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An Examination of How Hospitals Use the Reporting Framework Prescribed in the Ontario Hospital Reporting System

August 2000

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August 2000
Pub. No. 00-03-TR

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Executive Summary

This ICES report presents the findings from two studies that examine selected dimensions of how hospitals used the reporting framework prescribed in the Ontario Hospital Reporting System (OHRS) during the first five years of OHRS use.

Among the findings reported in these studies are that:

- No hospital in Ontario found it necessary to add an unknown primary account code to the provincial chart to meet local reporting needs.
- Approximately one-quarter of available primary accounts are used by three or fewer hospitals.
- Approximately one-quarter of available primary accounts are not used by any hospital.
- *Nursing Inpatient* and *Education* functional centres have higher proportions (range 30-51%) of unused accounts relative to those of *Administration*, *Ambulatory Care*, *Diagnostic and Therapeutic* and *Research* functional centres.
- Many Ontario hospitals report unbalanced closing fund positions suggesting the use and application of fund accounting methods are not consistent with fund accounting theory.
- The pattern of surpluses and deficits for certain fund types may suggest a failure to match revenue streams with related expenditures.
- Revenues are found reported in fund types other than the fund type that properly reflects the use restrictions applicable for the revenue stream.
- Hospitals report numerous expense accounts in a credit position (suggesting a revenue source).
- Hospitals report numerous revenue accounts in a debit position (suggesting an expense).

In view of the large proportion of unused and underutilized accounts, as well as some evidence of uncertainty in categorizing expenses and revenues, a review to determine the utility of selected primary account codes is recommended. Strategies to encourage hospitals to provide more detailed reporting should also be developed. The fact that no unknown accounts were identified over the four years studied suggests the comprehensive nature of the existing account structure is adequate to address hospital reporting needs, irrespective of hospital size or service specialty.

With respect to the finding of unexpected balances in the OHRS dataset, this study does not purport to provide a comprehensive review of compliance with provincial reporting requirements. Instead, the study is intended to stimulate discussion among researchers, government officials, and hospital decision-makers regarding steps that could be taken to minimize the number of unexpected or unusual balances found in the year-end submissions by hospitals. Doing so will help improve the quality of data used to support decision-making in the Ontario healthcare system.

Introduction

This ICES report presents the findings from two research studies that examine issues related to data quality in the classification and reporting of financial and operational activity data by hospitals in Ontario, Canada. A high-level overview of the reporting structure used to capture these data is also provided.

The collection and reporting of hospital-level financial and operational activity data is supported in Canada though the use of a common reporting framework. The framework was developed through the combined efforts of federal and provincial governments, and provincial hospital and health organizations.

Building on work begun in the 1980s, the reporting framework for financial and operational activity data is maintained today by the Canadian Institute for Health Information (CIHI) and is published as the *Guidelines for Management Information Systems in Health Service Organizations* (commonly referred to as the *MIS Guidelines*).[1] Ontario adapted the *MIS Guidelines* for provincial use and incorporated the reporting framework into the Ontario Hospital Reporting System (OHRS). The purposes of the OHRS are:

- to enable the analysis of efficiency and productivity through the linking of financial and statistical data for specific functions or departments of the hospital;
- to enable historical and inter-hospital comparisons, through standardized account definitions and accounting practices
- to improve the efficiency of data collection, submission and retrieval; and
- to create a centralized database for access by all health care stakeholders.[2]

The OHRS databases provide the only integrated source of data on the *actual* financial and operational activities of hospitals in the province. Because Ontario uses a global funding model, the OHRS databases represent one of the few access points by which stakeholders can gain an understanding of how hospitals manage their finances.

In contrast to the respected science that has emerged around the classification and organization of clinical event data, an understanding of Ontario's administrative datasets is much less developed. This difference is best explained by considering that efforts to develop large scale administrative datasets are relatively recent in contrast to the considerable experience that has been gained over the years in the collection of clinical data. In Ontario, hospitals have contributed to clinical datasets using common coding frameworks for over 20 years. In contrast, the province-wide electronic submission of financial and operational activity data organized using a common coding convention did not begin until 1995.

The comprehensive nature of the reporting structure used by hospitals in Ontario, and the relative newness of this reporting structure, makes it an appropriate time to pause and evaluate the extent to which hospitals have been able to employ a common province-wide reporting framework.

The emerging availability of administrative datasets is of interest to a variety of stakeholders including hospital administrators, care providers, trustees, funders, and researchers. Administrative datasets provide insights into how hospitals spend and allocate their financial resources. These datasets also provide a wealth of detailed information regarding human resource deployment (such as the number of worked nursing hours) and data on other operational activities (such as the number of inpatient surgical cases.) Access to a rich source of data is invaluable to those interested in gaining a better understanding of how resources are consumed in a health care system.

An important first step in using the data in the OHRS database for research and decision-making purposes is to gain an understanding of the internal validity of these data. As administrative databases have emerged across Canada, a number of studies have been released exploring these data (see Williams and Young for a representative summary).[3] This report extends earlier studies by examining whether hospitals find the coding convention flexible enough to meet their varied needs for primary data capture, and by exploring whether hospitals are able to properly classify and report their financial activities using these data structures.

The report is divided into three parts. Part One describes the reporting framework used by Ontario hospitals for the capture and classification of financial and operational event data. This first section will be useful for readers interested in gaining an understanding of the evolution of national reporting standards in Canada, and for readers who wish to familiarize themselves with the reporting framework used for the capture of financial and operational data elements.

Part Two reports on a research project undertaken to explore the extent to which hospitals chose to exploit the flexibility and depth of a common reporting framework. This line of inquiry contributes to an understanding of the hospital-level utility of standardized, cross-facility coding conventions. Of particular interest is whether a common account classification scheme is flexible enough to meet the needs of all acute care hospitals in the province.

Part Three extends the examination to discover whether hospitals are using the reporting framework in a manner consistent with the accounting treatment that should be afforded the activities being captured. This is achieved by conducting a high-level review of year-end account balances reported by hospitals to determine the extent to which hospitals report account balances that accounting theory suggests are unexpected.

The findings from this study contribute to an understanding of the variations in reporting practice that can exist in administrative datasets, and will be of interest to both those responsible for preparing data for submission to the Ontario Hospital Reporting System, and to those who make use of these data. In a broader venue, given that the Ontario Hospital Reporting System is an adaptation of the national reporting standards embraced by all provinces, the findings in this study have relevance to all contributors to national administrative datasets, and the users of these datasets.

Health care providers and hospital managers have a vested interest in ensuring the data they collect describing their facilities' activities are both reliable and complete. Good data support good decision-making. The users of data reported annually by hospitals (such as funders, policy makers, trustees and researchers) also have a vested interest in ensuring their decisions benefit from the best data available.

It is hoped that the observations presented in this ICES report will promote discussion between both groups as they work toward a common goal of supporting a comprehensive repository of hospital financial and operational data that is reliable, consistent, and complete.

1.0 Evolution and Design of the Financial Reporting Frameworks in Canada

1.1 The Emergence of National Standards

The development of the *MIS Guidelines*[1] represented an unparalleled effort in Canada to assist health service organizations with the implementation of comprehensive management information systems. These systems are designed not only to support internal decision-making needs, but to also provide information used by external agents such as funders, health board authorities, and researchers to gain a better understanding of how the Canadian health service system operates. A driving force behind the development of the *MIS Guidelines* was the need to support the collection and reporting of comparable hospital financial and statistical data.

In the early 1980s, the accepted accounting standards for hospitals were outlined in the Canadian Hospital Accounting Manual (CHAM).[4] Unfortunately, CHAM was limited in its ability to reflect changes in evolving care delivery models, improving information technology architectures, and an increased need for timely, comparable information on health services delivery. To address this growing problem, the MIS Project was launched in 1982 as a joint initiative of the federal and provincial governments, provincial hospital and health associations and the Canadian Hospital Association. The goals of the MIS Project were to develop an information systems architecture that would:

- better measure the use of resources in relation to activities, by integrating financial, activity and clinical data; and

- improve the timeliness and comparability of information being collected within Canadian health care facilities for management purposes.

