Provincial Report on the State of Health Records Departments in Ontario Hospitals

Health Results Team for Information Management

December 2005
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Bibliography
Acknowledgements

The Producing Better Data stream of the Health Results Team for Information Management (HRT-IM) would like to express sincere thanks to the following hospitals and individuals who contributed their time and effort by responding to the survey and providing the requested documents.

Contributing Hospitals

Alexandra Hospital
Alexandra Marine & General Hospital – Richard Bedard
Almonte General Hospital – Beth LePack
Anson General Hospital – Suzette Neilands
Atikokan General Hospital – Teresa Adair
Baycrest Centre for Geriatric Care – Gwen Yacht
Bingham Memorial Hospital – Tracy Bouchard
Blind River District Health Centre – Deborah Thelland
Bluewater Health – Kathy Breault
Brant Community Healthcare System – Tricia Ladouceur
Bridgepoint Health – Elsie Lui
Brockville General Hospital – Joan Hunter
Cambridge Memorial Hospital – Sandra Odorico and Dean Martin
Campbellford Memorial Hospital – Sandra Beatty
Carleton Place & District Memorial Hospital – Valerie Sherrard
Chatham-Kent Health Alliance – Karen Waymouth
Children's Hospital of Eastern Ontario – Debbie Cowan
Collingwood General and Marine Hospital – Anne Gamble and Toni Hannon
Cornwall Community Hospital – Susan Merkley
Deep River & District – Sandy Presley
Dryden Regional Health Centre – Robert Van Oorf
Englehart & District Hospital – Christine Brownlee
Esplanade General Hospital – Lisa Tallon
Four Counties Health Services – Lorraine Craig
Grand River Hospital – Gloria Cardoso
Grey Bruce Health Services – Mary Jane Dandeno, Gloria Ringwood, Pamela Matheson, Lisa Logan
Groves Memorial Community Hospital – Lyn Schmeler
Guelph General Memorial Hospital – Valerie Anderson
Haldimand War Memorial Hospital – Catharine Cercone
Haliburton Highlands Health Services – Kellie Churko
Halton Healthcare Services – Marci MacDonald
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Hamilton Health Sciences, Juravinski Cancer Centre – Karen Neil
Hawksbury and District General Hospital – Caroline Schmidt
Headwaters Health Care Centre – Elaine Cathcart
Homewood Health Centre – Jocelyne Levesque
Hopital Glengarry Memorial Hospital – Linda Ramsay
Hopital Montfort – Lucie Piche
Hopital Notre Dame Hospital – Suzanne Allaire
Homepayne Community Hospital – Karen Wojtalik
Hotel Dieu Grace Hospital – Alison Anderson and Maureen Robbins
Hotel Dieu Health Sciences Hospital – Janice Latam
Humber River Regional Hospital – Alma Boyd
Huntsville District Memorial Hospital – Deborah Phillips
Huron Perth Healthcare Alliance (4 hospitals) – Linda Lauzon
James Bay General Hospital – Thierry Sereau
Joseph Brant Memorial Hospital – Julie DePaul
Kemptville District Hospital – Jenny Salte
Kingston General Hospital – Barbara Nayler
Kirkland and District Hospital – Sue Olson
Lady Dunn Health Centre – Betty McCrea
Lady Minto Hospital – Nicole Prior
Lake of the Woods District Hospital – Beverly Raby
Lakeridge Health Corporation – Maria Muia and Janet Adams
Leamington District Memorial Hospital – Sandra Lariviere
Lennox and Addington County General Hospital – Bonnie Haight
Listowel Memorial Hospital – Lynne Hopper
London Health Sciences Centre – Judy Farrell, Brenda O'Reilly-Bruneau, Lori El Achqer, Denise Parrack
Manitoulin Health Centre (Little Current) – Beth Dykalski
Manitoulin Health Centre (Mindemoya)
Manitouwadge General Hospital – Lee Krinski
Markham Stouffville Hospital – Elsie Lui
Mattawa General Hospital – Diane McGee
Mental Health Centre Penetanguishene – Brigitte Quesnelle
Mount Sinai Hospital – Usha Chidambaram
Niagara Health System – Catherine Esposito
Nipigon District Memorial Hospital – Jody McKie
Norfolk General Hospital – Lucy DiBartolomeo
North Bay General Hospital – Wanda Doupe
North Simcoe Hospital Alliance – Louise Robertson
North Wellington Health Care – Marg Avent
North York General Hospital – Cheryl Harrison
Northumberland Hills Hospital – Renee Gallagher
Orillia Soldiers’ Memorial Hospital – Charlene Ley
Pembroke Regional Hospital – Mary Christie-Wong
Perth and Smith Falls District Hospital – Judy Town
Peterborough Regional Health Centre – Maureen Moher and Brenda Hill
Providence Continuing Care Centre – Madeline Halladay
Queensway Carleton – Michael Cohen
Quinte Health Care – Mike Meyette
Red Lake MCM Hospital – Janice Mullin
Renfrew Victoria Hospital – Marie Murray
Riverside Health Care Facilities Inc. – Laurie Lundale
Ross Memorial Hospital – Muriel Jones
Rouge Valley Centenary – Yogini Chaudhari
Rouge Valley Health System/RVAP – Janice Yorke
Royal Ottawa Health Care Group – S. Purvis
Royal Ottawa Health Care Group – Brockville Psychiatric Hospital – S. Purvis
Royal Victoria Hospital (Barrie) – Linda Long
Sault Area Hospital – Janice Soltys
SCO Health Service – Denise Rousseau-Pistille
Sensenbrenner Hospital – Sabina Reckzine
Sioux Lookout Meno-Ya-Win Health Centre – Cindy Hunt
Smooth Rock Falls Hospital – Melonie Loubert
South Bruce Grey Health Centre - Heather Anne Berry
South Huron Hospital – Maureen Cole
South Muskoka Memorial Hospital – Frankie Dewsbury and Irene Burton
Southlake Regional Health Centre – Anthony Reddick
St. Francis Memorial Hospital – Maxine Smaglinskie
St. John's Rehab Hospital – Frances Murphy
St. Joseph's Care Group (Hospital Site) – V.A. Polischuk
St. Joseph’s Care Group (Psychiatric Site) – V.A. Polischuk
St. Joseph’s General Hospital – Marg Barek
St. Joseph’s Health Centre – Agnes Maxwell
St. Joseph’s Health Centre (Guelph) – Melissa Kovar
St. Joseph's Healthcare (Hamilton) – Marnie Fletcher and Virginia Pullar
St. Mary's General Hospital – Roberta MacDonald
St. Michael’s Hospital – Lisa Berger
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Stevenson Memorial Hospital – Steve Miller
Strathroy Middlesex General – Kathy Grosvenor
Sudbury Regional Hospital – Janet Magee
Sunnybrook & Women's College Health Sciences Centre – Rosemary Walo
Temiskaming Hospital – Jeff Renaud
The Credit Valley Hospital – Lynne Turner
The Hospital for Sick Children – Debi Senger
The Ottawa Hospital – Debbie Read
The Scarborough Hospital – Norma Mills
Thunder Bay Regional Health Sciences Centre – Heidi Greenwell
Tillsonburg District Memorial Hospital – Debra Waite
Timmins & District Hospital – Diane Meunier
Toronto East General Hospital – Kerry Johnson
Toronto Grace Hospital
Toronto Rehabilitation Institute – Connie Lohoefer
Trillium Health Centre – Valerie Alston
University Health Network – Rose Ann Pacheco
Weeneebayko General Hospital – Violet Loughery
West Haldimand General Hospital – Catharine Cercone
West Lincoln Memorial Hospital – Cathy Hesch and Sarah Wassenaar
West Nipissing General Hospital – Lise Roberge
West Park Healthcare Centre – Martha Singleton
West Parry Sound Health Centre – Trudy Orr
Whitby Mental Health Centre – Judi Bickle
William Osler Health Centre – Judy Middleton, Angie Armstrong and Beth Smith
Wilson Memorial General Hospital – Paul Cloutier
Winchester District Memorial Hospital – Jeanette Martin
Windsor Regional Hospital – Julie Durocher
Wingham and District Hospital – Lynne Hopper
Woodstock General Hospital – Maggie Nielsen
York Central Hospital – Maria Manini
HRT-IM also gratefully acknowledges the following individuals for providing their knowledge and feedback in the development of this report:

- Brenda Antliff, Ministry of Health and Long-Term Care
- Gail Crook, Canadian Health Information Management Association
- Lynne Hopper, Ontario Health Information Management Association
- Deb Tetreault, St. Joseph’s Health Care
- Cheryle Panas, Salumatics
- Marilyn Sgarbossa, Queensway-Carleton Hospital
- Kerry Johnson, Toronto East General Hospital
- Marci MacDonald, Halton Healthcare Services
- Teresa Adair, Atikokan General Hospital
- Tavia Rudd, University Health Network
- Barbara Robinson, University Health Network
- Anne Marion, Peterborough Regional Hospital
- Janet Adams, Lakeridge Health Corporation
- Andrea Gabber, Senior Health Economist, Ontario Hospital Association
- Caroline Heick, Canadian Institute for Health Information
- Heather Richards, Canadian Institute for Health Information
- Alison Bidie, Canadian Institute for Health Information
- Ann Chapman, Canadian Institute for Health Information
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Executive Summary

In September, 2004, the Health Results Team for Information Management was established by the Ministry of Health and Long-Term Care as part of a province-wide effort to improve the quality and timeliness of data. A key element of the strategy involves establishing Local Data Management Partnerships for Health Records departments to consolidate, coordinate and standardize local data management functions.

