients' accounts.

4. DISCHARGES

When a patient is discharged a blue 3 x 5 card is imprinted by the Admitting Office and sent to the Tab Room. A card is punched which is used to (1) update the census deck immediately and (2) to trigger a final bill several days later. Format is as follows:

- CC 26-27 Financial Category
- CC 32-51 Patient Name
- CC 52-57 History Number
- CC 58 Check Digit
- CC 76-80 Date of Discharge
5. CHANGE OF STATUS

A pink copy of the change of status form is received from the Business office. The old "address", "census", or "balance" card (See Section 1 above) is manually removed from the master file, corrected on a key-punch, and refiled manually.

6. DAILY CENSUS

The daily census report is presently prepared by the Admitting Office on the midnight to 8:00 shift, by running the "in-house" file of 9-line plates through an automatic imprinter. Only the first two lines of each plate are imprinted for each patient remaining in the house, by nursing station.

This "in-house" file of plates is first updated and double checked by (1) previous day's sheet which has been updated by Nursing and (2) 3 x 5 cards imprinted each time a patient was transferred, admitted or discharged during the past 24 hours.

Very recently this census report has been compared to a print-out of the "Census Card" master file in the Tab Room. This has been done about once every 10 days for the past two months. The two have not agreed in total.

7. LABORATORY STATISTICS

Each day the charge cards (punched in Section 2 above) for lab tests are printed out showing the number of tests run for each lab service code. At the end of the month these are totaled manually and sent to the lab. This serves as part of the laboratory's monthly report which is sent to Mrs. Zumwalt. (Also included are O-P and E.R. lab tests, see Part B of this report).

8. MONTHLY STATISTICAL REPORTS

Presently seven print outs (approximately 36 pages) are prepared at the end of each month by the Tab Room. These show in-patient admissions, E.R. cases, and out-patient visits broken down in the following ways:

Report #1: I-P Admissions; showing subtotal males, females; white, Negro, other; and grand total by census tract number (2 pages).
Report #2: I-P Admission; number of admissions within financial category within medical specialty. (11 pages).

Report #3: I-P Admissions; number of admissions within medical specialty within nursing unit (5 pages).

Report #4: I-P Admissions and E.R. cases; sub totals by financial category and grand total (2 pages).

Report #5: I-P Admissions; number of admissions by financial category within nursing unit (12 pages).

Report #6: E.R. Cases; number of cases by race, sex, admitted as I-P, and sub-total, by census tract (2 pages).

Report #7: Clinic Appointments; number of "kept appointments" by medical specialty (2 pages). Recently the Tab Room has also been requested to prepare a supplement to this report showing "No. of Unique Patients" by medical specialty.

All of these reports are typical accounting machine "listings" without headings. Aside from being difficult to read, they are generally not timely and accuracy is questionable. All of the reports, with the possible exception of report #5, are useful to hospital administration.

9. IN-PATIENT BILLS

In-patient bills should be prepared following discharge or every seven days. Recently this has only been done about once a month. These are essentially accounting machine listings showing either:

a) All detail charges from time of admission to date, for all patients having a financial classification indicating that the hospital should ultimately be reimbursed for services rendered; or

b) Balance forward from previous week and all detail charges accumulated during the week for all patients having a financial classification indicating that the hospital will not be reimbursed.
In the latter case the account is automatically credited with an amount equal to the new balance so that the new balance forwarded is equal to zero. The sum of these credits is reported as in-patient write-offs.

Most of these write-offs will be reimbursable when the Indiana Title XIX enabling legislation is passed (presumably this will be effective on January 1, 1968).
GENERAL REQUIREMENTS FOR CONVERSION

1. ADMITTING

In the long range, the 9-line plate should probably be eliminated and the financial interview form (Form A-1) should be made a part of a typical "face sheet" (which MCGH presently does not have).

For the interim period, the "Admitting-Financial Interview" function should be made compatible with the PAL package with as little disruption to the present system as possible. One way to accomplish this would be as follows. Most of the PAL admitting input information is contained in the present 9-line plate. After the financial interviewer completes form A-1, he could also fill in several pieces of information required by PAL on a mineographed form and clip this to form A-1. After admitting cuts the 9-line plate, they will imprint this new form and send it to be key-punched. The additional information to be included on this form are such things as "Doctor No.", guarantor, and insurance information. As soon as sufficient information is available regarding the precise PAL input format, this form should not be difficult to design. Several management decisions will be required regarding the handling of "financial class", guarantor and insurance information, and room numbers. Standard "insurance records" will have to be created for PAL.