By 1995 the MIS Project had evolved to become the MIS Group and the first version of the *MIS Guidelines* was released. Canada-wide testing in 10 pilot sites was undertaken between 1985 and 1989.

In 1991, Alberta and Nova Scotia became the first two provinces to begin province-wide implementation of hospital-based reporting using the *MIS Guidelines*. By 1999, all provinces and territories except Quebec required acute care hospitals within their jurisdiction to develop information system reporting structures that were consistent, in an overall manner, with those specified in the *MIS Guidelines.*

During the period when the *MIS Guidelines* were being adopted across Canada, the MIS Group evolved into the Canadian Institute for Health Information (CIHI). This change occurred in 1995, coincident with the transfer of responsibility for the Annual Hospital Survey from the Health Statistics Division of Statistics Canada to CIHI. Between 1995 and 1998, the Annual Health Survey was redesigned to better support and complement the information systems architectures specified in the *MIS Guidelines*.
By combining responsibility for the *MIS Guidelines* with the management of the Annual Hospital Survey, CIHI became an authoritative, single source agency with a mandate to support the collection and reporting of health information in Canada.

1.2 Components of the MIS Guidelines

The MIS Guidelines provide a detailed framework for the organization of financial and clinical data elements and are designed to reflect the complete scope of hospital activity. In recent years, the framework has been enhanced to embrace the information needs of other health service organizations, such as community health and home care.

There are four key elements to the *MIS Guidelines*. These elements are:

- *a coding convention* which provides a structure to organize the data elements collected by health service organizations;
- a description of the appropriate *accounting treatment* that should be given to the activities in which a health service organization engages;
- functional specifications for *workload measurement systems* used to measure hospital activities; and
- high level specification of an *information system architecture* suitable for use in Canadian health care settings.

The *coding convention* outlined in the *MIS Guidelines* is comprehensive, and supports the collection of both financial data elements (such as how much money was spent on nursing) and operational activity data elements (such as how many hours the nurses worked). These data elements are commonly maintained in a computerized accounting information system implemented as a part of a hospital's information technology infrastructure.

To ensure that the appropriate *accounting treatment* is applied to the financial activities in which a hospital engages, the accounting guidelines in the *MIS Guidelines* closely follow Generally Accepted Accounting Principles (GAAP) as outlined in the *CICA Handbook*.[5] In certain situations, the *MIS Guidelines* are more prescriptive than GAAP. For example, while Canadian GAAP simply requires the use of the accrual basis of accounting, the *MIS Guidelines* prescribe specific amortization rates for each type of fixed asset.

Workload measurement systems form an integral element of the *MIS Guidelines*. These systems capture activity-related data, such as the time spent performing tests in a hematology lab, or the number of hours spent providing nursing care in a cardiac unit. The collection and classification of workload data using the same conceptual framework as that used to capture financial data is somewhat unique in the design of financial information systems and is a value-added feature of the *MIS Guidelines*.

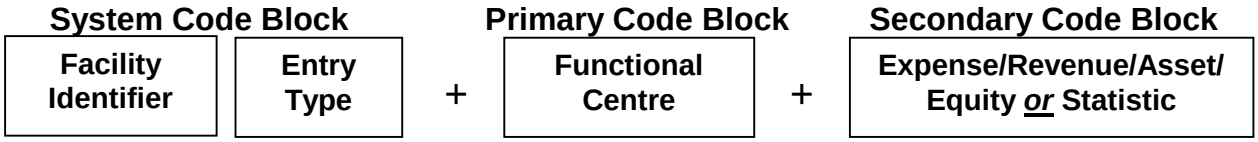
The *information system architecture* outlined in the *MIS Guidelines* allows hospitals to reflect on the high-level data needs of health service organizations, and to select or design information systems able to meet these needs.

A regular process of review ensures that the *MIS Guidelines* evolve and adapt to meet the changing needs of health service providers. For example, in recent years the *MIS Guidelines* have been enhanced to support the reporting needs of health service providers working in settings other than acute care hospitals. Current efforts are under-way to better accommodate the reporting needs of multisite and multidiscipline organizations such as health regions.

The workload measurement systems and the overall information system architectures are not the focus of this report. Readers interested in more information on these topics are referred to the *MIS Guidelines*.[1] This report examines the extent to which users are able to apply the coding and accounting constructs specified in the *MIS Guidelines*. The coding convention is more fully described in the next section.

1.3 Structure of the Coding Convention Used in the MIS Guidelines

For the years under study in this report, the *MIS Guidelines* (and the Ontario Hospital Reporting System) used a multilevelled 3-block hierarchical coding convention structured as follows:



The system code block is used optionally by hospitals to distinguish between multiple sites and to flag whether the secondary code block refers to a statistical or financial data element (necessary when both are being maintained in the same accounting system).

The primary code block indicates the financial statement section affected by a transaction (asset, equity, revenue, expenditure) and identifies the functional centre (such as clinical laboratory) responsible for the transaction. The primary code block provides for the broad classification of transactions as affecting assets, equities, revenues or expenditures. The primary code block also accommodates the fund accounting requirements of Canadian hospitals. Nine fund types are supported. (See Exhibit 6) A five-level structure is used within the primary code block.

Two examples of how a primary code block is assembled are presented, one for an account appearing on the Statement of Operations, and one for an account appearing on the Statement of Financial Position. (Asset and equity accounts only use the first three levels of the coding convention.) Each level deeper in the coding convention increases the detail with which the transaction is classified.

A Primary Account from the Statement of Operations

Level 1	71					Revenue/Expense – Operating Fund
Level 2	71	4				Diagnostic & Therapeutic Services
Level 3	71	4	10			Clinical Laboratory
Level 4	71	4	10	45		Microbiology
Level 5	71	4	10	45	20	Serology

A Primary Account from the Statement of Financial Operations				
Level 1	11			Asset – Operating Fund
Level 2	11	1		Cash
Level 3	11	1	10	Bank – General Purpose

The secondary code block is used for two purposes. When recording financial transactions, the secondary code block indicates the nature of an expense or revenue. The secondary code block is also used to capture activity data elements (called statistical data in the *MIS Guidelines*) such as the number of inpatient surgical cases or newborn discharges.

A Secondary Account from the Statement of Operations				
Level 1	1			Revenue
Level 2	1	50		Grants
Level 3	1	50	20	Research Grants

A Statistical Account (A Secondary Account)					
Level 1	5				Patient Profile Statistics
Level 2	55				Clinics
Level 3	55	1			Inpatients
Level 4	55	1	20		Cardiac
Level 5	55	1	20	40	Pacemaker

The richness of the *MIS Guidelines* coding convention is beyond the scope of this review. Interested readers are referred to the *OHRS User Guide*[2] and/or the *MIS Guidelines*[1] for a complete description of the coding options. The purpose of these illustrations is to demonstrate the hierarchical nature of the code blocks which supports the aggregation and grouping of common data elements.

1.4 Design of the Coding Convention Used in the *MIS Guidelines*

Hierarchical block-coding conventions are commonly used in financial system applications because of the ease with which subsidiary accounts can be aggregated. For example, the codes for *Clinical Psychology* [71 4 75 20] and *Neuropsychology* [71 4 75 40] are both child codes of the code for *Psychology* [71 4 75], which itself is a child code of the account code for *Diagnostic and Therapeutic Services* [71 4]. This hierarchical structure simultaneously supports detailed or aggregated reporting that can be tailored to meet the needs of the decision-maker.

Hierarchical block code structures are attractive for use in financial information system data architectures because:

a) *Individual code blocks are independent of one and other.*

The *MIS Guidelines* use three code blocks that can be mixed and matched in any logical combination. The stand alone nature of each code block provides considerable flexibility in coding without requiring the duplication of code elements.

b) *Code blocks can be easily collapsed or "rolled up" to aggregate data at higher levels of abstraction.*

As shown in the Psychology example just presented, Psychology services can be considered to be a part of a broader grouping including all Diagnostic & Therapeutic Services (which would include Pharmacy, Clinical Laboratory, Respiratory Therapy, etc.), or Psychology can be disaggregated to examine data elements at the more discrete level of Clinical Psychology and Neuropsychology.