To better understand the challenges related to data management and to identify possible solutions to address these issues, we developed the Survey of Current Practices in Ontario Hospitals’ Health Records Departments. It is intended that the results and recommendations from this report will guide the work of the Local Data Management Partnerships.

The survey was designed to assess various aspects of health records, including: organizational structure, human resources, data management process and practices, education, standards and technology. The survey was distributed to 149 hospital corporations across Ontario; responses were received from 143 of these hospitals, for an overall response rate of 96%.

The results of the survey identified a number of areas that need to be addressed in order to improve the quality and management of clinical data. Based on these results, we discussed and developed appropriate recommendations in consultation with various stakeholders. In general, the results and recommendations in this report confirm and support previous data quality studies.

One of the major findings of this survey is that although almost all hospitals have an individual within their organization responsible for privacy, only 63% of hospitals have an individual responsible for data quality. Even fewer hospitals have implemented a formal data quality process or plan. The following recommendations enable hospitals to address this issue:

• Develop and implement standard reporting requirements for provincial adoption (#16).
• Develop standard data quality indicators for incorporation into the Wizard for Hospital Indicator Calculation (WHIC) tool for monitoring at the hospital level (#17).
• Introduce Local Data Management Coordinators to support the Local Data Management Partnerships (#18).
• Establish a provincial Data Consistency Working Group (#19).
• Develop a standard audit tool for roll-out across the province (#21).

While the survey showed that hospitals need more support for their data quality initiatives, the survey also demonstrated other contributors to poor data quality. One of the major contributors to poor data quality is that many hospitals continue to use hospital-specific guidelines or undocumented “rules of thumb” either in place of, or in addition to, Canadian Institute for Health Information coding standards. The following recommendations will assist hospitals in complying with existing coding standards:

• Increase the understanding of existing coding standards through the development of specific, practical examples (#20).
• Link coding standards to electronic coding book (#22).

The other contributor to variation in coded data is chart completion and documentation. Our study found that only 11% of hospitals stated that discharge summaries are completed and signed by a physician within 48 hours. In fact, on average, it takes physicians 35 days to complete their charts, and in one hospital, up to 730 days! In addition, our survey demonstrated that although almost all hospitals have a chart completion policy, only 58% of them find it effective. The results of the survey show that 63% of hospitals submit abstracts to Canadian Institute for Health Information based on incomplete charts. Incomplete charts and poor documentation often result in assigning codes based on assumption or inference, which ultimately leads to variation and inferior data quality.
The following recommendations will engage physicians and provide hospitals with tools and guidelines that lead to improved documentation.

- Establish a Physician Documentation Expert Panel to engage physicians and other stakeholders in addressing chart documentation issues and to promote timely, accurate and complete documentation by physicians through the development of guidelines and tools, including such things as (#10):
  - Physician education package
  - Chart completion policy
  - Recommendations to College of Physicians and Surgeons of Ontario, and
  - Guidelines for including chart documentation in medical school curricula.
- Introduce data elements into the province/institution specific project field in the Discharge Abstract Database (DAD) for identifying charts coded incomplete (#11).
- Review and recommend, as appropriate, revisions to Regulation 965, Section 4 of the Public Hospitals Act to reflect current practice (#12).

The lack of standards and education for registration staff also contribute to the overall poor quality of clinical data. While our survey found an equal distribution among hospitals using decentralized versus centralized model, many hospitals found the decentralized registration model to be ineffective. The main reason given for its ineffectiveness was that no single individual in a decentralized model is responsible for the quality or timeliness of the data collected. The following recommendations address the lack of standards and education for the registration function:

- Develop provincial registration standards (#13).
- Develop an online standard registration education package (#14).