From this new form, the following PAL input documents will be key-punched:

a. Patient name card
b. Guarantor card
c. Insurance coverage card(s)

2. CHARGES

Insofar as the source documents are already flowing to the Tab Room, the key-punching of PAL charge input data should pose no problems. However, some in-service education is required to make sure that charge tickets are generated every time a chargeable service is rendered. Charge cards (unless the PAL input format is changed) will by key-punched as follows:

CC 1 "D" Punch
CC 2-7 History Number
CC 8 Check Digit
CC 9-10 Batch Number (Auto)
CC 11-15 Service Code
CC 22-26 Amount (if not standard service code)
It seems highly probable that this format will be changed to include "Date Service Rendered", Nursing Station (including Clinic & E.R.).

Batch number is not currently being key-punched. Good accounting practice demands a batch number; this could easily be automatically duplicated in at the key-punch operation.

Standard "Charge description revenue records" will have to be created for PAL.

3. RECEIPTS

It will be necessary to have the cashier's code on to the cash receipt where the payment came from. The key-punching format will be as above except that a "P" will be punched into card column 1. Again, it seems probable that the PAL input format will be modified to include "source of payment" and possibly a receipt number.

4. DISCHARGES

Assuming that the only input required to PAL will be patient history number (CC 2-7) and discharge date (CC 36-40) this will present no problems in key-punching from the present source document (blue 3 x 5 cards).

5. CHANGE OF STATUS

Regardless of what input format is finalized (see Section 1 above), this should pose no problem in key punching from the present source document (pink copy of change of status form).

6. DAILY CENSUS

The PAL package generates a combined midnight census and patient condition report. This will be a tremendous improvement over the present system. This census work will be eliminated in the business office and the 9-line plate could therefore be eliminated sometime in the future (see Section 1 above).

7. LABORATORY STATISTICS

PAL is capable of generating this report. Format has not been discussed at weekly EDP coordinators meetings as yet.
8. **MONTHLY STATISTICAL REPORTS**

These reports would not be standard PAL output. It is recommended that, as soon as the decision is made to go ahead with the conversion to a computer, a part-time student be hired to program this application. This approach is recommended because:

1. These reports are unique to MCGH.

2. MCGH should have full control over this program so that report format and content can be changed as hospital administration's needs change.

3. The computer program should be written in a high level language to facilitate changes in the future.

4. More timely, more easily read reports, will benefit hospital administration immediately.

This program could very likely be run on one of the local bank's computers prior to conversion. Report length should be reduced about ten, easily read pages.

9. **IN-PATIENT BILLS**

The in-patient format, as tentatively finalized by the IHDA EDP coordinators committee, will be a vast improvement over the present procedure.

PAL will necessitate a change in the present write-off procedure for charity patients. The hospital will have greater accounting control if patients accounts are not written-off prior to discharge. The discharge bills for these patients could be put into the PAL accounts receivable routine and then written-off if they are uncollectable. This point should be discussed by hospital management. It will be discussed more fully in the George S. Olive & Company report.
PART B: OUT-PATIENT BILLING

OVERVIEW

At present a Clinic Patient Billing System does not exist, and the emergency room billing system is not too sophisticated, at MCGH. Medicare (now), and Title XIX (one year from now) will require much sophistication in both areas.

The method of handling clinic and E. R. billing with the PAL package has not been discussed in detail by the EDP coordinators committee at the time of this writing. Also, MCGH administration must set some guidelines regarding the overall philosophy for the handling of these functions.
PRESENT SYSTEM

1. VISIT CHARGES FOR CLINIC PATIENTS

Depending upon financial rating most patients pay a flat rate (scaled from $3.00 down to $0.25) prior to visiting the clinic. One cash receipt is prepared daily by the cashiers showing total amount received from clinic patients. One cash receipts card is punched for this as in Part A, Section 3, except that a "2" is punched in CC 10 to designate "Out Patient".

For each "kept appointment", a copy of the appointment slip is sent to the Tab Room where one card is punched for each patient as follows:

- CC 18-19 Journal entry date
- CC 25 "2" punch (O.P.)
- CC 30-31 Medical specialty code
- CC 52-57 History Number
- CC 58 Check Digit
- CC 73-75 "300" punches (= $3.00) (Auto)
- CC 76-80 Date of Appointment

Thus "revenue" is assumed to be $3.00 per visit. All of the above cards are then listed on a Daily Journal showing all visits @ $3.00 each, and total O-P cash receipts for the day. The balance is written-off.

