Use of Optical Character Recognition in the Invoice Processing System of the Michigan Medicaid Program

Richard F. Burns

Western Michigan University

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USE OF OPTICAL CHARACTER RECOGNITION
IN THE INVOICE PROCESSING SYSTEM
OF THE MICHIGAN MEDICAID PROGRAM

by

Richard F. Burns

An Internship Paper
Submitted in
Partial fulfillment of the
Master of Public Administration Degree

Western Michigan University
Kalamazoo, Michigan
December, 1975
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I am also indebted to Bernard Higgins, Director of the Bureau of Medical Assistance - MDSS, for his interest, support, and encouragement while I worked on this paper.
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Western Michigan University, M.P.A., 1975
Computer Science

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SECTION I

INTRODUCTION, OVERVIEW, AND THE PROBLEM STATED

Introduction

I have chosen this particular internship subject for several reasons. First, I wanted to document an especially successful portion of a system which is nearly unique in state Medicaid program administration. Also, I believed there was a real need to offer a bibliography to the reader in an area remarkable by its paucity of literature useful to the public administrator. Lastly I wished to prepare and outline a text for a "User's Handbook," to be printed and issued to the many providers of medical service whose invoices are processed by page readers using Optical Scanning.

Overview

In October, 1966, Title XIX of the Social Security Act establishing the Medical Assistance Program became effective. Michigan's Medical Assistance Program was among the first of many state programs which were subsequently established. The Michigan Department of Social Services (MDSS) at that time had neither the expertise nor equipment and work force to assume the direction of a program of this magnitude. Accordingly the department contracted with Travelers Insurance company to handle long term care, and Blue Cross/Blue Shield became the intermediary for the substantive balance of the Medicaid Program. As was the case in many states the original Michigan Medicaid Program was developed in a very short time span and, as a consequence, it was not possible to completely preplan detailed implementation of systems and procedures. The original system, therefore, did not provide the MDSS directorate adequate administrative information with which to manage and control the program.
As a result of the above situation, in December 1969, the MDSS under the direction of the Executive Office and the Legislature, initiated a project to design and implement a revised Medicaid Management Program. Analysis of the existing system and definition and documentation of system requirements for a revised system were completed by mid-1970.¹ The last phase, implementation, of an improved system, began in August, 1970, and included selection of a fiscal agent to perform the claims processing function along with related activities. At this time the MDSS also assumed control of the Long Term Care system from Travelers. Its success in the direction of this system encouraged resolution of management deficiencies in the Medicaid payment and service system.

During the first and second quarters of 1971, proposals solicited from prospective fiscal agents were evaluated and compared for selection. These evaluations, in conjunction with an indication that substantial savings in administrative costs would be realized, demonstrated that it was both feasible and cost effective to assign the fiscal agent function to the State of Michigan.

Accordingly, a decision that the State would act as its own fiscal agent was made and the development of a State Medicaid System under the direction of the newly created Bureau of Medical Assistance, Michigan

¹This management information and control concept included the following eight subsystems: Client Information Systems (Recipient Eligibility), Provider Enrollment, Invoice Processing - (with which we are concerned here), Performance and Utilization, Federal Government Reporting, Cost Settlement and Auditing, Medicare Premium Processing, and Inquiry and Advisory Services. More recently additional subsystems have been added to make a total Management Information System. A brief description of each of these subsystems is included in section III of this paper.
Department of Social Services, was begun. Implementation of the pro-
gram and concurrent phase-out of Michigan Blue Cross/Blue Shield, who
had been acting as fiscal agent from the program's inception, began in
April, 1972, and was completed, with full assumption of responsibility
by the State and termination of Blue Cross/Blue Shield, in March, 1973.

A Definition of Need for Medicaid Administration

Through the present time, in the western world there are three
variants of methods of providing medical care for welfare clients or
for those who use or need medical security programs. These systems
are used totally, or in combination to provide care for sickness,
sickness prevention, and maternity. These methods of providing medical
care and reimbursement for providers of service and care are:

1. The patient selects a provider of medical service and then
pays for that service himself. The patient then submits the
paid bill to the government or an intermediary for reimburse-
ment.

2. The patient may select the provider of medical service and
the state makes direct payment to the provider for the
patient. The state does not own or operate the facilities
nor are the physicians or other providers of medical service
in the direct employment of the state. In some instances
the options open to the patient may be limited as some pro-
viders may not choose to participate in the program. Further,
quality and levels of care may also be limited. Reimburse-
ment may be for full cost or some major percentage of the
"going" fee schedule rate.

3. In this system the state owns and operates the medical
facilities and employs a staff for salary or wages. Ser-
vice is provided to all eligible persons. These eligibles
pay no fee other than their social insurance contributions.

Regardless of which of these systems is used there is a require-
ment for program administration as a complement to each of them. Huge
sums of money are involved in American health care and the Medicaid program in Michigan is no exception to this. Where such public expense is involved it is proper that the efficiency and perhaps ultimately the effectiveness of the program be studied.

**National Medicaid Program Costs**

Some definition of health costs for the United States and for Michigan is useful to the dimension of this paper and the following National Health Expenditure data is offered. In calendar year 1973 U.S. Health spending at the national level reached $99.1 billion and represented 7.7 percent of the GNP. Per capita expenditures amounted to $463.00. Consumer expenditures, including both direct payments and insurance benefits accounted for a 6.3 percent share of disposable personal income. The Medicaid program for 1973 at the national level caused an outlay of ten billion dollars for the Title XIX Program. What is interesting here is that this amount represents federal program match to state programs. In general the large population northern and western states receive a 50 percent federal match of state funds for their Medicaid programs. However many southern states (regarded as poverty prone or impoverished areas) may receive match on the order of 60 percent (Florida) to 83 percent (Mississippi).

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Michigan Medicaid Program Costs

Since its inception in 1966 the Michigan Medicaid program has grown by leaps and bounds. Let us take a look at program use and cost for the past two years. In calendar year 1974, the Medicaid program grew from annual expenditures of 436 million dollars to 571.5 million dollars. During this same time frame the number of recipients served by the program has grown approximately seven percent, from a total of 770,000 to slightly over 820,000 persons.

During the calendar year 1973, the Bureau of Medical Assistance received and processed 10,000,000 invoices representing over 21,000,000 claims. Payment for medical services during 1973 totaled $436,350,000. Since assuming the fiscal agent function, the State has processed 40 million invoices and made payments totaling $1,026,976,096.00.

For a breakout of claims by provider type and showing the amounts of reimbursement received see the circle graphs on the following page (Page 11).
Figure 1

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Background to the Problem

Consistent with the information pertaining to the initial implementa-
tion of the Title XIX, the following inadequacies of the Medicaid program
soon became apparent and continued to present difficulty through the time
of the changes described in this paper. These inadequacies were:

1. Lack of accurate and adequate information concerning many
   facets of the program including the claims processing system.

2. Lack of MDSS management control.

3. Rising program use and costs and the Department's inability to
   answer specifics pertaining to prediction and growth.

4. Client entry (registration) was slow and unsatisfactory. It
   often took 4 to 17 weeks to qualify a client as "up" on the
   paper system that provided the entry mechanism. (See the
   program/activity matrix that follows this section).

5. Increasingly the "case work" method of handling clients was
   proving cumbersome in handling small high volume/high turnover
   cases. The department simply was not staffed with caseworkers
   to handle the numbers of transactions which confronted the
   few medical assistance workers available to handle the "loads."
   (Annual worker turnover from resignations in some counties
   reached 40-60 percent.)

6. There was some feeling - with no way to know for sure - that
   third party liability and payment was not being fully and com-
   pletely pursued by the intermediaries acting for the department.

7. Empirical figures developed by the department and its systems
   consulting firm (Touche, Ross, Bailey and Smart) tended to
   indicate that invoice claims processing costs charged by inter-
   mediaries were high.

All of these inadequacies and problem indicators pointed to a
pressing need for overhaul of the existing system, or more properly the
lack of system.

4Touche, Ross, Bailey and Smart in a series of consultant evaluation
and work contracts provided the systems definition and direction to make
the substantive improvements which are described in this paper. See also
the three volume series, "Medicaid System Design Requirements," listed in
the bibliography. The management systems which eventually emerged from
this activity, those pertaining to medical assistance, are listed and
depicted in the last two pages of Section III.
General assessment of GA/PA/MA program activity is reflected in the following matrix:

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<th>PROGRAM</th>
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<td>Fair</td>
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<tr>
<td>CASE TERMINATION</td>
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</table>

* 4 to 17 weeks

Thus, need existed to greatly improve recipient eligibility processing and to also improve the invoice or claims processing system and both of these activities should provide management information that could be stripped off to satisfy reporting needs. Some notion of the complexity of documenting GA/PA/MA programs and their interface with each other may be obtained from examination of figure 2 which follows the problem statement.