Hierarchical block code structures, however, are not without disadvantages. Ironically, two of these disadvantages are corollaries of the features that make block coding schemes attractive.

The first challenge that presents itself with hierarchical block coding schemes is that it can be difficult to add new accounts in a logical place in the chart of accounts. This can be because a logical location does not exist in the chart, or because the code capacity for the logical location has been exceeded. For example, it is not possible to insert a new code to fall between 71 4 40 40 10 and 71 4 40 40 11. CIHI minimizes the occurrence of this problem in the *MIS Guidelines* by avoiding the use (when possible) of sequential code numbers, and by deliberately building excess capacity into the chart of accounts.

The independence of the code blocks presents a second challenge. While logic is automatically enforced within a code block, the same is not true between code blocks. Illogical combinations can be easily assembled such as *Medical Surgical Supplies* used by *Visitor Information* (The code would be 71 1 30 40 - 4 60 70.) Edit routines must be implemented to avoid such code combinations from being inadvertently used. The extent to which certain illogical combinations are used by hospitals is examined as a component of this report.

1.5 Development of Financial Reporting Standards in Ontario

From the outset, it was recognized that although the *MIS Guidelines* are comprehensive, provinces were likely to have unique reporting requirements that might not be accommodated by a national standard. Thus, in Ontario, under the auspices of the Chart of Accounts Committee of the Joint Policy and Planning Committee, the *MIS Guidelines* were adapted to better meet local needs. The provincial adaptation of the *MIS Guidelines* is used to support the collection of data for use in the Ontario Hospital Reporting System (OHRS). The Chart of Accounts and the specific reporting requirements applicable to Ontario hospitals are described in the *OHRS User Guide*.

Both the *MIS Guidelines* and the *OHRS User Guide* are updated regularly to reflect accountability requirements related to federal and provincial health policy initiatives as well as changes in clinical practice, human resource deployment, and technology.

Since fiscal 1994/95, hospitals in Ontario have submitted an annual summary of their financial and operational activity data to the Ontario Ministry of Health using the specifications found in the *OHRS User Guide*. Data submissions are made electronically using a flat file format. One record (consisting of an account number and a balance) is submitted for each account code used by the hospital. *The OHRS User Guide* specifies a minimum level of reporting detail. Hospitals must report at least the minimum dataset, but are free to submit any level of detail providing that the minimum dataset requirements are met. The average hospital submission contains just over 2,000 records, with some large hospitals submitting over 10,000 records.

The Ontario Hospital Reporting System provides a valuable data resource of interest to a variety of health system stakeholders, including hospital trustees, administrators, funders and researchers.

1.6 Understanding the OHRS Datasets

This report continues by presenting the findings from two studies undertaken to gain an understanding of how Ontario hospitals used the reporting framework specified in the OHRS during the first five years of OHRS use. The datasets used for both studies are drawn from the OHRS database. The first study considers the question of whether the reporting framework is flexible enough to accommodate the varied reporting needs of hospitals across the province. The second study examines whether hospitals record their financial activities in a manner that is consistent with the accounting treatment that is expected to be afforded these activities.

The year-end general ledger account balances for all Ontario hospitals for the five fiscal years from 1994/95 through 1998/99 were obtained from the Ontario Ministry of Health under data access agreements between ICES and the Ministry. Four years of data ending in 1997/98 are examined in the first study,[I] while the full five years of available data are examined in the second study.

[I] The account code structure remained unchanged between 1997/98 and 1998/99.

The OHRS datasets undergo several stages of editing and review by the Ministry of Health after submission by hospitals. In the first three stages, format, content, completeness and consistency are checked. Hospitals electronically resubmit their account balances after correcting discrepancies identified during the edit process. The final edit stage requires hospitals to sign off on their trial balance submission, verifying that they agree with the summary data report of their account balances as prepared by the Ministry of Health.

The datasets used in this report are prepared using specifications found in three versions of the *OHRS User Guide.* Version 1 was in effect for fiscal years 1994/95 and 1995/96. Version 2 was released for use in fiscal year 1996/97. Version 3 was introduced for the 1997/98 reporting period and was used in 1997/98 and 1998/99.[I] The Chart of Accounts described in each version

differs slightly. Revisions often included the addition of a few new accounts, and the removal of accounts no longer required (or no longer applicable.) The absolute number of accounts available for use increased slightly with each successive version of the *OHRS User Guide*. The appropriate version of the *OHRS User Guide* is used when examining the different datasets explored in this study.

[I] Version 4 of the OHRS will be used for fiscal years 1999/2000 and 2000/2001.

2.0 A Study of the Distribution and Extent of General Ledger Account Use in the Ontario Hospital Reporting System

2.1 Objective of Study

To better understand the utility hospitals find in the Chart of Accounts structure used to support the Ontario Hospital Reporting System, we examined the use of a subset of account codes in the first four years of reporting. We wanted to determine whether the account code framework provides sufficient detail and flexibility to accommodate the varied reporting needs of hospitals across the province. Given that a single chart of accounts must meet the needs of hospitals ranging from small rural facilities to large tertiary metropolitan teaching facilities, the variation in the complexity of required reporting needs is considerable.

We examined the extent to which the account code framework provides sufficient detail and flexibility by examining whether hospitals use the full range of account codes available. We also examined whether hospitals find it necessary to invent account codes to better describe activities not reflected in the *OHRS User Guide*.

It was anticipated that if hospitals were unable to record transactions in a manner that met their local reporting needs, account codes would have been added to the provincial dataset by these hospitals to address this shortcoming. It should also be possible to determine if the *OHRS User Guide* promotes a level of disaggregation seen as having utility to only a few (or no) hospitals. These are accounts that might be trimmed from the coding convention without any loss of information utility.

Thus, the objective of this study is to examine *how* hospitals use the flexibility and depth of the hierarchical block coding convention outlined in the *OHRS User Guide*. In the companion study described in Part Three of this report, we explore whether hospitals are able to properly classify their activities according to the guidelines found in the *OHRS User Guide*.

2.2 Method of Analysis

We restricted our examination to Operating Fund functional and accounting centre accounts, as Other Fund accounts are not included in the provincial data edit review process. In this report, all Level 3, 4, and 5 primary accounts listed in Version 1, Version 2, or Version 3 of the *OHRS User Guide* are included, regardless of whether the account was a mandatory Ministry of Health reporting field. To determine the distribution and extent of account usage, we examined account codes aggregated by version of the *OHRS User Guide* and selectively disaggregated over fiscal years according to the following scenarios:

- **Valid but unknown accounts being used**

  "Valid but unknown accounts being used" are defined as primary accounts that are not listed in the *OHRS User Guide* but which roll-up to an account

  that does appear in the *User Guide.* Accounts meeting these criteria have been added by hospitals to more discretely define an activity already included in the *OHRS User Guide.*

- **Invalid accounts being used**

  "Invalid accounts being used" are defined as primary accounts that are not listed in the *OHRS User Guide*, and which are invalid because they are orphaned within the structure of the provincial Chart of Accounts.

- **Primary accounts being used by three or fewer hospitals.**

  "Primary accounts being used by three or fewer hospitals" are defined as primary account numbers that only appear in the data submissions made by three or fewer hospitals in the province. Primary accounts used by three or fewer hospitals may suggest an opportunity to trim the Chart of Accounts to remove accounts of relevance to only a small number of hospitals.

- **Valid accounts not being used**

  "Valid accounts not being used" are defined as Level 3, Level 4, and Level 5 primary accounts that exist in the *OHRS User Guide* but which do not appear in the data submission made by any hospital in the province.

In most cases, we stratified accounts by functional centre section and examined the proportional representation of each. With regard to those accounts used by three or fewer institutions, we incorporated a sensitivity analysis whereby we compared account usage when the threshold was set at one hospital reporting as well as when five or fewer hospitals reported.