While it is important to address the role of hospitals and physicians in improving data quality, it is equally important to also focus on the Health Information Management (HIM) profession and provide them with the appropriate tools and support. One of the major concerns of the profession is that hospitals permit non-certified coders to code acute inpatient and ambulatory care data. According to our survey, 12% of hospitals do not require that coders be certified. The following recommendations intend to promote and support the HIM profession:

- Introduce mandatory Continuing Professional Education (CPE) credits to maintain HIM certification (#2).
- Mandate that only certified Health Information Management (HIM) professionals code and abstract clinical data for Discharge Abstract Database and National Ambulatory Care Reporting System (#3).

In addition to certification, it is important to ensure that coders are provided with adequate education and training. Our survey found that location of workshops and shortage of relief staff were cited as reasons that many coders were unable to attend CIHI workshops. The following recommendations augment existing education resources and enable coders from across the province to access education:

- Mandate the completion of a province-wide coder education and assessment program (#5).
- Provide training on use of the coding query tool (#7).
- Improve access to educational materials (#8).

It is important to provide education and training for practicing HIM professionals as well as for those who are entering the profession. Survey respondents indicated that 49% of vacancies occurred in Coding and Abstracting. The most common reason given for having vacancies across all areas was a lack of qualified applicants. Discussions with stakeholders revealed that recent graduates are often not adequately prepared to enter the workforce as a coder, and need to be provided with additional practical experience. The following recommendations address the issue of providing sufficient training to recent graduates:

- Upgrade the coding component of the HIM program curriculum (#4).
- Reconvene the Canadian Health Information Management Association (CHIMA) practicum task force to evaluate the effectiveness of the practicum placement required by HIM programs (#9).
Beyond education, the HIM profession has also expressed a need to develop and share common practices, guidelines and other tools to support their daily data management functions. For example, the results of the survey indicate that only half of hospitals have productivity standards. Two-thirds of hospitals stated that they would like provincial productivity standards developed. Another concern was that almost 20% of hospitals do not have Canadian Institute for Health Information edits built into abstracting software; hospitals would like to have a list of specifications that they can provide to their vendor. The following recommendations will facilitate the development and sharing of common practices and guidelines among Health Records departments in the province:

• Create a compendium of HIM practice guidelines to support and improve the operations of Health Records departments, including such things as (#6):
  - Productivity standards
  - Concurrent coding practices
  - Minimum chart completion guidelines
  - Vendor requirement specifications
  - Operational efficiency improvements, and
  - Use of reference documentation and tools.
• Establish a system for identifying appropriate workload standards for Health Records department functions (#15).

Another approach to facilitate sharing of best practices is to establish partnerships with other organizations. Our survey found that while more than half of hospitals are involved in partnerships, less than 10% of these partnerships involve Community Care Access Centers. The following recommendation will establish formal partnerships among hospitals and Community Care Access Centers within a Local Health Integration Network:

• Establish Local Data Management Partnerships that will be aligned with the Local Health Integration Networks, and will facilitate collaboration between health care providers to consolidate, coordinate and standardize local data management functions through best practices, policies, standards and tools (#1).

The survey, in addition to confirming the findings of previous data quality studies, also made inquiries about data management functions and processes that have not been previously investigated. For example, questions about staff shortages, vacancies and unions have not been studied at a provincial level. Other areas of investigation that have not been previously studied include technology. Unlike most other provinces that employ only one or two abstracting software vendors, Ontario uses ten different vendors for abstracting, and a total of 48 vendors across all Health Records functions. These results are of interest at this point. It is intended that this additional information will be useful in the future work of the Local Data Management Partnerships.

In conclusion, this survey confirmed many of the findings from previous data quality studies, including the need for more standards, education and improved chart documentation and completion. Several of the recommendations developed in this report support those that have been proposed in the past, and many have already been initiated by the Ministry of Health and Long-Term Care or other organizations. It is intended that the Local Data Management Partnerships and the committees that will be established to support them, will ensure that these recommendations will be implemented.
1 Introduction

In September, 2004, the Health Results Team for Information Management (HRT-IM) was established by the Ministry of Health and Long-Term Care (MOHLTC). This was part of a province-wide effort to improve the quality and timeliness of the data available to the MOHLTC and its partners and to more effectively manage health system information.

The Health Results Team for Information Management is comprised of four streams:

- **Producing Better Data** to ensure that the data describing cost, quality, and resources in our system is faster, accurate, and more comprehensive while reducing overall costs of collection.
- **Measuring Performance for Change** to transform data into measures that allow tracking of progress against key goals, predicting future performance, and integrating the system around key strategies.
- **Supporting Evidence-based Decisions** to integrate the data and measures into decision support structures that will help the MOHLTC respond to urgent requests for information, identify long-term risks and priorities and inform Local Health Integration Networks (LHIN) decisions.
- **Increasing System Accountability** to develop policies and processes to ensure that data and measures flow along clear lines of reporting and responsibility to support continuous improvement of performance, and in the long run, foster trust in an accountable system.