The Problem Stated

To develop a Medicaid invoice (data) input method which is a cost/effective part of the total Medicaid Invoice Processing System and which

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provides the information to accommodate the following program characteristics:

1. Provide a means of payment for enrolled provider invoices.

2. Provide a method of establishing the eligibility and approving the invoices submitted for payment and editing these invoices for state and federal requirements for eligibility of services, providers, and recipients. This activity should include a third party liability and recovery process.

3. Provide a means of recording recipient and provider use of the program and from these records provide information for program management and reporting. This record keeping should provide for post payment surveillance and cost audit and rate setting.

4. Operate this system using standard accounting practice, and customary business controls and safeguards. Meet the control standards of regulatory agencies.

5. All of these characteristics should be done in a timely manner.
GENERATE MA CURRENT ELIGIBILITY TAPE

DEVELOPED CONTROL ON CLIENT PARTICIPATION RECORD COMPATIBLE TO EDP SYSTEM

PAY MA PROVIDERS, PRESENT STATE CLAIMS, AND PROVIDE CLAIMS TAPES

CONSTRUCT MA ELIGIBILITY TAPE

TRAVELERS INS. CO.
BLUE CROSS
BLUE SHIELD

CONSTRUCT MA HISTORICAL ELIGIBILITY FILE

CONSTRUCT MA UTILIZATION FILE FOR NURSING HOMES AND OTHER LONG TERM CARE

PROCESS CLAIMS TAPES RECONCILIATION EDIT

FEDERAL REPORT PROCESS

DEVELOP COMPREHENSIVE REPORT STR
PROVIDER, TYPE OF SERVICE, UTILIZATION AND PROCEDURES

OAA MASTER ACTIVE FILE
ADC MASTER ACTIVE FILE
AB MASTER ACTIVE FILE
AD MASTER ACTIVE FILE
MA MASTER ACTIVE FILE
UPDATE CHANGE TAPE

WIN CONTROLS/REPORT

MA POSTIVE/NEGATIVE QC

REPORTS AND CONTROLS ON OPENINGS, CLOSINGS, TRANSFERS

REASONS FOR OPENING
REASON FOR CLOSING

PA PAYROLL AND WARRANT GENERATION INTEGRATED PROCESS

GENERATION OF MA ELIGIBILITY CHANGE TAPE FOR INTERMEDIARIES

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MICHIGAN DEPARTMENT

COMPREHENSIVE CENTRAL CA

CONSTRUCT PROVIDER FILE

EST MA CONSTRUCTION FILE IS OTHER CARE

REPORT STRUCTURE BY LOCATION, UTILIZATION, DIAGNOSIS

IN PROCESS OF DEVELOPMENT

Administrative Payroll Voucher (Hand Updated)

Personnel Reports

Merit System Reports

Personnel Change Documents

time study and cost allocation process

Travel Expense Voucher and Payment Process

Other Administrative Expense Voucher Input

Generation of Accounting Reports by Expenditure Class and Program

MA Claims Payment File

PA Payment Summary

Consolidated and Integrated PAMA Process

Completed through Sept. 19, 1969

EDP Update/Inter

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<th>MA POSTIVE/NEGATIVE QC</th>
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**CHILD CARE AUTHORIZATION AND PAYMENT**

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<tr>
<td>216 STATE WARD CHILD FILE: ADOPTIVE</td>
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</table>

**OCTOBER 1, 1969**

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CONSOLIDATED AND INTEGRATED PAMA PROCESS

MA CLAIMS PAYMENT FILE
PA PAYMENT SUMMARY
PAMA

EDP SYSTEM FOR HOME NOTIFICATION
INTEGRATION OF BOARD AND CARE AND IN CONTROL-EDP CONTROLS
INTEGRATION OF PRE-EXCHANGE PROCESSES
INTEGRATION OF TOTAL AND REPORT PROCESS ADOPTIVE CONTROL

INTEGRATED ACTIVE/INACTIVE STATE WARD AND CHILD CARE FILES
A. HISTORICAL DATA FILE
B. HOME STUDY AND LICENSING CONTROL
C. FOSTER CARE AND CHILD CARE PAYMENT PROCESSES
D. ADOPTIVE PROCESS CONTROL
E. REVENUE CONTROLS

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PROBLEM RESOLUTION

Alternative Data Entry Methods for Invoice Processing

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<th>Method</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Manual/Batch (Using a large staff, standard office machinery, &amp; outside Serv.Bur.)</td>
<td>No advantage for this volume of invoices (40,000-60,000 per day). Some case might be made for employment of several hundred low/skill clerks.</td>
<td>Cumbersome, slow. Costly in terms of supervision, personnel wages and fringes. On-site location costly in terms of Foot² of office space required.</td>
</tr>
<tr>
<td>2. Key Punch/Key Tape</td>
<td>The department has a middle sized key tape shop and this could be the nucleus of a larger shop entering the invoices. Additional key punch/key tape equipment was readily available.</td>
<td>High error rate of operators or requirement to &quot;Verify&quot; by duplicate entry. Method adds an extra element of time - as claims must be transposed from medium to medium. Difficult in Lansing to obtain 2nd and 3rd shift operators - fear of mugging and assault. This medium requires trained operators.</td>
</tr>
<tr>
<td>3. Key Disc</td>
<td>Contemporary (1974-75) key disc equipment provides information editing and storage for essentially the same price as key/tape.</td>
<td>At the time this study was made key/disc was a relatively unknown quantity (Circa '71-72) and the equipment was not available.</td>
</tr>
<tr>
<td>4. Direct remote entry stations</td>
<td>Provider of service could enter data in format for service(s) directly to MDSS for payment processing. Reception of input could be buffered and stored for offhour processing, some scheduling advantage for around the clock computer use.</td>
<td>Cost of this method too high for all but high volume providers*. Not practical for those providers in the occasional service.</td>
</tr>
</tbody>
</table>

*Large hospitals and clinics. Providers in conglomerates or chains.
### Alternative Data Entry Methods for Invoice Processing (Continued)

<table>
<thead>
<tr>
<th>Method</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Optical Character Recognition</td>
<td>Direct capture of data from invoice w/ no transposition errors. Any typist can type and produce a finished claim form with just a few hours of orientation. The invoice billings can be produced in the providers' office either during or in addition to regular &quot;office hours.&quot; (Providers to receive quick [8-14 days] return on the submitted invoice.)</td>
<td>Requirement for &quot;Quality&quot; format-input. Input based on special forms design and mandatory typing of invoice forms. Some providers reluctant to type their forms. Some OCR machines require special type font. Initial equipment costs/rental is high. Expensive inventory of special forms. Some vendors did not live up to claims made for capability of machines - i.e., machine capability grossly misrepresented.</td>
</tr>
<tr>
<td>6. Tape to Tape Billing Transfers</td>
<td>A custom &quot;service bureau&quot; function for the provider who does not wish to generate his own invoices. Useful to large or small volume operations. Small volume pays for custom service done for him by someone else, and large volume may generate his own tapes.</td>
<td>De-centralized operation coming from on-site service locations to the place (locally) where tape is produced. This technology was not considered practical for state-adaption as it lacked central control/authority to make it practical. Also precise billing formats were not</td>
</tr>
<tr>
<td>7. Combinations &amp; variations of: Punched paper tape, Punched Cards, Mark Sense, Flexo-Writers, Teletype-Telegraphic machines.</td>
<td>These methods considered to be outmoded or not economical for this volume of invoices.</td>
<td>Known at the time of this study. These methods were not considered.</td>
</tr>
</tbody>
</table>
The Preferred Entry Methods of Processing

Evaluation and consideration of the several methods of data entry discussed on pages 16 and 17 soon narrowed the field to the following choices which appeared to be the most fruitful:

1. OCR - This appeared to be the answer. Some applications of OCR use were found (pharmacy billings and auto warranty claims) which approach the size and volume of claims we expected to process. These systems were not efficient - but the reasons for their inefficiency were patent administratively due to poor system design, bad typist, and inadequate rapport with persons using the system. Although the Medicaid billing system appears similar in principle to credit card/embossed card billing, this is not the case. This technique which is successful on an enormous scale for its limited purpose and billing activity is actually a low grade (quality) application of the real potential of the optical page reader. Credit card billings may only be "read" at the 60-65 percent level, while we expected to achieve an 80-90 percent read level for billings which cover a whole page - not just a small slip of card stock. It was apparent that we would have to convince our providers to give us quality input with their invoices. In turn we would honor and pay their billings in the shortest turnaround time in the health care world. Success in this area would further be premised on forms that were (really) easy to use, training seminars for billing clerks, manuals and InMats "hot" lines to answer questions, quality training aids, newsletters, and rapport with individual providers and their professional groups. The payoff would come through greatly lowered invoice processing costs.