2.3 Results

2.3.1 Valid But Unknown Accounts Being Used

Among the hundreds of account codes available for use by hospitals, only two primary account codes not appearing in the relevant *OHRS User Guide* were found in the annual hospital data submissions. Both instances were found in the 1994/95 dataset.

It is interesting to note that the unknown account codes found [71 4 10 75 and 81 9 25 50], were added as valid account codes in Version 2 of the *OHRS User Guide*.[I] This may suggest that some hospitals elected to implement Version 2 requirements before the 1996/97 reporting year.

[I] These account codes were added as Molecular Diagnostics and Differential: Acute Care, respectively in Version 2.

2.3.2 Invalid Accounts Being Used

We did not anticipate finding invalid accounts given that, before the Ministry of Health's edit routines convert a hospital's data submission to "permanent status," the data must undergo a series of edit checks which includes the verification of account numbers.

No invalid Operating Fund primary account numbers were used by any hospital in the province in the four years of data examined.

2.3.3 Primary Accounts Being Used by Three or Fewer Hospitals

We were interested to learn the extent to which general ledger primary account codes are used by only a small number of hospitals. Such a finding might suggest an opportunity to trim the Chart of Accounts to remove accounts of relevance to only a few hospitals.

We learned that the number of hospitals and account codes involved in this scenario increased between 1994/95 and 1996/97 (Exhibit 1), and decreased slightly in 1997/98. Proportionately more Level 5 accounts were used by three or fewer hospitals than either Level 4 or Level 3 accounts.

This is not an unexpected finding. The Ministry of Health sets a minimum level of reporting, which is often at Level 3. Hospitals are free to report activity at Level 4 or Level 5 if they so choose, but may also choose to roll-up this activity to the provincially mandated reporting level before submitting their annual data. Thus, accounts identified as being infrequently used for annual reporting purposes, may in fact be in use locally by hospitals.

Exhibit 1

Distribution of General Ledger Primary Account Codes Being Used by Three or Fewer Hospitals
(by Level and Year)

	Level 3 # of Accounts	Level 4 # of Accounts	Level 5 # of Accounts	Total # of Levels 3-5	# Hospitals
1994/95	4	57	89	150	58
1995/96	7	58	93	158	74
1996/97	11	73	100	184	77
1997/98	7	77	99	183	72

We also explored the magnitude of the expenditures and revenues being booked to infrequently used primary account codes. We wanted to learn whether these accounts, despite being needed by only a few hospitals, nonetheless capture expenses or revenues that are non-trivial.
Exhibit 2 shows the aggregate dollar amounts booked to general ledger functional centre codes that are only used by three or fewer hospitals. Each year, on average, $200 million is being booked in functional centre account codes used by three or fewer hospitals.

Exhibit 2

Aggregate Dollar Amounts Booked to Primary General Ledger Accounts Used by Three or Fewer Hospitals

Functional Centre Section	1994/95 $million	1995/96 $million	1996/97 $million	1997/98 $million
Administration and Support	7.5	7.4	8.1	17.4
Nursing Inpatient Services	96.8	112.8	110.2	111.9
Ambulatory Care Services	31.7	37.6	40.0	36.5
Diagnostic and Therapeutic	52.1	67.8	64.6	64.6
Research	0.5	0.49	2.0	-
Education	4.7	3.2	0.9	0.5
Undistributed	-0.22	-14.7	-15.6	-16.0
TOTAL	**193.1**	**214.7**	**210.2**	**214.9**

Some unusual patterns of account usage were identified. For example, the aggregate dollar amounts booked to Diagnostic and Therapeutic functional centre codes used by three or fewer hospitals grew by 30% ($15.7 million) between 1994/95 and 1995/96. This was largely influenced by one hospital recording a $2.9 million increase in its *Centralized Laboratory Glassware* [71 4 10 15 10] account and another hospital recording a $1.9 million expense in *Therapeutic Services* [71 4 35 20]. The latter hospital did not use the *Therapeutic Services* account code in 1994/95.

The 98% change between 1994/95 and 1995/96 in dollars booked to infrequently used Undistributed functional centre accounts is due almost entirely to one hospital recording $14.7 million in the account *Standard Ward Eldcap* [81 9 15 25] in 1995/96. This hospital had not made use of this account in 1994/95.

And lastly, the doubling of the amount shown in Administration and Support between 1996/97 and 1997/98 was the result of large expenses in *Employee Compensation and Benefits Management* [71 1 20 30]; *Plant Operation General* [71 1 55 10]; and *Buildings Maintenance* [71 1 65 40] reported by four hospitals.

Exhibit 3

Number of Infrequently Used Primary Ledger Account Codes

(by Functional Centre Section and OHRS Version)

	Number of Codes Reported by One Hospital			Number of Codes Reported by # Three Hospitals			Number of Codes Reported by ∃ Five Hospitals		
	Version 1	Version 2	Version 3	Version 1	Version 2	Version 3	Version 1	Version 2	Version 3
Admin & Support	6	10	10	16	17	19	23	26	30
Nursing Inpatient	16	21	16	36	40	37	40	47	44
Ambulatory Care	33	36	37	62	74	80	79	90	95
Dx & Tx	13	17	17	36	34	33	47	45	43
Research	-	1	-	1	3	-	3	3	-
Education	3	2	1	10	6	5	13	9	6
Undistributed	1	3	4	6	10	9	11	12	14
TOTAL NUMBER OF ACCOUNTS	**72**	**90**	**85**	**167**	**184**	**183**	**216**	**232**	**232**
TOTAL NUMBER OF HOSPITALS	**30**	**29**	**28**	**75**	**76**	**72**	**106**	**88**	**90**

OHRS Version 1: April 1, 1994 - March 31, 1996
OHRS Version 2: April 1, 1996 - March 31, 1997
OHRS Version 3: April 1, 1997 - March 31, 1999

In choosing to define an account as "infrequently used," we arbitrarily defined "infrequent" as meaning that less than three hospitals in the Province made use of the account. Depending upon the year, this is about 1.5% of the number of institutions. To test the sensitivity of our threshold, we examined the impact of relaxing our definition of "infrequently used account" to see how many accounts are used by five or fewer hospitals. We also tightened our definition of "infrequently used account" to see how many accounts are used by only one hospital in the Province. The results are presented in Exhibit 3.

An interesting finding is that by Version 3, some 85 primary general ledger account codes in the *OHRS User Guide* are being used by only one hospital in the Province.

Over one-quarter of functional centre operating fund accounts are used by three or fewer hospitals and when combined with those accounts not used by any hospital, 47.3% of Version 1, 53.6% of Version 2, and 54.1% of Version 3 available operating fund account codes are used by a small number of institutions (or are not used at all.)

2.3.4 Valid Accounts Not Being Used

The initial release of the *OHRS User Guide* included 600 valid Operating Fund primary account codes. Some 117 of these functional centre codes were not used by any hospital when reporting data for 1994/95 and 1995/96. By 1998/99, the *OHRS User Guide* supported the use of 708

valid Operating Fund primary account codes, of which hospitals made use of only 508. The number of available functional centre primary accounts grew by 15% over the three versions of the *OHRS User Guide,* while the number of unused accounts grew by 41%.

Exhibit 4

Valid Accounts Not Being Used

Functional Centre Section	Level 2 Identifier	Available Accounts			# of Accounts Unused		
		Version 1	Version 2	Version 3	Version 1	Version 2	Version 3
Administration and Support	711	94	105	106	11	23	22
Nursing Inpatient Services	712	96	114	118	28	37	43
Ambulatory Care Services	713	177	212	213	47	66	62
Diagnostic and Therapeutic	714	110	122	124	11	26	29
Research	717	5	6	6	0	0	5
Education	718	39	41	41	16	21	19
Undistributed	719	79	90	100	4	13	20
TOTAL	**-**	**600**	**690**	**708**	**117**	**186**	**200**

OHRS Version 1: April 1, 1994 - March 31, 1996
OHRS Version 2: April 1, 1996 - March 31, 1997
OHRS Version 3: April 1, 1997 - March 31, 1999

When valid but unused account codes are rolled up to Level 2, the *Nursing Inpatient and Ambulatory Care Services* sections are found to have the largest number of unused accounts. The majority of unused *Ambulatory Care* account codes pertain to Level 5 clinics. As a proportion of all accounts of a particular functional centre section, 41% of *Education* and almost 30% of *Nursing Inpatient* services Version 1 account codes are unused and 51% and 33% of Version 2 accounts in these respective categories are unused. When we examine unused accounts by Level within the functional centre hierarchy, the majority of unused accounts are found at Level 4 and Level 5 accounts (Exhibit 5).