A key element of the Producing Better Data stream of work involves establishing Local Data Management Partnerships for health record practitioners to consolidate, coordinate and standardize local data management functions. This would be achieved through the sharing and adoption of best practices, policies, standards and tools. The objectives of these partnerships are to improve the quality of the data, increase the efficiency of local data management functions and make more effective use of Health Information Management (HIM) resources.

1.1 Purpose of Survey

To better understand the challenges related to health records management and to identify possible solutions to address these issues, the team working on the Producing Better Data stream developed the Survey of Current Practices in Ontario Hospitals’ Health Records Departments. This survey was designed to assess various aspects of HIM, including: organizational structure, human resources, data management processes and practices, data quality, education, standards, technology and best practices. It is intended that the results and recommendations from this survey will guide the work of the Local Data Management Partnerships.

1.2 Background on Health Information Management

HIM functions that occur in a hospital include, but are not limited to, the following five components:

- Registration
- Record Completion
- Coding and Abstracting
- Data Processing
- Information Reporting.

Registration occurs at the time when a patient seeks care in the hospital setting. The clerk documents the demographic and provider information for the patient. The patient is then admitted to the hospital and provided with treatment, or provided with outpatient or surgical day care services. The clinical team is then responsible for documenting the specific events affecting the patient during the current episode of care. Although the emphasis is placed on the current episode of care, the patient’s health record also contains pertinent facts of the individual’s health history, including all past and present medical conditions, illnesses and treatments. Once the patient is discharged or transferred, the patient’s health record is completed and reviewed. A HIM professional then codes and abstracts the information. The data is processed and edited for submission to the Canadian Institute for Health Information (CIHI), and reports are generated for analysis.
1.3 Previous Studies

A number of studies have been conducted on the quality of clinical data in Ontario and across Canada. The findings in this report are compared with the key studies described below. Where appropriate, the findings from these studies have been incorporated into this report; additional findings are included in the appendices.

In 2000, the CIHI published a report entitled “Improving Timeliness of Discharge Abstract Database Data”. This report was based on results from a national survey of Canadian acute care facilities in selected provinces on the timeliness of discharge abstract data submitted by hospitals. The purpose of the survey was to examine data collection and submission processes in hospitals to determine what variation exists in HIM practices. Additional results of this report are included in Appendix A.

Subsequently, in August 2002, the Ontario Clinical Data Quality Task Force published a report called “Understanding and Improving the Quality of Health Care Data in Ontario”. The Task Force was initiated by the Ontario Health Information Management Association (OHIMA, formerly the Ontario Health Records Association) in 2000 to identify critical problems in the quality of clinical data and to explore ways to overcome these problems. Membership on this task force included:

- Canadian Institute for Health Information
- Central East Health Information Partnership
- Institute for Clinical Evaluative Sciences in Ontario
- Ministry of Health and Long-Term Care
- Ontario Association of Community Care Access Centres
- Ontario Health Records Association (now OHIMA)
- Ontario Hospital Association
- GTA Coding Quality Network, and
- University of Toronto.

The Task Force considered several sources of data in its deliberations: chart audits conducted by CIHI; a survey of hospital health records departments; and focus groups with health record professionals. The recommendations focus on: (i) the reduction of errors in data through the development of standards; (ii) improved data production and use through the identification and publication of best practices in health records departments; and (iii) improved credibility for data through research, monitoring and coordination of data quality. Additional results of this report are included in Appendix B.

In 2003, a Pilot Clinical Data Quality Audit Project was conducted on Ontario acute inpatient clinical data. The main purpose for the study was for the MOHLTC to gain a better understanding of the observed variations in hospital case mix and to review coding practices in a sample of Ontario hospitals. The results showed that the most significant causes of the variation in hospital case mix were co-morbid diagnosis typing discrepancies and misidentification of the Most Responsible Diagnosis. There were many important discrepancies found between the original and re-abstracted records which had large impacts on expected length of stay, resources and the correct grouping. The results found in this study raised concerns about the quality of the clinical data being submitted in Ontario.

A national survey of Health Record Professionals called “Taking Stock” was developed by Canadian Health Information Management Association (CHIMA, formerly Canadian Health Records Association) and Salumatics
(formerly THiiNC iMi) in 2003\(^4\). The survey was designed to develop a snapshot of the current health record environment across the country. Supplementary results of this report are included in Appendix C.