2. To back up this system, KEY TAPE would be used. We had a key tape shop which was being successfully used and an enlargement of this activity would serve to accommodate the invoices not processed by OCR. Key Tape was the least expensive entry method that was more sophisticated than card entry. Even though it might involve mounting and dismounting many tapes for each entry "jet" this was the next best entry method.

(A) Lengthy and detailed studies were conducted of each of the entry methods - these included cost/benefit, systems evaluations against other hardware to be used in the system, and actual on-site visits to locations where such equipment was being used in similar applications. Also included as selection narrowed was testing and benchmarking equipment (against manufacturers' claims - often found to be grossly exaggerated) and using forms and data which represented actual examples of claims.

(B) This has since been upgraded to Key Disc. Larger storage content of the packs means less handling of gathered information and less chance of further error.
PREFERRED PROCESSING METHODS

Figure 3

Background Assumptions

Problem Definition

Constraints

Objectives

Detailed Analysis of the following methods: (Alternatives)

- Optical Character Readers/Page Processors
- Key/Disc
- Tape to Tape

Solution to the Problem: Adapt OCR, Key Tape, and Tape to Tape processing techniques for claims processing

Acceptable Solution A

Acceptable Solution B

Acceptable Solution C

Cost/benefit Analysis

Time Considerations

Evaluation and Comparison

Model

Comparisons

Comparisons
3. Tape to Tape. Early on it appeared that at least some of the bigger hospitals and chain activities either had their own large computers or that their volumes would warrant interface in this area. This proved to be the case. Some trouble occurs here with initial systems testing and getting new tape users up. Delivery of the tapes can be expensive or if low grade delivery systems are used tape damage through bad handling can occur resulting in substantial delays. Systems compatibility may have to be resolved through expensive custom programming or purchased "packages."

IMPLEMENTATION OF THE INVOICE PROCESSING SYSTEM

The Action Taken

The MDSS with its decision made to assume the entire Title XIX program in-house and to assume the function(s) contracted to intermediaries began to upgrade a major segment of its entire welfare system. The department was soon engaged in policy studies, systems studies, and a gigantic programming effort. This was accompanied by the definition of the need for a telecommunications network to replace its pilot Teletype and CRT system, and the acquisition of larger computer capacity and added peripheral equipment. Daily and weekly progress meetings were held as the master time-phase plan was executed phase by phase under the direction of the department's top management and some highly qualified consultants.

Naturally the implementation of the Invoice processing system was but one segment of this program. At the request of the Director of the Bureau of Medical Assistance a major system implementation schedule was developed and distributed throughout the MDSS. This added greatly to the perception of the progress of this undertaking at all levels of participation. A correct and important decision made early in conjunction with this project was to phase-in the invoice processing of the newly enrolled providers. As each provider type entered the new payment
system problems (often unanticipated) peculiar to that group became apparent and were resolved. Without this spaced phasing, the bureau would have been inundated with problems but by spacing them out they could be resolved in an orderly manner. (See the bottom of figure 4.)

Design of billing forms suited to the program was a major forms design and systems effort. There was little precedent for the format and design of these forms - particularly in respect to the volume, size, and complexity of the intended Medicaid use. This was followed by programming to accommodate the forms. (See Section III of this paper for examples.)

**Volumes Processed by OCR**

Early in the implementation about 65 percent of the provider invoices received were processed by OCR. The balance was entered by key tape. As the system, its equipment, and staff became fine-tuned and more proficient the benefits of our commitment to OCR really began to pay off. (For processing technique by percentage of volume see figure 5.)

**Summary**

The following summary points are offered as a conclusion to Section I of this paper:

1. The Invoice Processing System using OCR data entry was an enormous success. Claim lines are processed for 39¢, Invoices - which average about 2.1 claim lines per page - are processed for 87¢ each. This is a uniquely cost/effective system setting a standard for the nation.

2. The successful initiation of such a system is utterly dependent upon a well planned conversion effort. Each step and phase must be carefully laid out and executed. Resources must be generated and/or exist to do it.

3. A successful effort depends heavily on the quality of OCR forms, their design, and the cooperation of the providers who prepare the forms for data entry. (See also page 39, Section III.)
85-90% of all invoices (paper format claims) received are processed for payment by OCR.

15% of all claims received are processed by the tape to tape method.

10-15% of all invoices (paper format claims) are processed by Key Disc.

Figure 5
BIBLIOGRAPHY

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Pamphlets, Papers, and Reports


Books


Systems, Studies, and Manuals


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Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
This OCR USER'S HANDBOOK has been written and distributed to you to help you produce error free invoices that can be read on our Optical Page Readers. There are many OCR machines used in Michigan to process information for use in government and the business world, and through the efficient use of such machinery the cost of government and consumerism is lowered.

Claims for provider services rendered to clients of the Michigan Medicaid programs are handled in one of two ways. Major hospitals, clinics and drug chains may choose to summarize their computer billings on magnetic tape and bill the Bureau of Medical Assistance (BuMA) directly. This method is referred to as "Tape to Tape" billing. About 15 percent of all provider claims are handled in this fashion. The other method is to summarize services provided on a billing form and to have that bill processed by the bureau by data entry and edit. (See figure 5 and figure 8 of this paper.) Presently BuMA has two OCR machines to process the 40,000 to 60,000 invoice forms that are received each work day. To encourage quality input of typed invoices which can be efficiently and quickly processed by OCR the BuMA processes and pays these invoices in 8 - 15 days. This turnaround time has reduced the money "float" of providers and set a new standard for payment of medical claims throughout Michigan and the nation.

This philosophy is reflected in the following Figure. A payment envelope insert.

OUR GOAL IS

PROMPT PAYMENT !!

1. YOU HAVE HELPED US TO PROMPTLY PAY YOUR CLAIM BY SUBMITTING AN INVOICE WHICH WAS CORRECTLY TYPED AND FREE OF ERRORS DETECTABLE BY OUR EDIT SYSTEM.
2. THIS RAPID PAYMENT HAS HELPED TO DECREASE YOUR CAPITAL "FLOAT" THAT IS TIED UP IN A DEFERRED PAYMENT PROCESS OF 30 TO 120 DAYS.
3. THIS CLAIM WAS PAID IN 10 WORKING DAYS, OR LESS.
4. YOUR COOPERATION IS GREATLY APPRECIATED BY THE BUREAU OF MEDICAL ASSISTANCE, MICHIGAN DEPARTMENT OF SOCIAL SERVICES.
To help you understand our Invoice Processing System and the way that your invoices are received, recorded, and paid, the following (words and picture text) — overview of our system is — (offered). (1)

**CLOSE UP SHOT**

**Illustration #1**

A pharmacy form with pre-printed header, identifying the provider pharmacy and giving the provider enrollment number.

Clerk typing an invoice using a Claims form and with a provider manual laid out which summarizes required invoice content for billing.

**Illustration #2**

(A FAN OF)

Pre-printed pre-addressed envelopes - which are given to the provider to "mail in" his billings.

After the invoices are typed they are mailed to the Bureau of Medical Assistance in sturdy brown kraft envelopes to protect them in transit.

---

(1) **NOTE:** Three pages of illustration and text follow giving a "birdseye view" of the people, machinery, and system that processes paper invoices. The illustrations are large black and white, screened photographs accompanied by a text which amplifies and repeats the picture content. The photo's will be taken in-house and show actual forms processing. Stills provided by various equipment manufacturers have been found to be too static and product oriented to achieve the rapport that is intended for this publication. Photographs will be about 2" x 3" or 3" x 5½" in size depending on the final format of the booklet. Actual booklet size will be 8" x 5½" or 8½" x 11". Text and illustration will run 12 to 16 pages and cover stock will be 80 to 100 pound paper. Both front and back cover on both sides can accommodate text and illustration.)

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Clerks at the Bureau of Medical Assistance open envelopes and inspect forms for certifying signature.

Vibrator which aligns edges of forms for feeding into the numbering device which prints a Claim Reference Number on the form, the forms are then aligned again for microfilming, and then finally for the run through the OCR machine.

Offset printing machine with numbering head which prints a "Claim Reference Number" on each form. INSET. Example of a Claim Reference Number on a form and how it is broken out for accessibility by year, Julian date, and daily sequence.