It should be noted that the finding of unused Level 3 accounts is not unexpected. In many cases this is a result of *OHRS User Guide* requiring reporting at an account level that is deeper in the hierarchy than the unused Level 3 account. Over the four years of observation only one mandatory Ministry of Health Level 3 account was not used by any hospital *Nursing Inpatient Services: Temporary Functional Centre* [71 2 99].

Exhibit 5

Distribution of Valid but Unused Accounts
- by Level and Year -

	Level 3 # of Accounts	Level 4 # of Accounts	Level 5 # of Accounts	Total # Levels 3-5
1994/95	3	49	73	125
1995/96	3	49	74	126
1996/97	7	86	93	186
1997/98	18	88	94	200

Caution must be used when interpreting the large increase in unused Level 3 accounts between 1996/97 and 1997/98. The apparent decline in use is actually evidence of hospitals conforming to changing requirements introduced in Version 3 of the *OHRS User Guide.* Five of the unused eleven codes relate to *Research Supported by the Facility* [71 7]. Version 3 recommends that most research activity should be reported in Fund Type 3 *(Other Sources of Funding)* instead of the *Operating Fund* (Fund Type 1). Another six Level 3 account codes had the proviso "is not submitted" removed in Version 3 (and in many cases, mandatory reporting was at a lower level.)

There was no evidence of a trend for valid accounts not used in 1994/95 gaining acceptance in any of the following years. For example, of the 49 unused Level 4 accounts in 1994/95, 47, 44, and 47 are also unused in 1995/96, 1996/97, and 1997/98, respectively. Moreover, the large increase in Level 4 unused accounts that occurred between 1995/96 and 1996/97 is primarily attributed to accounts created for Version 2, i.e. of the 37 unused accounts, 34 are newly issued accounts. Similarly, of the 21 new accounts in Version 3, 13 are unused by any institution in their submission that year.

2.4 Discussion

Promulgation of a national standard for the collection and reporting of clinical and financial data has required hospitals to adapt accounting practices to provincial hybrids of the *MIS Guidelines*. The *OHRS User Guide* describes the provincial variant used in Ontario.

This study attempts to determine whether the functional and accounting centre coding structure described in the *OHRS User Guide* provides sufficient detail and flexibility to accommodate the needs of hospitals in fulfilling statutory reporting requirements.
That almost one-half of functional centre accounts were used by three or fewer hospitals (and often not by any), suggests that the general ledger structure described in the *OHRS User Guide* is comprehensive. However, it would be short-sighted to recommend that accounts be dropped based on lack of use without further investigation.

We observed that many of the unused accounts support the more discrete classification of revenue and expenditure sources than the level required for provincial reporting purposes. It may be that hospitals are exploiting the full power of the Chart of Accounts to ensure data are

gathered to support local decision making needs, but that these data are being aggregated before submission to the Ministry of Health. It may also be that hospitals have not fully embraced utility of the management reporting structure supported by the Chart of Accounts.

Several smaller concerns follow. The finding of several instances where large dollar amounts appeared in select accounts in one year but not in other years indicates a degree of uncertainty in categorizing some expenses and revenues. The relatively high proportion of unused accounts found in the *Education* and *Nursing Inpatient* functional centres suggests that account codes in this part of the Chart would benefit from a closer review to determine whether some codes could be dropped or redefined.

On a positive note, the fact that no unknown accounts were identified over the four years studied suggest that the comprehensive nature of the existing account structure is adequate to address hospital reporting needs, irrespective of hospital size or service specialty.

3.0 A Study of Unexpected Findings in the Ontario Hospital Reporting System Data

3.1 Objective of Study

This research extends the study described in Part Two of this report by examining whether hospitals are using the coding framework in a manner consistent with the accounting treatment that should be afforded the activities being captured. In order to do this, we conducted a high-level review of two types of unexpected or unusual account balances reported by hospitals for the fiscal years ending 1994/95 through 1998/99.

We explored the extent to which hospitals reported unexpected amounts in their closing fund balances and the extent to which unexpected balances occurred within asset, liability, revenue and expense accounts.

This study does not purport to provide a comprehensive review of hospital compliance with Ontario Hospital Reporting System reporting requirements. Instead, this study is intended to stimulate discussion among researchers, government officials, and hospital decision-makers regarding steps that could be taken to minimize the number of unusual or unexpected balances found in the Ontario Hospital Reporting System dataset.

3.2 Method of Analysis

For the fiscal years 1994/95 through 1998/99, the year-end trial balances of hospitals in the Province of Ontario were examined to identify:

- unusual or unexpected balances appearing in the closing position of restricted and general operating funds; and,

- unusual or unexpected balances appearing in the closing position of asset, liability, revenue or expense accounts.

An example of the latter would be finding that a hospital reported a negative revenue stream for the fiscal year. An example of the former would be a finding that a hospital had an unbalanced closing fund position.

3.3 Results

3.3.1 Findings Related to Unexpected Application of Fund Accounting Concepts

The *MIS Guidelines* define fund accounting as, "…the method in which a self-balancing group of accounts is provided for each accounting entity established for legal, contractual, or reporting purposes.[1]" Fund accounting provides a mechanism for government and other not-for-profit organizations to structure their financial affairs to recognize that certain monies collected and managed by the organization have associated with them temporary or permanent restrictions affecting how the monies can be used. Nine different fund types are supported in the reporting framework described in the *MIS Guidelines*. Fund types available for use by Ontario hospitals are shown in Exhibit 6.

A "self-balancing" set of accounts means that within an organization's general ledger, the subset of accounts related to each fund type has a net position of zero (ie., the total value of fund accounts in a debit position must equal the total value of fund accounts in a credit position). Interestingly, this is not the case for fund balances reported by Ontario hospitals.

Exhibit 6 shows the closing net position for the nine fund types supported in the *OHRS User Guide*. While the overall net position of the aggregated trial balance is zero (as is expected), many hospitals reported unbalanced fund positions at year end.

The Operating Fund and Capital Funds (Fund Types 1 and 5) are shown to have unbalanced positions that exceed $1 billion in four of the years studied, and just under $1 billion in the other. While the unbalanced positions in the other funds are not as significant, the amounts involved still exceed $1 million in most cases. The relative balances involved are generally not relevant. The significant observation is that sets of self-balancing accounts used to support fund accounting are unbalanced.

This finding suggests that the methodology used to implement fund accounting concepts by Ontario hospitals is inconsistent with the theoretical underpinnings of fund accounting theory. The finding also highlights the apparent haphazard reporting of hospital activity within various funds.

In the most recent year of data submissions, 142 of 187 hospitals (76%) reported their Operating Fund in an unbalanced position. This suggests that the assets, liabilities, revenues and expenses related to operations are not discretely identified within these hospitals' accounting systems. An examination of Fund Type 2 (Other Votes) also results in some unexpected findings. Of the 176 hospitals that used Fund Type 2 codes in 1998/99, 82 hospitals have Statement of Operations activities related to Fund Type 2, but oddly had no Statement of Financial Position activity for Fund Type 2. Another 17 hospitals had both Statement of Operations and Statement of Financial Position activities related to Fund Type 2, but the fund is in an unbalanced position.