Therefore, there are no Out-Patients Accounts Receivable. The kept appointment cards are saved to run the monthly statistical report #7 (see Part A, Section 8).

2. ANCILLARY SERVICE CHARGES FOR CLINIC PATIENTS

Cards are punched for clinic patient drugs, lab and x-ray charges as in Part A, Section 2 except that a "2" is punched in CC 25 to designate "Out-Patient". Lab, drug, and x-ray charges are punched for each examination or test, but only one card is punched each day for clinic patient drugs during the day. A Revenue Journal Listing is prepared for all of these charges, which are then written-off. Lab charge cards are saved for the lab test report (see Part A., Section 7).
3. EMERGENCY ROOM VISIT AND ANCILLARY SERVICE CHARGES

From the TBNNA (treated but not admitted) Form, a "census card" and "address card" are punched essentially the same as in Part A, Section 1. Also from the TBNNA Form Charge Cards are punched (as in Part A, Section 2, except that CC 25 is left blank to designate "E.R.") for drug and ambulance charges. Lab and x-ray charges come down separately and these are punched the same way. Following a Revenue Journal Listing, all cards associated with patients with uncollectable financial classifications are written off immediately.

Cash receipts for E. R. patients are punched as in Part A, Section 3, except that CC 10 is left blank.

Ledger copies only of bills showing detail charges for paying E. R. patients are prepared and sent to the accounting section. As bills are prepared, balance cards are summary punched to go into the E. R. Accounts Receivable file. The Accounting Office keeps the ledger copy, types up and mails out a bill to the patient.
GENERAL REQUIREMENTS FOR CONVERSION

MCGH must decide how much more sophistication is desired in the area of out-patient billing, the method of writing off welfare accounts, etc.

As more information is learned regarding the PAL out-patient routines, we will be in a better position to discuss this area.
PART C: ACCOUNTS RECEIVABLE

OVERVIEW

The patient load at MCGH falls roughly into two categories:

a) Paying, or reimbursable, patients
b) Welfare patients (write-offs).

Therefore, there exists very little in the way of Accounts Receivable.

Even with the small volume of accounts receivable, credits must be matched up to specific accounts by hand. This will also present problems with the PAL package.

Medicare, especially Title XIX, will result in a much larger proportion of charges for services rendered to be reimbursable. It will, therefore, behoove MCGH to expand its A/R activities.

While specifics have not been discussed at the IHDA EDP coordinators meetings as yet, PAL output (and the resultant management control) should be far superior to that presently available.
PRESENT SYSTEM

1. IN-PATIENT ACCOUNTS RECEIVABLE

The balance card, created at the time of issuing the final bill following discharge, is merged into the in-patient accounts receivable file (approx. 3500 accounts as of 10/20/66). About once a month, cash receipts cards are merged with this A/R file. Also, charge-off cards from the Business Office are punched and merged in (these are primarily for the "06" - partial-pay financial category accounts). Since one individual may have several open accounts, this merging is done manually. Often the Tab Room has to refer back to the cash receipt source document to determine which account to credit.

Ledger copies only of updated receivable accounts are sent to the Business office where either (1) a new bill is typed and sent out or (2) a decision is made to initiate a write-off.

2. EMERGENCY ROOM ACCOUNTS RECEIVABLE

These are updated in much the same way as in-patient A/R. Again, this is done about once a month (there are about 10,000 open accounts as of 10/20/66).

3. CLINIC PATIENT ACCOUNTS RECEIVABLE

As "uncollectibles" are automatic, there are no accounts receivable for Clinic patients.
GENERAL REQUIREMENTS FOR CONVERSION

As in the area of out-patient billing, more information is required concerning the PAL package A/R routines, and MCGH must decide how much more sophistication is desired in this area.
PART C: RECOMMENDATIONS

While no large problems are foreseen, many small problems will be encountered during the conversion from ADP to EDP at MCGH.

These small problems fall roughly into two areas:

1. Those dealing with the general philosophy of operating the financial side of the institution, and
2. Specific detail problems associated with the conversion.

It is recommended that two committees be established to deal with these problem areas:

1) A high-level committee to set overall guidelines regarding financial philosophy, and
2) A working-level committee to deal with the ward clerk, admitting clerk, insurance clerk, keypunch type detail problems.

A great amount of interaction will be necessary between these two committees and the IHDA EDP coordinators committee while modifications to the PAL package are being discussed. The working-level committee should have as its ultimate objective the writing of detailed procedure manuals for all hospital personnel involved in PAL implementation.