Kodak Microfilmer, these machines are used to film 50,000 to 80,000 invoices per day. Microfilm is then stored for access for seven years, a second copy is kept in a separate vault location against the possibility of fire.
REI "Input 80" Optical Page Reader. Michigan has two of these machines in its Health and Welfare Data Center.

"Input 80" front view. The feed bin has 2800 forms in place ready to be read.

Side view of the Input 80 showing (from left to right) reject bin, pend bin and accepted bin. Most forms are rejected because they may have been inserted in the machine upside down or that they may have been typed with a script type font. The pend bin represents forms that in some way have missing information of strikeovers which the machine can't read.

The OCR machine prints out an error listing which shows why certain invoices have "pended." Typical reasons for this are missing information which for some reason has been left off the form, or simple typing errors which are inconsistent with reading instructions for the machine.
Re-Entry form for pended documents. This error correction and re-entry system involves "spotting" simple errors as listed on the printout and then typing in the correct information.

Pended Claims Section. Here experienced clerks review pended claims which may contain more complex errors or billings which are inappropriate and resolve the error which can then be corrected by on-line data entry.

Clerk corrects an error in the on-line file which is accessed and corrected by means of this Video Data Terminal. When the invoice error is corrected and shown correctly on the VDT screen the operator pushes a transmit button and the bill is released for payment in the current billing cycle.

NOTE: Two additional illustrations and an approved typewriter ribbon/tape list follow at the end of Section II.
Now that you have had a look at our system - the following suggestions are offered to you - to help you prepare invoices which will be read by the OCR machine without errors or omissions.

1. Utilize the alignment boxes (pica, elite) at the top of your invoices. This will assure that your typed characters will be within the data field spaces on the form.

2. Change the typewriter ribbon as needed. Characters must be bold and distinct. Light characters are misread or omitted. NOTE: Use OCR quality BLACK ribbon only. (See approved ribbon list.)

3. Clean your typewriter each time you type a batch of invoices, especially the type characters or type ball. Dirty type results in closure (8 6 0 5 3), fuzzy characters (7 5 6), uneven density (8 7 5), the result is misreading (6 read as 8, 8 read as 6, etc.) or dropping of the characters. In either case, you are paid incorrectly or not at all.

4. Be sure that your characters are typed on the same horizontal plane. Uneven characters (CHARACTERS), result in misreading or dropping of characters.

5. Do not type over characters. Corrections can be made by smoothly and evenly applying correction fluid. Lines with errors can be deleted by typing capital X's in the deletion boxes at the right of the invoice.

6. Though we read a wide variety of typewriter fonts, we cannot read script or italics. Fonts proportionately pitched are not read by the system.

7. Complete all mandatory data fields. Unused fields are to be left BLANK. Be sure to sign your invoices. A signature or signature stamp is required. Always check to see that the Provider Type (Box #3) and the Provider ID # (Box #4) is correct.

8. When you mail your invoices, allow for the weight of paper clips and attachments. The postage guide on the back of your envelope is for invoices only. It should be noted that mail deliveries in Michigan vary between one day and five days. Always show a return address on the envelope.
### APPROVED TYPEWRITER RIBBONS

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Trade Identification</th>
<th>Base Material</th>
<th>Color</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burroughs Corp.</td>
<td>Nu-Kote 02-0113-254</td>
<td>Polyethylene</td>
<td>Black</td>
<td>One-time</td>
</tr>
<tr>
<td></td>
<td>Nu-Kote 02-5110-263</td>
<td>Polyethylene</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td></td>
<td>Bellaire 02-5110-651</td>
<td>Polyethylene</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td>Carter's Ink Company</td>
<td>- 30-882</td>
<td>Mylar (Film)</td>
<td>Black</td>
<td>One-time</td>
</tr>
<tr>
<td></td>
<td>- V82</td>
<td>Nylon (Woven)</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td>Columbia Ribbon &amp; Carbon Co.</td>
<td>Colitho Offset #52</td>
<td>Mylar (Film)</td>
<td>Black</td>
<td>One-time</td>
</tr>
<tr>
<td></td>
<td>Colitho Offset #53</td>
<td>Nylon (Woven)</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td>IBM</td>
<td>&quot;Selectric&quot; 3121(recorder Polyethylene Black One-time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OCR Film no. 1136310 (Film)</td>
<td>Polyethylene</td>
<td>Black</td>
<td>One-time</td>
</tr>
<tr>
<td></td>
<td>Film 5121(recorder Mylar (Film) Black One-time</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Ribbon no. 1010760</td>
<td>Mylar (Film)</td>
<td>Black</td>
<td>One-time</td>
</tr>
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<td></td>
<td>General Purpose 1136138</td>
<td>Nylon (Woven)</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td>Roytype (Div. Park of Litton Lane Business Systems Inc.)</td>
<td>7028</td>
<td>Nylon (Film)</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td></td>
<td>1-X-45</td>
<td>Polyethylene</td>
<td>Black</td>
<td>Reusable</td>
</tr>
<tr>
<td></td>
<td>P-900</td>
<td>Polyethylene</td>
<td>Black</td>
<td>One-time</td>
</tr>
</tbody>
</table>

### RIBBONS FOR (SERVICE BUREAU) LINE PRINTER EQUIPMENT

The following is a partial list of OCR quality line printer ribbons:

- Columbia Mylar SS Super Intense #3324-9900
- IBM #457937
- Underwood Olivetti Black Nylon #S-N76119 (674-715HM)
- Keelox Black OCR

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MEDICAL ASSISTANCE PAYMENT CYCLE

Figure 7

Begin provider payment cycle (daily - weekly)
Schematic of OCR Page Processor showing concept of Invoice feed, handling, stacking, and options for data output

- Output Options Of:
  - Computer
  - Punched Cards
  - Magnetic Tape
  - Punched Paper Tape
  - Transmission

- Documents directed to any of three bins under program control direction

- Invoice Hopper
- Alignment Check & Read Station
- Stacker Wheels
  - Reject
  - Pend
  - Accept
- Hold Pocket
- Output Options Of:
  - Computer
  - Punched Cards
  - Magnetic Tape
  - Punched Paper Tape
  - Transmission

- Light Source
- Vacuum Feed Station
- Pinch Feed Rollers
- Oscillating Mirrors
- Transport Belt
- Mini-Computer Storage Magnetic Tape
SECTION III
**Exhibits, Exemplars, and Addenda**

Two major important components of the Invoice Processing System are the forms that are used to enter data and the data processing system which generates the end products of payment and management information. It is for the purpose of taking the reader into these two areas that this section is offered.

A single form use is considered here, that of In Patient and Out Patient Hospital Billing. This form is typical in that over the 3½ year period of its (Medicaid Provider) use, considerations and proposed changes on the national scene have caused the development of a summary billing form to be used for both of these purposes. On the national level the American Hospital Association has developed a prototype form (the UB-16) which does not presently serve the range of billing needs for all carriers and hospital use. Accordingly under the aegis of the five Michigan chapters of the Hospital Financial Management Association the Michigan Universal Hospital Billing Form (MUH-3) was designed and is to be put to field test in January of 1976. Examples of this activity are presented on the following pages.

A listing of some of the Medicaid program descriptions and flow charts of daily and weekly processing are offered on pages 50, and 56, respectively.

Program support characteristics as a conceptual "figure" and a very brief description of the components of the Medicaid Management Information System are given on pages 64 and 65.