Exhibit 6

Fund Balances

(sum of trial balance financial accounts by fund type)

OHRS Fund	1994/95 $ 000	1995/96 $ 000	1996/97 $ 000	1997/98 $ 000	1998/99 $ 000
Fund Type 1 – Operating	($1,477,704)	($1,510,193)	($1,471,015)	($914,441)	($954,872)
Fund Type 2 – Other Votes	$13,070	$8,769	$11,140	$23,027	$13,170
Fund Type 3 – Other Sources of Funding	($1,974)	$8,093	$5,544	($9,337)	($12,264)
Fund Type 4 – Board Designated	($1,673)	$44	($920)	($920)	($54,270)
Fund Type 5 – Capital	$1,475,065	$1,501,627	$1,458,890	$915,307	$1,004,784
Fund Type 6 – Special Purpose	($5,157)	($4,298)	($3,668)	($18,998)	$2,886
Fund Type 7 – Non-MIS	($450)	($1,094)	$0	n/a	n/a
Fund Type 8 – Unrestricted Endowment	$1,748	$1,097	$3,239	$5,360	$2,158
Fund Type 9 – Restricted Endowment	($2,924)	($4,044)	($3,210)	$2	($1,592)
Ontario Trial Balance	**$0**	**$0**	**$0**	**$0**	**$0**

Exhibit 7 shows the surplus/deficits reported in each of the nine fund types. Both the net dollar values captured in each fund and the number of hospitals reporting activity in each fund type are shown.

The surplus or deficit for a fund is determined by subtracting expenditures charged to the fund from revenues recognized in the fund. In most cases, a non-zero balance is an expected and normal finding. However, some interesting observations can be drawn regarding the type of non-zero balances observed in Exhibit 7.

First, large surpluses are being reported in the Board Designated Fund, Capital Fund, and Special Purpose Fund (Fund Types 4 through 6), except for the most recent year with smaller surpluses appearing in the Non-MIS Fund, Unrestricted Endowment Fund, and Restricted

Endowment Fund (Fund Types 7 through 9). In contrast, and with only one exception (1994/95), deficits were reported in the Operating, Other Votes and Other Sources of Funding Funds (Fund Types 1 through 3).

Our experience with an earlier project suggests that some of the surpluses in Funds 2 through 9 should actually be reported as revenues to the Operating Fund (Fund Type 1). For example, the large surplus in the Capital Fund (Fund Type 5) included monies allocated to offset amortization charges reported in the Operating Fund (Fund Type 1). The failure to match certain revenues and expenses within fund types makes it impossible to clearly differentiate operating monies from other fund monies. It is unclear whether the revenues and expenses that flow through the various funds are indeed appropriately segregated or restricted according to the definition of the fund involved.

Exhibit 7

Annual Surplus (Deficit) by Fund Type

Fund	1994/95 $ 000 # of hospitals	1995/96 $ 000 # of hospitals	1996/97 $ 000 # of hospitals	1997/98 $ 000 # of hospitals	1998/99 $ 000 # of hospitals
Fund Type 1 – Operating	($3,524) 220	($77,943) 214	($129,160) 208	($138,632) 199	($42,371) 187
Fund Type 2 – Other Votes	($13,923) 204	($9,738) 201	($12,145) 191	($6,972) 188	($10,298) 176
Fund Type 3 – Other Sources of Funding	$1,791 63	($6,440) 71	($6,349) 78	($16,048) 76	($5,489) 75
Fund Type 4 – Board Designated	$10,053 9	$5,265 10	$3,476 9	$6,023 7	$8,585 8
Fund Type 5 – Capital	$41,334 106	$48,724 107	$36,595 101	$42,887 98	$28,873 92
Fund Type 6 – Special Purpose	$4,404 17	$2,982 14	$2,234 14	$1,946 9	($828) 8
Fund Type 7 – Non-MIS	$454 3	$1,094 3	$0 1		
Fund Type 8 – Unrestricted Endowment	$222 3	$143 4	$524 4	$502 4	$90 4
Fund Type 9 – Restricted Endowment	$40 5	($205) 4	($176) 5	$3 3	$1 2
Trial Balance Surplus / (Deficit)	**$40,853**	**($36,119)**	**($105,001)**	**($110,291)**	**($21,437)**

Exhibit 8 explores this issue one step further. There is an underlying assumption that the trial balance submission includes all the activities of the legal hospital entity. Inter-fund activity, such as the payment of Other Vote expenses (Fund Type 2) through the Operating Fund bank account (Fund Type 1), are reported via Due To/From accounts as outlined in the *OHRS User Guide*. At any point in time, the Due To/From accounts for the entire hospital entity should sum to zero, because the amount owing to one fund is equal to the amount receivable from another. A non-zero net balance remaining on the balance sheet may mean that some activity has not been reported appropriately in the general ledger.

Exhibit 8

Net Balance Remaining in Due To/From Accounts

(hospitals reporting year-end balances of $1,000 or greater)

	1994/95 $ 000 # of hospitals	**1995/96** $ 000 # of hospitals	**1996/97** $ 000 # of hospitals	**1997/98** $ 000 # of hospitals	**1998/99** $ 000 # of hospitals
Due to Hospital (debit balance reported in asset account)	$39,620 44	$51,724 41	$64,689 38	$49,601 41	$38,215 35
Due from Hospital (credit balance reported in asset account)	$20,304 17	$28,775 15	$6,946 16	$5,847 11	$8,456 16
Net Amount Apparently "Due To" Ontario Hospitals	$19,316 61	$22,949 56	$57,743 54	$43,754 52	$29,760 51

Substantial net balances are being reported by Ontario hospitals (both debit and credit) when the Due To/From accounts are examined on an aggregated basis (i.e. all fund types are included.) The net difference between amounts reported as Due From and those reported as Due To other funds indicates Ontario hospitals had net Due From (i.e. receivable) positions of $19M, $23M, $58M, $44M and $30M, in the five fiscal years between 1994/95 and 1998/99. These are not balances being reported by only a small number of hospitals. Analysis of the data shows that one-quarter of Ontario hospitals reported a net Due From position in excess of $1 million.

There may be two causes for the Due To/Due From accounts not balancing to zero. It may be that:

- certain activities related to a hospital or its related entities have been excluded from accounts included in the trial balance submission; and/or,

- errors have been made in bookkeeping or accounting.

The actual cause of the unexpected finding of a non-zero net balance in the Due To/From accounts cannot be determined from the year-end trial balance data.

It is important to note that the findings presented in Exhibits 6 through 8 do not imply that, at the aggregate level, the financial activities of the hospitals are misstated. But these findings do highlight a caution for certain users of these administrative datasets, such as users developing

performance indicators, costing data, and funding formulas. These users will want to be particularly aware of this situation.

3.3.2 Findings Related to Unexpected or Unusual Account Balances

A trial balance is a listing of general ledger account balances at a certain date. Summing the individual account balances results in a value of zero since asset and expense accounts exist as positive (or debit) balances in the general ledger, and equity and revenue accounts exist as negative (or credit) balances. It is not unusual for a few accounts to sometimes have balances opposite that normally expected. This might occur, for example, when an asset account has a negative balance. This would be the situation when a bank account (cash is normally an asset) is in an overdraft position (causing the general ledger account to have a credit balance). Entries to reverse posting errors might also create temporal balances opposite to that normally observed. In general, however, it is expected that accounts with balances contrary to that expected according to accounting theory are few and immaterial in nature. [I]

Exhibit 9 provides details for asset accounts that were unexpectedly found to have a negative balance. Accounts appearing in the asset section of the trial balance, but whose balance is normally negative (such as contra accounts including Allowance for Doubtful Accounts and Accumulated Amortization, as well as Due From accounts) have been excluded from the results reported in this table.

For each asset type (Cash, Ministry of Health Receivables, etc.) the total dollar amount reported in an unexpected position (i.e. credit) is indicated, together with the number of hospitals whose account balances contribute to this value. The dollar amounts include balances reported in all fund types, as the appropriate accounting treatment of asset balances is not affected by the use of fund accounting concepts. Depending upon the year studied, between 30 and 43 asset accounts that would not normally have a credit balance were found to be in a credit position. For year-end reporting purposes, these asset accounts actually describe liabilities.