A survey was conducted in 2004 by the University of Toronto, CHIMA, and the MOHLTC and a report was published entitled “From Practitioners to Professionals: What’s Ahead for Health Information Management?”\(^5\). Further results of this report are included in Appendix D.

A Re-abstraction Study of the Ontario Case Costing Facilities for Fiscal Years 2002/2003 and 2003/2004 was conducted in 2005 by the MOHLTC, CIHI and CHIMA to review the clinical coding practices of Ontario’s ten case costing hospital corporations\(^6\). One of the principle findings was that chart documentation was found to be the most significant contributor for all discrepancies noted in the study; chart documentation was often found to be illegible, incomplete and ambiguous. Another major data quality issue found was the difficulty in identifying a diagnosis that significantly contributes to the patient’s length of stay or resources used during the visit, i.e., applying diagnosis typing standards. The study also demonstrated that case costing facilities are not similar in their coding practices; difference in the way facilities code diagnoses, interventions and assign significance affect the output variables from CIHI’s grouping methodology. This large re-abstraction study identified and confirmed that data quality issues exist in the case costing data analyzed.

In addition to the study, a profile of data management practices was completed by the case costing hospitals\(^7\). A summary of these profiles is included in Appendix E.

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\(^1\) Canadian Institute for Health Information. \textit{Improving Timeliness of Discharge Abstract Database Data}. 2000.


\(^3\) Ontario Ministry of Health and Long-Term Care, Canadian Institute for Health Information, Canadian Health Record Association and Ontario Health Record Association. \textit{Pilot Clinical Data Quality Audit Project}. 2003.


\(^5\) Virginia Flintoff, Gail Crook and Helen Whittome. \textit{From Practitioners to Professionals: What’s Ahead for Health Information Management?}, 2004.


\(^7\) Profiles of Ontario Case Costing Hospitals from \textit{Re-abstraction Study}, 2005.
2 Methodology

2.1 Survey Development

The overall results of the survey are summarized in this report. The results in this report have also been analyzed by hospital type: teaching, community and small. Taking Stock (2003) also recognized the importance of distinguishing between the urban/rural split when reviewing their survey responses, and organized their results by hospital type. This distinction between hospital types is important to acknowledge in reviewing the results as practice patterns and resource allocation often differs greatly in small rural settings versus large urban teaching sites. A subset of these results has also been analyzed and summarized at a Local Health Integration Network (LHIN)-level to guide the Local Data Management Partnerships in their data quality initiatives.

2.2 Responding Organizations

The survey was distributed to 149 hospital corporations across Ontario; responses were received from 143 of these hospitals, for an overall response rate of 96%. The response rate by hospital type is as follows:

- 96% of teaching hospitals (N=24)
- 100% of community hospitals (N=79)
- 89% of small hospitals (N=46)

NB: “N” represents the number of hospitals

The survey was mailed to the Director of Health Records and the Chief Executive Officer (CEO) for each hospital. Due to delays in the survey reaching the appropriate individuals, the two-week deadline for hospitals to complete the survey was extended. The survey requested respondents to provide contact information so that subsequent correspondence could be done electronically.

2.3 Report Layout

The report is organized into six components: Executive Summary, Introduction, Methodology, Results, Recommendations and Conclusions. The results are summarized into the following six sections:

- Organizational Structure
- Human Resources
- Data Management Practices
- Standards
- Education and Certification, and
- Technology.
3 Results

The findings from the survey are summarized into the following six areas:

- Organizational Structure
- Human Resources
- Data Management Practices
- Standards
- Education and Certification, and
- Technology.

Each area is further broken down into sections that reflect the questions from the survey. Each section summarizes the findings from the survey and where appropriate, makes comparisons to the results of previous data quality studies. In general, the results from this survey confirm the findings of previous data quality studies.

3.1 Organizational Structure

3.1.1 Leadership Distribution

Hospitals were asked whether their organization had a Director of Health Records or a Manager of Health Records. The results indicate that the majority of hospitals have a Director or a Manager. Only 21% have both a Director and a Manager of Health Records, and 8% of responding organizations have neither. Figure 1 illustrates the distribution of leadership in Health Records departments amongst Ontario hospitals.