---

1 The Uniform Billing Committee of the Coordinating Council of the Five Michigan Chapters of the Hospital Financial Management Association, was comprised of the following members: Co-Chairmen; Jerry Davison, Michigan Blue Cross and John Kelly, Patient Financial Manager, St. John Hospital. Members; Clayton Benjamin, Michigan Blue Shield, Brian Boyle, New England Life - Health Insurance Association of America, Robert Kitzman, Henry Ford Hospital, Guy Laprad, University Hospital, George Norris, W. A. Foote Memorial Hospital, Thelma Plotkin, Michigan Blue Cross, Clifford Kabacinski, Bon Secour Hospital, Shirley Smerley, Memorial Hospital of Mason County, Paul Spindler, Michigan Blue Cross, Richard Thomas, Tolfree Memorial Hospital and Richard F. Burns of the Bureau of Medical Assistance (Medicaid).
**Michigan Uniform Hospital Billing Notice**

<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Grace Hospital-Central</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Case No.</td>
<td>111305</td>
</tr>
<tr>
<td>Patient's Last Name</td>
<td>Curry Josie</td>
</tr>
<tr>
<td>Patient's Initials</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>M</td>
</tr>
<tr>
<td>Birthdate</td>
<td>01/13/76</td>
</tr>
<tr>
<td>Guarantor's Name</td>
<td></td>
</tr>
<tr>
<td>Primary Carrier Name</td>
<td></td>
</tr>
<tr>
<td>Secondary Carrier Name</td>
<td></td>
</tr>
<tr>
<td>GUARANTOR'S SOCIAL SEC</td>
<td>000-00-0000</td>
</tr>
<tr>
<td>PRIMARY ADMITTING DIAG</td>
<td>Gangrene Left Great Toe</td>
</tr>
<tr>
<td>PRIMARY SURGICAL PROCEDURE</td>
<td>Amputation LT Great Toe</td>
</tr>
<tr>
<td>SECONDARY DISCHARGE DIAG</td>
<td>Diabetes Mellitus</td>
</tr>
<tr>
<td>AMOUNT BILLED</td>
<td>66,777.30</td>
</tr>
</tbody>
</table>

### Details:

- **Patient's Name**: Curry Josie
- **Guarantor's Name**: (Blank)
- **Primary Carrier Name**: (Blank)
- **Secondary Carrier Name**: (Blank)
- **Guarantor's Social Security Number**: 000-00-0000
- **Primary Admitting Diagnosis**: Gangrene Left Great Toe
- **Primary Surgical Procedure**: Amputation LT Great Toe
- **Primary Discharge Diagnosis**: Gangrene Left Great Toe
- **Secondary Surgical Procedure**: Below Knee Amputa LT Leg

### Service Statement:

<table>
<thead>
<tr>
<th>Service</th>
<th>Rate</th>
<th>Units</th>
<th>Covered</th>
<th>Non-Covered</th>
<th>Average S/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tran Serv</td>
<td>59115</td>
<td>35</td>
<td>38,500</td>
<td>59008</td>
<td>4000</td>
</tr>
</tbody>
</table>

### Charges:

<table>
<thead>
<tr>
<th>Service</th>
<th>Rate</th>
<th>Units</th>
<th>Covered</th>
<th>Non-Covered</th>
<th>Average S/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tran Serv</td>
<td>59115</td>
<td>35</td>
<td>38,500</td>
<td>59008</td>
<td>4000</td>
</tr>
</tbody>
</table>

### Total Charges:

- **Total Amount Billed**: 66,777.30
- **Patient Pay Amount**: 66,777.30

**Design Draft July 17, 1975**

This space which will be blank is intended for the individual carrier's use.

**Plan Example A**

**Medicare Only**

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**CODES and CERTIFICATIONS**

**BLUE/CROSS and OTHER CLAIMS**

**MEDICARE CLAIMS**
Patient's Certification, Authorization to Release Information, and Payment Request. I certify that the information given by me in applying for payment under Title XVIII of the Social Security Act is correct. I authorize any holder of medical or other information about me to release to the Social Security Administration or its intermediaries or carriers any information needed for this or a related Medicare claim. I request that payment of authorized benefits be made on my behalf.

**SIGNATURE X**

(Patient or authorized representative)

**DATE:**

**SIGNATURE OF PROVIDER REPRESENTATIVE X**

**MEDICAID CERTIFICATION**
This is to certify that the information on the reverse side is true, accurate, and complete. I understand that payment and satisfaction of this claim will be from Federal and State funds, and that any false claims, statements, or documents, or concealment of a material fact, may be prosecuted under applicable Federal or State laws.

**PROVIDER'S SIGNATURE X**
**MICHIGAN UNIFORM HOSPITAL BILLING NOTICE**

**Hospital Name:** BUTTERWORTH HOSPITAL  
**City:**  
**State:** MI  
**Zip:** 282303  
**Patient's Last Name:** BRADY TERRY  
**First Name:** L  
**Date of Birth:** 030455

**Guarantor's Name:** ANDERSON MD  
**Address:**  
**City:**  
**State:** MI  
**Zip:** 112831  
**ID Number:** 13881289  
**Primary Carrier:**  
**Secondary Carrier:**  
**Guarantor's Name:**  
**Address:**  
**City:**  
**State:** MI  
**Zip:**  
**ID Number:**  

**Primary Admitting Diagnosis:** WRIST INJ  
**Code:** 8419  
**Discharge Diagnosis:**  
**Code:**  
**Primary Surgical Procedure:**  
**Code:**  
**Secondary Surgical Procedure:**  
**Code:**  

**Surgeon's ID Number:**  
**Anesthesiologist's ID Number:**  
**Consultant's ID Number:**  
**Number of Days Covered:** 0  
**Number of Covered Days:** 0  
**Number of Covered Charges:** 0  
**Days Covered:** 0  
**Total Days Covered:** 0  
**Days Billed:** 0  
**Total Days Billed:** 0  
**Days Exempted:** 0  
**Total Days Exempted:** 0  
**Payment Received:**  
**Total Payment Received:** 26176  
**Date of Payment:**  
**Total Payment On Hand:** 26176  
**Type:**  

**Service Rate Units Covered:**  
**Non-Covered Service Rate Units Covered:**  
**Service Rate Covered:**  
**Non-Covered Service Rate:**  
**Equipment Covered:**  
**Non-Covered Equipment:**  
**Deductible:**  
**CO Insurance:**  
**Pt. Amount:**  
**Total Net:**  
**To Delete A Line Containing Errors:**  

**Statement of Covered Medical Services:**  

**EMERGENCY TREATMENT:**  
**Code:** 69032  
**Date:** 0427  
**Hours:** 1  
**Unit:** 1500  
**Cost:** 1500  

**PHARMACY:**  
**Code:** 69010  
**Date:** 0427  
**Hours:** 1  
**Unit:** 24601  
**Cost:** 24601  

**SOLUTION & SUPPLY:**  
**Code:** 69011  
**Date:** 0427  
**Hours:** 1  
**Unit:** 75  
**Cost:** 75  

**Remarks:**  
NAME OF DRUG IS ANTI-HEMOPHILIC FACTOR.  
AMOUNT AND STRENGTH OF DRUG IS 1000 UNITS. NAME OF DRUG COMPANY IS ARMOUR.

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**CODES and CERTIFICATIONS**

**BLUE/CROSS and OTHER CLAIMS**

**PROVIDER'S SIGNATURE X**

**MEDICARE CLAIMS**
Patient's Certification, Authorization to Release Information, and Payment Request. I certify that the information given by me in applying for payment under Title XVIII of the Social Security Act is correct. I authorize any holder of medical or other information about me to release to the Social Security Administration or its intermediaries or carriers any information needed for this or a related Medicare claim. I request that payment of authorized benefits be made on my behalf.

**SIGNATURE X** ________________________________ **DATE:** ______________

(Patient or authorized representative) (Signature by mark must be witnessed)

**SIGNATURE OF PROVIDER REPRESENTATIVE X**

**MEDICAID CERTIFICATION**
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**PROVIDER'S SIGNATURE X**

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**NOTE:** The space on this Design Part will be used for Hospital Bed and Other Social Costs.

**Subject Procedure Codes**

**Diagnosis Codes**

**Other Insurance Code**

**Referral Code**

**Medicare Claims Code**

**Resource Code**

**Error Code**

**Error Code**

**Other Code**

**Procedure Code**

**Box Number**

**CODES TO BE USED WHEN COMPLETING THIS FORM FOR MEDICAID PAYMENT**
MICHIGAN UNIFORM HOSPITAL BILLING NOTICE

FLOUM PORTION A

HOSPITAL NAME
St. Christophers

CITY
Detroit

STATE
MI

ZIP
48226

HOSPITAL CASE NO.
HC-239

PATIENT'S LAST NAME
Dawn

FIRST NAME
Sarah

SEX
F

BIRTH DATE
12/18/21

GUARANTOR'S NAME
Dawn John

PATIENT'S PHYSICIAN
Frank R. White

REMARKS
1A-INS 144 @ $2.25

TOTALS
1826.85

TOTAL NET PT. PAY AMOUNT
1766.00

MEDICARE CLAIM
365036429

MEDICARE CVR
180080563260

MEDICARE CARRIER
St. Christophers

MEDICARE CARRIER NUM
923-54-050175

MEDICARE CARRIER ID
230000

MEDICARE CARRIER PHYS ACT
11

MEDICARE CARRIER CPT
3

MEDICARE CARRIER TOTAL PERIOD
1826.85

MEDICARE PAYMENT AMOUNT
1766.00

MEDICARE TOTAL AMOUNT
1826.85

MEDICARE TOTAL AMOUNT
1766.00

MEDICARE AMOUNT COVERED BY INSURANCE
1766.00

MEDICARE AMOUNT NOT COVERED
60.85

MEDICARE AMOUNT DEDUCTIBLE
60.85

MEDICARE AMOUNT CO-INSURANCE
60.85

MEDICARE AMOUNT AMT. BILLED
60.85

REMARKS
1A-INS 144 @ $2.25

TOTALS
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TOTAL NET PT. PAY AMOUNT
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60.85

MEDICARE AMOUNT CO-INSURANCE
60.85

MEDICARE AMOUNT AMT. BILLED
60.85

REMARKS
1A-INS 144 @ $2.25
PROVIDER'S SIGNATURE X

MEDICARE CLAIMS
Patient's Certification, Authorization to Release Information, and Payment Request. I certify that the information given by me in applying for payment under Title XVIII of the Social Security Act is correct. I authorize any holder of medical or other information about me to release to the Social Security Administration or its intermediaries or carriers any information needed for this or a related Medicare claim. I request that payment of authorized benefits be made on my behalf.