As noted earlier, it is not unusual to find hospitals reporting a negative cash position. These hospitals are in an overdraft position with their bank. Among the far more unexpected (and unusual findings) is the observation that one hospital in 1996/97 reported a negative *Patient Receivables* balance of $842,000 suggesting the hospital had been significantly overpaid by the patients to whom the hospital had provided care. Another hospital, in 1994/95, removed $120,000 more from its supplies inventory than it placed into inventory. Both situations have little face validity, and suggest inadvertent reporting errors.

[I] Reporting more than one line of data for a single account, even though summing the multiple data lines results in an appropriate balance, can also result in observing an individual record with an unexpected balance in an OHRS data submission. The study ensured that no duplicate lines of data were reported in trial balance submissions. Therefore, all observed unexpected account balances were year-end balances as reported by the hospital.

Exhibit 9

Asset Accounts with an Unexpected Closing Credit Position

Asset Account	1994/95 $ 000 # of accounts	1995/96 $ 000 # of accounts	1996/97 $ 000 # of accounts	1997/98 $ 000 # of accounts	1998/99 $ 000 # of accounts
Cash	$76,481 49	$150,229 50	$159,035 51	$99,707 47	$83,962 39
Ministry of Health Receivables	$344 6	$3,293 8	$827 5	$4,038 28	$11,338 27
Patients Receivables	$39 1	$65 1	$842 3	$35 1	$127 2
Other Receivables	$1,176 9	$29,054 9	$1,854 6	$4,644 2	$6,326 4
Inventory	$120 1	$36 1	$36 2		
Prepaid Expenses	$134 4	$3 1	$103 1	$131 1	$5 1
Other Current Assets	$22 6	$14 4	$522 6	$2 4	$55 8
Deferred Charges	$115 4	$8 3	$1 2	$38 4	$352 4
Long-term Investments	$90 1	$120 1	$120 1		
Other Non-Current Assets	$7 1	$13 1	$5,918 3	$6,505 1	$6,731 1
Property, Plant, Equipment (non-MOH reporting level)	$4,635 1	$5,111 1	-----	-----	-----
Major Equipment - undistributed	-----	-----	-----	-----	$3 1
Building Service Equipment	-----	-----	$565 2	-----	-----
Building	-----	-----	-----	$7,264 1	-----
Construction in Progress	-----	-----	$2,074 2	$1,736 1	-----
TOTAL of Asset Accounts in a credit position at year end	$83,163 83	$187,949 80	$171,899 84	$124,099 90	$108,900 87
TOTAL of Asset Accounts in an unexpected credit position at year end*	$4,682 34	$37,720 30	$12,864 33	$24,392 43	$24,938 48

* Asset accounts that might normally be found in a credit position (e.g. cash) have been removed from the calculation.

Some hospitals appear to consistently report selected asset accounts in a credit position over the four years studied. A study was made of the unexpected liability balances reported for these hospitals to see if, by chance, the hospital's accounting system was reporting debits as negatives and credits as positives. (This is opposite of the convention normally applied.) This was not found to be true. Hospitals reporting credit asset balances were not necessarily the same hospitals reporting liability balances in a debit position.

There are a number of factors that could account for finding unexpected credit balances reported in asset accounts. These factors include:

- inadequate asset management;
- poor internal controls;
- aggressive expensing practices which result in an expense being recorded which exceeds the value of the asset being expensed; and/or
- errors have been made in bookkeeping or accounting.

As the accounting transaction history which gave rise to the unexpected balance observed in the datasets examined in this study do not exist in the Ontario Hospital Financial Reporting System, it is not possible to determine which of the above factors are most responsible for the unexpected findings observed.

Exhibit 10 repeats the analysis undertaken for asset accounts, but instead focuses on identifying liability accounts that reported unexpected debit balances in the year-end trial balance submission. A notable observation is the large increase in the number of accounts and dollar value reported as debit liability balances in 1996/97. Examination of this increase suggests that some hospitals adopted reporting structures added in Version 3 of the *OHRS User Guide* prior to its formal implementation for 1997/98. For example, 28 hospitals used a new Version 3 *Accumulated Amortization* account for long-term deferred revenues, and reported these amounts appropriately as debit balances. These hospitals most likely took this step to comply with reporting requirements introduced in the *CICA Handbook*, but which were not reflected in Version 2 of the *OHRS User Guide.*

While the early adoption of Version 3 of the *OHRS User Guide* in order to satisfy "Generally Accepted Accounting Principles" as outlined in the *CICA Handbook* explains the observation that certain liability accounts had an unexpected balance position, other reasons to explain this observation include:

- poor management of liabilities (e.g., overpayment of creditors); and/or
- errors have been made in bookkeeping or accounting.

The reporting of revenues and expenditures also yielded some interesting findings. Over one-half of the hospitals in Ontario reported a debit amount as a closing balance in a revenue account in each of the years under study (Exhibit 11). Province-wide, the total dollars involved ranged from a low of $8 million in 1995/96 to $21 million in 1997/98. (Paymaster accounts implemented in Version 2 of the *OHRS User Guide* for 1996/97 and 1997/98, and contra revenue accounts for Allowance for Doubtful Accounts have been excluded from these totals.)

Exhibit 10

Liability Accounts with an Unexpected Closing Debit Position

Liability Account	1994/95 $ 000 # of accounts	1995/96 $ 000 # of accounts	1996/97 $ 000 # of accounts	1997/98 $ 000 # of accounts	1998/99 $ 000 # of accounts
Short -term Borrowings	$0 1	$2 2	$1 1	$1 1	$609 1
Accounts Payable	$391 3	$30 4	$283 3	$4,690 1	$10,933 3
Employee/Employer Remittances	$1,111 16	$485 23	$3,451 33	$670 26	$1,266 36
Accrued Liabilities	$112 9	$619 8	$676 9	$50 4	$534 7
Unearned Revenues	$14 2	$5 1	$13 1	$1 1	$6 1
Other Current Liabilities	$10,617 11	$22,341 14	$9,379 12	$18,805 9	$5,332 7
Deferred Revenues	$20 2	$815 2	$103 1	$39 1	$207 2
Long-term Borrowings	$42 1	-----	-----	-----	-----
Other Long-term Liabilities	$0 1	$426 2	$2,993 3	-----	$0 1
Long-term Deferred Revenues	-----	$1,039 2	-----	$1 1	$26,937 1
Long-term Deferred Revenues – Accumulated Amortization (Version 3 account used before April 1/98)	-----	-----	$77,635 46	-----	----
Undefined MIS account (used in a non-operating fund)	-----	$6 1	-----	$0 1	-----
TOTAL of Liability Accounts in a Debit Position at Year-end*	**$12,306 46**	**$25,766 59**	**$94,534 109**	**$24,255 45**	**$45,823 59**

***** Liability accounts that might normally be found in a debit position (e.g. Deferred revenue: Accumulated amortization) have been removed from the calculation.

On the expense side, over three-quarters of Ontario hospitals reported year-end non-compensation expense account balances that were in an unexpected credit position (Exhibit 12). The dollar amounts involved are non-trivial, averaging approximately $30 million at the system level during each year examined. Details can be found in Exhibits 11 and 12.

Exhibit 11

Revenue Secondary Accounts in an Unexpected Debit Position*

	1994/95 $ 000 # of accounts # of hospitals	1995/96 $ 000 # of accounts # of hospitals	1996/97** $ 000 # of accounts # of hospitals	1997/98** $ 000 # of accounts # of hospitals	1998/99** $ 000 # of accounts # of hospitals
Debit Balances in Revenue Accounts	$17,016 424 128	$8,482 486 126	$12,008 570 142	$21,510 570 139	$11,697 572 135

* Excludes allowance for doubtful account contra revenue accounts.
** Excluding paymaster account created in Version 2 of OHRS User Guide.