Figure 1 – Distribution of the Leadership in Health Records departments (N=143)

The results for the distribution of leadership were then analyzed by hospital type. While it was common for teaching hospitals to employ both a Director and Manager of Health Records, none of the small hospitals followed this practice. Conversely, almost 20% of small hospitals have neither a Director nor a Manager, while less than 5% of teaching hospitals have neither. This comparison is shown in Figure 2.
Figure 2 – Distribution of leadership roles by hospital type  
(Teaching hospitals N=23, Community hospitals N=79, and Small hospitals N=41)

3.1.2 Relationship with Other Departments

The survey asked hospitals about the relationship between Health Records and other departments, and whether these relationships had formal reporting structures. The results showed that most Health Records departments are formally linked with the Registration Department. Table 1 below indicates the percentage of Health Records departments that are linked to other departments and the percentage of those that have a formal reporting relationship to another department.

<table>
<thead>
<tr>
<th>Department</th>
<th>Percentage of hospitals whose Health Records departments have a relationship with another department</th>
<th>Percentage of hospitals where that relationship is formal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>Finance</td>
<td>64%</td>
<td>44%</td>
</tr>
<tr>
<td>Decision Support</td>
<td>52%</td>
<td>54%</td>
</tr>
</tbody>
</table>

There is little variation by type of hospital in Health Records departments having a relationship with Registration. It is more common for smaller hospitals to have a relationship with Finance than for larger hospitals, whereas more teaching hospitals tend to have a relationship with Decision Support than smaller hospitals.

When asked if there were additional departments that the Health Records department had a relationship with, 23% of hospitals indicated that there were other departments; the most common was Information Management or Technology.
Some of the survey respondents provided suggestions on the relationship of Health Records with other departments, including:

- Improving the communication between Finance and Health Records to ensure the process for data submission is well understood by the clinical teams
- Aligning Registration, Health Records and Decision Support in terms of communication and reporting, and
- Employing a single Manager of Health Records to oversee Registration at each hospital.

In the survey conducted in 2004, all respondents believed that the Health Records department should report to a Vice President of a HIM or a Chief Information Officer. Those who were currently reporting to Finance believed that reporting to a Vice President of HIM and Vice President of Finance would be preferable.

### 3.1.3 Privacy

The questionnaire asked organizations whether they had an individual responsible for privacy. Overall, 94% of responding hospitals indicated that they have an individual within their organization responsible for privacy issues. The most common title for this individual was Privacy Officer, or Chief Privacy Officer. The limitation noted upon collection of the results was that the question did not ask the respondent to specify if the individual was employed by the Health Records department. Consequently, the results do not indicate what percentage of the privacy individuals are Health Records staff or their level of training or expertise in the area. Comments provided in the survey mentioned that it is often management in the Health Records department who look after privacy issues and assume these duties in addition to their regular responsibilities. The results by hospital type for having an individual responsible for privacy are as follows:

- 91% of teaching hospitals (N=23)
- 96% of community hospitals (N=79)
- 90% of small hospitals (N=41)

### 3.1.4 Data Quality

The questionnaire asked organizations whether they had an individual responsible for data quality. Overall, 63% of responding hospitals indicated that they have an individual within their organization responsible for data quality. There was little consistency among hospitals on the title for this individual, but they were commonly referred to as Analysts. Again, the limitation noted upon collection of the results was that the question did not ask the respondent to specify if the individual was employed by the Health Records department. Consequently, the results do not indicate what percentage of the data quality individuals are Health Records staff or their level of training or expertise in the area. The results by hospital type for having an individual responsible for data quality are as follows:

- 65% of teaching hospitals (N=23)
- 59% of community hospitals (N=79)
- 59% of small hospitals (N=41)

### 3.1.5 Registration

The questionnaire asked hospitals whether they use a centralized or decentralized model for registration. There seemed to be an even split between the two models: 42% of hospitals register patients at one central location (centralized model), while 44% of hospitals register patients in various areas independent from each other (decentralized model). Approximately 14% of hospitals responded that they use components of both models (N=142).

Figure 3 below demonstrates the use of each type of model for registration by hospital type. Teaching hospitals are more likely to use a decentralized model, and small hospitals are more likely to use a centralized one. It is primarily teaching and community hospitals that use components of both systems.
Although the decentralized model was more common overall, it was also the model that most hospitals felt to be ineffective. The rates and reasons for why each type of model was ineffective are provided in Table 2.