SIGNATURE X DATE:
(Patient or authorized representative) (Signature by mark must be witnessed)

SIGNATURE OF PROVIDER REPRESENTATIVE X

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PROVIDER'S SIGNATURE X

CODEx and CERTIFICATIONS

BLUE/CROSS and OTHER CLAIMS
**MICHIGAN UNIFORM HOSPITAL BILLING NOTICE**

**HOSPITAL NAME**
Glenmount General

**PATIENT'S LAST NAME**
Crowell

**SEX**
F

**BIRTHDATE**
06/27/75

**PATIENT'S PHYSICIAN**
W. G. Barnes

**GREEN TELEPHONE NUMBER**

**HOSPITAL CASE NO.**
62-H171

**PATIENT'S ID NO.**
000046

**NAME OF POLICYHOLDER**
Crowell Walter

**CITY**
Detroit

**STATE**
MI

**ZIP**
18206

**PRIMARY CARRIER**

**SECONDARY CARRIER**

**REIMB. TO**
GLH

**RELSHP ST. ADDRESS**
811 S. Edgeworth

**STATE ZIP**
MI 18231

**STREET ADDRESS**

**SERVICE RATE UNITS COVERED**

<table>
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<tr>
<th>SERVICE</th>
<th>RATE</th>
<th>UNITS</th>
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<th>NON-COVERED</th>
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**DESCRIPTION/PROCEDURE**

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**REMARKS:**

**TOTALS**
45.20

**REMARKS:**

**DESIGN DRAFT JULY 17, 1975**

This space which will be blank is intended for the individual carrier's use.

**DRAFT EXAMPLE D**

**GLENWOOD GENERAL**

**PATIENT'S LAST NAME**
Edgeworth

**SEX**
F

**BIRTHDATE**
06/27/75

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45.20

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<td>(Patient or authorized representative)</td>
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<td>071</td>
<td>Lab service for other tests</td>
</tr>
<tr>
<td>072</td>
<td>Lab service for other tests</td>
</tr>
<tr>
<td>073</td>
<td>Lab service for other tests</td>
</tr>
</tbody>
</table>
**MICHIGAN UNIFORM HOSPITAL BILLING NOTICE**

**General Hospital**

**CITY**

**STATE**

**ZIP**

**HOSPITAL CASE NO.**

**724613**

**DEPARTMENT**

**MEDICAID MEDICARE OTHER**

**TYPE**

**LOC/NSP CO**

**ID NUMBER**

**230000**

**PATIENT'S ID NO.**

**R. C. Blake**

**SEX**

**L**

**BIRTHDATE**

**080375**

**NAME OF PATIENT**

**Janet L Adams**

**ADDRESS**

**8221 Martin Road**

**CITY**

**Detroit**

**STATE**

**MI**

**ZIP**

**48203**

**HOSPITAL CASE NO.**

**724613**

**DATE PREPARED**

**09 080373**

**PAYER**

**MEDICAID MEDICARE OTHER**

**NAME OF POLICYHOLDER**

**357019615**

**NAME OF POLICYHOLDER**

**87008**

**NAME OF EMPLOYER**

**357019615**

**ADMISSION DATE**

**080375**

**RELATION**

**081975**

**SURGERY DATE**

**081975**

**HOURS OF SERVICE**

**13**

**NUMBER OF DAYS**

**16**

**SERVICE DATE**

**19**

**UNITS COVERED**

**1,200.00**

**DESCRIPTION/PROCEDURE**

**19A**

**19C**

**19T**

**19R**

**19E**

**19M**

**19L**

**Blood Administration**

**Pharmacy**

**Laboratory**

**Med. Surg. & Cent Sup.**

**EXG**

**Guest Meals**

**Dayroom**

**Nursing**

**Emergency**

**Lab**

**Med. Surg.**

**Custodian**

**Total**

**238.00**

**Deduction**

**6.00**

**Total Net**

**232.00**

**Amount Billed**

**72.00**

**Remarks**

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**CODES and CERTIFICATIONS**

**BLUE/CROSS and OTHER CLAIMS**

**MEDICARE CLAIMS**

Patient's Certification, Authorization to Release Information, and Payment Request. I certify that the information given by me in applying for payment under Title XVIII of the Social Security Act is correct. I authorize any holder of medical or other information about me to release it to the Social Security Administration or its intermediaries or carriers any information needed for this or a related Medicare claim. I request that payment of authorized benefits be made on my behalf.

**SIGNATURE X**

(Patient or authorized representative)

**DATE:** __________________

**SIGNATURE OF PROVIDER REPRESENTATIVE X**

**MEDICAID CERTIFICATION**

This is to certify that the information on the reverse side is true, accurate, and complete. I understand that payment and satisfaction of this claim will be from Federal and State funds, and that any false claims, statements, or documents, or concealment of a material fact, may be prosecuted under applicable Federal or State laws.

**PROVIDER'S SIGNATURE X**

<table>
<thead>
<tr>
<th>Procedure Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1060</td>
<td>Laboratory</td>
</tr>
<tr>
<td>1061</td>
<td>Pathology</td>
</tr>
<tr>
<td>1062</td>
<td>Pathology (Other)</td>
</tr>
<tr>
<td>1063</td>
<td>Inpatient Therapy</td>
</tr>
<tr>
<td>1064</td>
<td>Ambulance</td>
</tr>
<tr>
<td>1065</td>
<td>Home Health Service</td>
</tr>
<tr>
<td>1066</td>
<td>Outpatient Room</td>
</tr>
<tr>
<td>1067</td>
<td>Operating Room</td>
</tr>
<tr>
<td>1068</td>
<td>Surgery</td>
</tr>
<tr>
<td>1069</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>1070</td>
<td>Radiology</td>
</tr>
<tr>
<td>1071</td>
<td>Biofeed not Required</td>
</tr>
<tr>
<td>1072</td>
<td>Nursing Service</td>
</tr>
<tr>
<td>1073</td>
<td>Dietary Care</td>
</tr>
<tr>
<td>1074</td>
<td>Caring for a Person who is Debilitated or Frail</td>
</tr>
<tr>
<td>1075</td>
<td>Caring for a Person who is Deaf/Auditory Impaired</td>
</tr>
<tr>
<td>1076</td>
<td>Caring for a Person who is Blind/Sight Impaired</td>
</tr>
<tr>
<td>1077</td>
<td>Caring for a Person who is Bedridden</td>
</tr>
<tr>
<td>1078</td>
<td>Caring for a Person who is Chronically Ill</td>
</tr>
<tr>
<td>1079</td>
<td>Caring for a Person who is Dying</td>
</tr>
<tr>
<td>1080</td>
<td>Caring for a Person who is Emotionally Impaired</td>
</tr>
<tr>
<td>1081</td>
<td>Caring for a Person who is Mentally Retarded</td>
</tr>
<tr>
<td>1082</td>
<td>Caring for a Person who is Physically Impaired</td>
</tr>
<tr>
<td>1083</td>
<td>Caring for a Person who is Physically Disabled</td>
</tr>
</tbody>
</table>

**NOTE:** This service on the design of the bill will be used for hospital and other special care.
# Michigan Uniform Hospital Billing Notice