Exhibit 12

Expense Secondary Accounts in an Unexpected Credit Position

	1994/95 $ 000 # of accounts # of hospitals	1995/96 $ 000 # of accounts # of hospitals	1996/97 $ 000 # of accounts # of hospitals	1997/98 $ 000 # of accounts # of hospitals	1998/99 $ 000 # of accounts # of hospitals
Credit Balances in Compensation Expense Accounts (excluding Employee Benefits Clearing Accounts)	$47,654 1,304 156	$51,450 1,480 161	$50,107 1,551 162	$31,072 2,096 165	$34,191 1,949 151
Credit Balances in Non-compensation Expense Accounts	$21,290 1,648 192	$29,667 1,708 183	$35,535 1,867 188	$23,650 1,896 183	$31,891 1,714 169

It is interesting that a majority of Ontario hospitals are reporting unexpected balances for both revenue and expense accounts. One explanation might be that hospitals are reporting revenues for marketed services or other expense recoveries by booking these amounts directly to the related expense account in the general ledger. If recoveries (or charge-outs) exceed the value of the actual expenses, the result would be a credit balance in the year-end trial balance. This treatment of revenues generated through recoveries (or charge-outs) is inconsistent with the treatment required according to the *OHRS User Guide*, and thus it is unclear whether these balances represent inappropriate accounting practices or whether legitimate adjustments or re-allocations resulted in the balances observed.

The classification of revenues was also explored to determine whether revenues are being reported in a manner consistent with the restrictions implicit in fund-based accounting theory.

We limited our investigation to three revenue accounts: *Ministry of Health Global Funding*, *Ministry of Health Other Votes Funding* and *Provincial Government Revenue* for other sources of funding.

Table 8 details unexpected findings related to revenues being reporting in fund types not suitable for the revenue source as identified by the account description. For example, payments from the Ministry of Health as part of Global funding revenues must, by definition, be reported in the *Ministry of Health Operating Fund* (Fund Type 1). Likewise, Other Vote revenue should only be reported in Other Vote Fund (Fund Type 2).

Exhibit 13

Revenues Accounts Matched with Unexpected Fund Types

Revenue Account	1994/95 $ 000 # of accounts # of hospitals	1995/96 $ 000 # of accounts # of hospitals	1996/97 $ 000 # of accounts # of hospitals	1997/98 $ 000 # of accounts # of hospitals	1998/99 $ 000 # of accounts # of hospitals
Ministry of Health Global Funding Revenues appearing in Non-operating Funds	$39,946 55 25	$39,514 63 24	$42,457 64 30	$63,347 71 32	$47,072 67 30
Ministry of Health Other Votes Revenue Appearing in Non-other Vote Funds	$3,467 11 10	$11,240 17 14	$3,543 10 7	$2,628 9 7	$2,464 14 13
Provincial Government Revenue Appearing in Non-other Sources of Funding Funds	$5,465 27 18	$6,117 21 13	$6,365 19 11	$3,208 10 9	$3,373 11 9

We observed that in the first three years studied, approximately $40 million in money coded as Ministry of Health Global Funding revenue was not booked in the Operating Fund (Fund Type 1) as expected, but instead appeared in non-operating funds (Fund Types 2 through 9). This amount increased to $63 million in 1997/98 and then decreased to $47 million in the last year studied. Similarly, millions of dollars in revenues related to Other Votes were found booked to other fund types.

These findings reinforce the earlier observation that fund accounting principles appear to be being applied in an inappropriate and inconsistent manner. One conclusion to draw from these findings is that users of the Ontario Hospital Reporting System dataset need to exercise due diligence when extracting data elements to be used for decision-making purposes.

3.4 Discussion

These findings have wide-ranging implications. For example, the Joint Policy and Planning Committee uses these data in hospital funding formulae calculations. Prior to 1998/99, only Operating Fund (Fund Type 1) revenue and expenses were an integral part of the formulae. In the *Methodology Used to Calculate 1998/99 Adjustment Factors Funding Model*,[6] the Joint

Policy and Planning Committee noted that operating dollars (Fund Type 1) were probably being used to fund the deficits reported in Other Vote programs (Fund Type 2) and Other Sources of Funding programs (Fund Type 3). Therefore, it was decided that these deficit amounts would be rolled into inpatient acute care expenses because "it is probably a more accurate reflection of expenses.[2]" The findings in this report suggest that the Joint Policy and Planning Committee should also review other fund types to obtain an even more accurate measure of overall hospital expenditures.

Initiatives under way by various organizations to develop performance indicators and benchmarks for Ontario hospitals are using these OHRS data as an information source. The observations in this report have enormous implications for these endeavours. Unusual and unexpected balances in certain accounts mean that various exceptions need to be made to ensure indicators are accurately defined and appropriately reflect the performance the indicator is intended to measure. Without this understanding, the reliability and accuracy of indicators and benchmarks is severely compromised.

4.0 Conclusions

The reporting framework found in the *MIS Guidelines* and adapted for use in the *OHRS User Guide* provides a valuable classification structure for the collection and reporting of operational and financial information which, until recently, has been lacking. These data will serve to better support micro (individual hospitals) and macro (provincial and federal health portfolios) decision-making. Moreover, a national standard for data reporting enables comparison of key hospital-sector financial and statistical indicators between and within jurisdictions. Some data quality issues exist, but the Chart of Accounts structure appears to be generally strong.

As Ontario develops its capacity to evaluate the resource utilization, productivity, and efficiency of hospitals, the experience gained locally will have an international audience as health care systems throughout the world strive to maximize efficiencies through better decision support.

The findings from the two studies presented in this report suggest that the following steps may be appropriate:

1. A review of functional centre accounts used by three or fewer hospitals may identify opportunities to prune the OHRS account framework to remove accounts used by only a few hospitals. [I]

2. Additional guidance could be provided to hospitals in the *OHRS User Guide* regarding the application of fund accounting principles in the preparation of OHRS data submissions.

3. The comprehensive edit checks used to verify data received by the Ministry of Health from hospitals could be enhanced to identify unusual account balances, including findings such as:

    - revenue accounts being reported in a debit position
    - expense accounts being reported in a credit position
    - asset accounts being reported in a credit position (other than cash and contra asset accounts that might normally be found in a credit position)
    - liability accounts being reported in a debit position
    - fund balances that do not net to zero
    - unusual or unexpected deficit or surplus positions in different funds
    - additional tests of reasonableness could be incorporated into the data review process used to validate OHRS submissions from hospitals. For example, total nursing expenses divided by total nursing paid hours should result in a number that approximates current nursing wage rates.

[I] Many unused accounts support a more discrete classification of revenue and expenditure sources than is required to be submitted for provincial reporting purposes. It is therefore not recommended to prune accounts from the chart without further investigation to determine if, indeed, these accounts are unused.

We want to reiterate that this study does not purport to provide a comprehensive review of hospital compliance with Ontario Hospital Reporting System reporting requirements. In fact, there may be legitimate reasons for hospitals reporting unusual and unexpected balances.

This study does show, however, that users of Ontario Hospital Reporting System datasets must be cognisant of the scope of unusual and unexpected balances found in the database. As the *OHRS User Guide* is revised to accommodate changing reporting requirements, the findings in this study can be used to generate discussion aimed at improving the accuracy, completeness and reliability of these data.

The Ontario Ministry of Health[I] is in the enviable position of having sponsored the development of a comprehensive, province-wide database of financial and operational activity data. The Ministry and other stakeholders will benefit from the continued contribution of year-end trial balance data to this database. Exciting opportunities to use these data to evaluate funding models, demonstrate accountability, and improve the health system will emerge in the years ahead.

Those who use Ontario Hospital Reporting System data, and those who generate these data, both have a vested interest in working together to enhance the reliability and utility of the accounting data collected to support decision-making in the Ontario hospital system. This study provides a forum to help move this discussion forward.

[I] The Ontario Ministry of Health became the Ontario Ministry of Health and Long Term Care after this study was completed.

Acknowledgements

An advisory committee of experts in hospital data reporting provided invaluable assistance to the research team during the preparation of this ICES report. The authors would like to recognize and thank Terry Campbell, Canadian Institute for Health Information; Sandra Chase, Ontario Ministry of Health; Olive Collaco, Ontario Ministry of Health; John McKinley, Ontario Ministry of Health; and Laura Pisko-Bezruchko, Ontario Ministry of Health, for their insightful comments and ideas during the research process. Errors and omissions are the responsibility of the authors.

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