**Hospital Name:** City Hospital  
**Hospital Case No.:** MH697  
**City:** Detroit  
**State:** MI  
**Zip Code:** 48208  
**Patient Name:** William Green  
**Sex:** M  
**Birthdate:** 06/09/75  
**Guarantor's Name:**  
**Primary Carrier Name:**  
**Primary Policy Number:** 230000  
**Secondary Carrier Name:**  
**Secondary Policy Number:**  
**Hospital Address:** 213 Main St, Detroit, MI 48213  
**Patient ID NO:** 090175  
**Date of Accident:** 09/01/75  
**Name of Employer:**  
**Date of Accident:** 09/01/75  
**Primary Admitting Diagnosis:** Laceration of Scalp  
**Primary Surgical Procedure:** Sutured Lac. 1 1/4"  
**Primary Discharge Diagnosis:** Laceration of Scalp  

## Service Statement

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Code</th>
<th>Rate</th>
<th>Units Covered</th>
<th>Non-Covered</th>
<th>Service</th>
<th>Rate</th>
<th>Units Covered</th>
<th>Non-Covered</th>
<th>Avg. Sa</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Room</td>
<td>15B</td>
<td>25.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68.00</td>
</tr>
<tr>
<td>Laboratory</td>
<td>15C</td>
<td>10.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiology</td>
<td>15D</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td>15E</td>
<td>8.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dressing</td>
<td>15I</td>
<td>10.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Covered:** 68.00  
**Total Net:** 60.00  
**CO Insurance:**  
**Deductible:**  
**Ant.Billed:**  

---

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CODES and CERTIFICATIONS
BLUE/CROSS and OTHER CLAIMS

MEDICARE CLAIMS
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SIGNATURE X __________________________ DATE: ______________
(Patient or authorized representative) (Signature by mark must be witnessed)

SIGNATURE OF PROVIDER REPRESENTATIVE X __________________________

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MEDICAL CODES

---

A table showing medical codes and their meanings is present in the image. The table includes codes for various medical conditions and services, such as 'Laboratory', 'Diagnosis', 'Referral', 'Resource', and more. Each code has a description or a category it belongs to, such as 'Laboratory', 'Diagnosis', 'Referral', 'Resource', and more.
**MICHERI UNIFORM HOSPITAL BILLING NOTICE**

**WARD**

**MICHIGAN MEDICARE**

**OTHER**

**HOSPITAL NAME**

**MERCY HOSPITAL**

**CITY**

**Jackson**

**STATE**

**MI**

**ZIP**

**49201**

<table>
<thead>
<tr>
<th>SERVICE NO.</th>
<th>DESCRIPTION</th>
<th>CODE</th>
<th>RATE</th>
<th>UNITS</th>
<th>COVERED</th>
<th>NON-COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>49000</td>
<td>OPERATING RM.</td>
<td>49012</td>
<td>75.00</td>
<td>1</td>
<td>130.00</td>
<td>0</td>
</tr>
<tr>
<td>49005</td>
<td>LABORATORY</td>
<td>49017</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>362.50</td>
</tr>
<tr>
<td>49014</td>
<td>RADIATION</td>
<td>49016</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>85.00</td>
</tr>
<tr>
<td>49018</td>
<td>ANESTHESIA SUPPLY</td>
<td>49014</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>147.50</td>
</tr>
<tr>
<td>49019</td>
<td>CENTRAL SOLUTIONS</td>
<td>49018</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>263.95</td>
</tr>
<tr>
<td>49020</td>
<td>SURGICAL SUPPLIES</td>
<td>49011</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>438.50</td>
</tr>
<tr>
<td>49021</td>
<td>INHALATION THERAPY</td>
<td>49015</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>282.75</td>
</tr>
<tr>
<td>49022</td>
<td>TELEPHONE</td>
<td>49030</td>
<td>120.00</td>
<td>3</td>
<td>1</td>
<td>4.00</td>
</tr>
</tbody>
</table>

**TOTALS**

| NET PATIENT PAYMENT | 2586.95 |
| CO-INSURANCE | 9.00    |
| DEDUCTIBLE | 2402.95  |
| AMT. BILLED | 175.00  |

**REMARKS**

**LINE NO. 3: (49009) CARDIAC CARE**

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PROVIDER'S SIGNATURE X

Codes TO BE USED WHEN COMPLETING THIS FORM FOR MEDICAID PAYMENT

Laboratory 1065
Radiology 1069
Inpatient Therapy 1069
Anesthesia 1069
Delivery Room 1069
Operating Room 1069
Supply 1069
Pharmacy 01069
Blood and Blood Products 01069
Neurolinguistic 01069
Intravenous 01069
Intravenous Therapy 01069
Nursing Service 01069
5 or More Beds 20069
2 1/2 Beds 20269

(Reverse Side)
An Extract Listing of Program Numbers and Program Descriptions

and


(These Program Descriptions and Flowcharts are offered in this paper for the convenience of the reader and they are greatly abbreviated from the complete systems documentation which is available in the Bureau of Medical Assistance and also at the State Health and Welfare Data Center.)

NOTE: On or about July 1st, 1976, major changes will be made in these programs. These flows and descriptions are as of the time this paper was written.

December 1st, 1975
<table>
<thead>
<tr>
<th>PROGRAM NUMBER</th>
<th>PROGRAM DESCRIPTION</th>
</tr>
</thead>
</table>
| MD-00          | **First Input Sort**  
|                | - Sorts input transactions into claim reference number and line number sequence. |
| MD-01          | **Format**  
|                | - Performs field validity edits on first input file records, pended claims, and transaction file records.  
|                | - Convert multiple pending transactions into one transaction record.  
|                | - Write formatted input file records.  
|                | - Write control reports.  
|                | This program has the option allowing providers to submit claims data in the same format as the sorted first input file.  
|                | This program handles 2 basic records from the input file  
|                | 1. Claim & Adjustment records.  
|                | 2. Inquiry, File updates, Voids, etc.  
|                | This program contains the edit tables for the input records and the field value edit parameters. |
| MD-05          | **Balance Sort**  
|                | - Sorts formatted input records into key value, claim reference number and line number sequence. |
| MD-10          | **Input Balance**  
|                | - Match adjustments with history index file and create finder records.  
|                | - Verify totals on control transactions (Claims, Gross Adj., Pended).  
|                | - Write table file transactions.  
|                | - Write balanced input transactions.  
|                | - Validate CRN of incoming transactions to insure that all microfilmed transactions have been received by data processing.  
|                | - Verify that individual invoices and claims are in balance. |
| MD-15          | **Table Sort**  
|                | - Sorts transactions via sort key indicated on multi-purpose form (MPF) - 006. |
| MD-20          | **Table Update**  
|                | - Updates Invoice processing table files and provides output file listings, upon request.  
|                | - COM (fiche) of table files upon request. |
| MD-25          | **Recipient Sort**  
|                | - Sorts balanced input records into the following sequence:  
|                | - Recipient I.D. Number  
|                | - Transaction Type  
|                | - Claim Reference Number  
|                | - Line Number |
Edit Module I - Recipient

- Performs recipient verification edits and updates invoice eligibility master file.
- Open routine determines which files will be on-line for the run.
- Reformats and maintains the transactions for the invoice eligibility master.
- Determine when the long term care index file is to be used, accesses the file, and extracts the necessary data.
- Performs recipient oriented edits
  - Recipient known to State
  - Recipient eligible during last 24 mos (XIX) 3 months (V)
  - Recipient eligible when service performed
  - Recipient has required authorizations
  - Medicare and/or other third party benefits utilized where applicable.
- Appends data to claims record for later editing by other modules.
- Writes edited transactions.

Provider Sort

- Sorts input transactions into the following sequence:
  - Provider Type
  - Provider ID #
  - Claim Reference Number (CRN)
  - Line Number

Edit Module II - Provider

- Performs provider verification edits.
- Edit claims, adjustments, voids, gross adjustments against provider master file.
- Write edited transactions to provider master file.
- Specialty determination (append codes to invoice).
- Determines stop invoice code setting.
- Adds following fields from provider master to claims records
  - Reimbursement - %
  - Reimbursement - per diem
  - County code associated with the locator code
  - Provider Type Code
  - Provider ID No. (excluding check digit)

Diagnosis Sort

- Sorts edit transactions - provider into the following sequence:
  - Primary Diagnosis code
  - Claim reference no.
  - Line number

Edit Module III - Diagnosis

- Performs diagnosis edits on invoices and adjustments
- Determine if transaction required diagnosis edit
- Validate the diagnosis against the program eligibility dates for the diagnosis
- Validates the invoice diagnosis as acceptable relative to the age range specified for the diagnosis.
- Examines recipient sex code in relation to sex code specified for the diagnosis.
- Compares provider type code on the invoice to allowable provider types for the diagnosis.
- Verifies that the procedure code in the claim record is applicable for the diagnosis.
- Length of stay editing (inpatient hospitals only).
- Crippling diagnosis editing (inpatient hospital, invoices/adjustments).
- Write edited transactions.

MD-31 Procedure Sort
- Sorts edit transactions - diagnosis into the following sequence:
  • Procedure Code
  • Procedure Type
  • Filler

MD-32 Edit Module IV - Procedure/Price
- Edits drugs/procedures and prices invoices for payment.
- Determines which records are to be edited.
- Validates that service was performed within limits allowed by Title V and/or Title XIX.
- Compares recipients scope of coverage to coverage stated in the procedure/drug record.
- Verifies that procedure on the invoice is acceptable relative to the age range specified for the procedure/drug.
- Examines sex code of recipient in relation to sex code specified for procedure/drug.
- Compares provider type code on the invoice to allowable provider types for procedure/drug.
- Verifies that place of service specified on the claim is compatible with place(s) allowable in the procedure record.
- Determines proposed reimbursement amount for a claim.
- Calculates co-insurance and Title XIX full payment days for long term care providers.
- Determine the amount of reimbursement for a claim:
  • Lesser of prevailing, usual & customary, or charge
  • Interim percent of charge
  • Lesser of RVS X conversion factor, or charge
  • Lesser of fee schedule or charge
  • Negotiated rate for provider type
  • Negotiated rate for specific provider
  • Lesser of fee schedule or charge, + warehousing % increment, + lesser of professional charge or negotiated rate for provider type
  • Charge
  • Lesser of charge or preauthorized amount
  • Lesser of charge I or negotiated rate 1 + lesser of charge II or negotiated rate 2
  • Negotiated rate for provider type + lesser of usual & customary, prevailing, or charge
- Pend claims requesting individual consideration for manual review.
Determine if charge is reasonable
Write edited transactions

MD-33 Combination Sort
- Sorts edit transactions - procedure into the following sequence:
  • Claim Reference Number
  • Line Number

MD-34 Edit Module V - Combination
- Verifies that procedures submitted individually are in fact screens or combinations, and should be paid at a lower rate (collectively).
- Applicability routine.
- Combination edit routine.
- Determine which of the several sources of funds will be used to reimburse the provider for the services.
- Create two output files:
  • Initial Approved Claims
  • Daily Reports File

MD-35 Initial Claims Sort (Daily/Weekly)
- Sorts initial approved claims file into the following sequence:
  • Sort Key

MD-40 Print Sort (Daily/Weekly)
- Sorts daily or weekly reports data into sort key sequence.

MD-45 Print Generation
- Program prints (or spools) daily, weekly, or "on demand" reports. It also produces transactions to be pended, and a recipient verification file (optional).

MD-50 Pended Transaction Sort
- Sorts pended transactions into the following sequence:
  • Claim Reference Number
  • Line Number

MD-52 Load Pending File
- Loads the pended claims file to on-line correction disks.

MD-55 History Edit
- Checks for duplicate claims, conflicting services, program limitations (i.e., maximum refills on prescriptions)
- Accepts
  • Claims
  • Adjustments
  • Adjustment "finder" records
  • Gross adjustments
  and formats them into the appropriate records for inclusion into the utilization history file.
- Purges records from the utilization history file.

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- Responsible for the detection of duplicate and possible duplicate claims.
- Verify that the new claim does not violate the frequency limitation.
- Write the following output records
  • Utilization History File
  • Weekly Reports File
  • Historical Index File
  • Final Approved Claims File
  • Long Term Care Index

MD-60 Historical Index Sort
- Sorts historical index file into the following sequence:
  • Claim Reference Number
  • Line Number

MD-65 Condense Sort
- Writes weekly paid claims file, charge center claims file, and warrant writing input files.

MD-66 Paid Claims Split
- Reformat records for:
  • Warrant Writing
  • Claims History
  • Charge Center Reporting
  • LTC Turnaround Invoices

MD-68 Warrant Sort
- Sorts warrant writing input into the following sequence:
  • Sort Key

MD-70 Warrant Writing
- Produces print-image warrants, remittance advices, warrant register, provider credit balance, and reconciliation reports. Writes updated provider master file.

MD-75 Paid Claims Merge
- Merge weekly paid claims data.

MD-80 Charge Center Sort
- Sorts charge center claims by sort key.

MD-85 Update Hospital Claims
- Maintains hospital data and upon demand, or prior to the fiscal year end, prepares a charge center report for the cost settlement process.

MD-87 Long Term Care Turnaround Sort
- Sort turnaround invoices into the following sequence:
  • Provider Type
  • Provider ID Number
  • Recipient ID Number

MD-88 Long Term Care Print Turnarounds
- Produces turnaround invoices (LTC)
DAILY PROCESSING

Formatted Claims Tape Submitted By Provider

Unsorted Pended Claims and Trans.

Sorted First Input

MD-95 Pending File Sort

Pended Claims and Trans.

MD-01 Format Edit

MD-05 Sort

MD-05 Format Edit

Input Balance

MD-10 Balance Edit

Records Balanced

MD-75

From Weekly Process T-100279

Sorted History File

T-100288 Formatted Input

D-100070 Sorted Format Input

D-100081 Balanced Input Records

T-10081
INPUT EDIT cont'd

Edited ID-100086
Sorted Edit Input
Diagnosis File D-100089
Diagnosis File
Edited Trans. Provider
Sort MD-29
Sorted Edit Input
Diagnosis File D-100089
MD-30 Edit Module II
Edit Diag. Trans.
MD-31 Sort
Sorted Procedure Edit Input
Procedure/Drug File
D-100094
U & C File
Reimbursement & Negotiated Rate
D-100095
Procedure Trans.
MD-32 Edit Module IV
MD-33
TABLE FILE UPDATE
FREQUENCY: AS REQUIRED

Table File Transactions
Data Preparation
Table File Transactions T-10028
MD-15 Table Sort
MD-20 Table Update

Table File

Table File Transactions T-10028?
MD-15 Table Sort
MD-20 Table Update

Table File

Diagnosis Table D-100089
Procedure Drug Table D-100091
Reimbursements and Negotiated Rate Table D-100095
Screen File D-100096
Error Code Description Table D-100107
Spool Table File Transaction Listing
Spool Requested Outputs

Sorted Table File

D-100112

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PROGRAM SUPPORT CHARACTERISTICS
OF THE CLIENT INFORMATION SYSTEM

EFFICIENT HANDLING OF LARGE VOLUMES OF DATA ABOUT PEOPLE AND PROGRAMS

LOCAL REGISTRATION AND INPUT

FOOD STAMPS

Central Case Registration, Files, Records and Disbursements at State Level

Crippled Children*

OFFICE OF YOUTH SERVICES

MEDICAL CLAIMS PAID*

FINANCIAL AID TO THE BLIND

MEDICAID*

AID TO THE AGED

*NOTE: Client Information is Provided to Support the Invoice Processing System
The Medical Management Information System (MMIS) consists of the following subsystems:

1. **RECIPIENT ELIGIBILITY PROCESSING**: (Client Information System CIS) The process by which recipient eligibility is determined, changed, terminated, corrected, and recorded on files of eligible recipients.

2. **PROVIDER ENROLLMENT PROCESSING**: The process by which provider enrollment is determined, changed, terminated, corrected, and recorded on files of enrolled providers.

3. **INVOICE PROCESSING**: The process by which provider invoices are received, edited, corrected, recorded and paid: the basis for reimbursement is determined and the fiscal agents are reimbursed.

4. **PERFORMANCE, SURVEILLANCE, AND UTILIZATION REVIEW REPORTING**: The process by which management information, provider profile and recipient profile data are accumulated, reported, and used.

5. **GOVERNMENTAL REPORTING**: The process by which federal reporting data are collected and reported.

6. **COST SETTLEMENT**: The process by which cost settlement functions are conducted.

7. **MEDICARE PREMIUM PROCESSING**: The process by which the Medicare (Title XVIII) premium is determined, recorded and paid.

8. **PROGRAM INQUIRY AND ADVISORY SERVICES**: The process by which providers and recipients are trained, educated, and informed about Medicaid policies and decisions.

9. **MANAGEMENT ADMINISTRATIVE REPORTING (MARS)**: The process by which fiscal, operations performance, provider and recipient participation and drug usage information is provided to management.

10. **EARLY, PERIODIC SCREENING, DIAGNOSIS AND TREATMENT (EPSDT)**: The process by which medically indigent children are medically screened and referred for follow-up treatment.

11. **CRIPPLED CHILDREN REPORTING**: In cooperation with the Department of Public Health the children clients of this program are included in the information and tracking capability of the Client Information System and the recipient eligibility processing stream listed above.