**Table 2 – Rates and reasons for ineffectiveness in Registration models**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentage Ineffective</th>
<th>Reasons why model was ineffective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized</td>
<td>59</td>
<td>12%</td>
<td>* There is no 24/7 registration staff (no weekends, no nights)</td>
</tr>
<tr>
<td>Teaching</td>
<td>4</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>26</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>29</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Decentralized</td>
<td>63</td>
<td>32%</td>
<td>* More prone to data quality issues</td>
</tr>
<tr>
<td>Teaching</td>
<td>14</td>
<td>50%</td>
<td>* No one person responsible for registration function or registration data quality</td>
</tr>
<tr>
<td>Community</td>
<td>38</td>
<td>32%</td>
<td>* Does not ensure timely or accurate data collection</td>
</tr>
<tr>
<td>Small</td>
<td>11</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Components of Both</td>
<td>20</td>
<td>20%</td>
<td>* Ineffectiveness primarily due to decentralized portion for the same reasons as stated above</td>
</tr>
<tr>
<td>Teaching</td>
<td>5</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>14</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>1</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>
A focus group’s feedback that was part of a previous study identified that the problem with a decentralized model is that no single individual is responsible and accountable for registration information. In a decentralized model, individuals responsible for registration may have limited training and multiple responsibilities.

Feedback that was received from our survey offered potential solutions to the issues regarding decentralized registration. These are listed as follows:

- Make decentralized staff accountable to the Manager, Corporate Registration for use of the system; have the manager train the staff and audit the system; and develop corporate registration standards
- Implement a team structure that pulls all areas together; register patients within seven days after visit and monitor all decentralized registration data by a data quality technician
- Have all registration areas report to a Manager of Registration
- Enable training, education, and review of processes; and improve computer data checks
- Establish registration standards
- Establish Corporate Data Quality Committee to conduct internal scan of registration challenges
- Identify one individual to be responsible for monitoring registration data quality on a daily basis, and
- Manage registration centrally; have a data quality coordinator within the registration service.

### 3.1.6 Staffing Level

Hospitals were asked to report the average number of full time equivalents (FTEs) for each function in the Health Records department. Table 3 shows the average number of FTEs that hospitals reported overall and for each function, as well as results for all hospitals (Combined) and separated by hospital type.

#### Table 3 – Average FTEs by function and hospital type

<table>
<thead>
<tr>
<th>Type of Staff</th>
<th>Combined (Average FTE)</th>
<th>Teaching Hospitals (Average FTE)</th>
<th>Community Hospitals (Average FTE)</th>
<th>Small Hospitals (Average FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>4.8 (N=136)</td>
<td>11.1 (N=23)</td>
<td>4.2 (N=78)</td>
<td>1.2 (N=35)</td>
</tr>
<tr>
<td>Coding and Abstracting</td>
<td>6.5 (N=127)</td>
<td>11.2 (N=22)</td>
<td>7.0 (N=75)</td>
<td>1.7 (N=30)</td>
</tr>
<tr>
<td>Decision Support/ Data Analysis</td>
<td>1.5 (N=78)</td>
<td>3.0 (N=15)</td>
<td>1.3 (N=53)</td>
<td>0.3 (N=10)</td>
</tr>
<tr>
<td>Release of Information</td>
<td>1.5 (N=102)</td>
<td>3.0 (N=22)</td>
<td>1.2 (N=65)</td>
<td>0.6 (N=15)</td>
</tr>
<tr>
<td>Research</td>
<td>6.2 (N=18)</td>
<td>12.1 (N=9)</td>
<td>0.4 (N=7)</td>
<td>0.0 (N=2)</td>
</tr>
<tr>
<td>Supervision/ Management</td>
<td>1.8 (N=116)</td>
<td>3.7 (N=19)</td>
<td>1.6 (N=68)</td>
<td>0.9 (N=29)</td>
</tr>
<tr>
<td>Risk Management/ Quality</td>
<td>1.2 (N=40)</td>
<td>2.5 (N=6)</td>
<td>1.2 (N=27)</td>
<td>0.2 (N=7)</td>
</tr>
<tr>
<td>Clerical</td>
<td>10.3 (N=125)</td>
<td>29.2 (N=23)</td>
<td>7.8 (N=75)</td>
<td>1.4 (N=27)</td>
</tr>
<tr>
<td>Transcriptionists</td>
<td>6.7 (N=116)</td>
<td>14.6 (N=20)</td>
<td>6.4 (N=70)</td>
<td>1.6 (N=26)</td>
</tr>
</tbody>
</table>

Note: Research average made artificially high because one teaching hospital has approximately 100 research staff.

In a national survey completed in 2000, the data suggested that on average, the number of FTEs tripled from small to large hospitals. Based on the results above, Ontario data shows that the overall number of FTEs employed is three times greater in community hospitals than small hospitals, and almost ten times higher in teaching hospitals than small hospitals.
3.1.7 Insufficient Staff

The questionnaire asked hospitals to state in which functional areas they experienced staffing shortages. Some hospitals indicated experiencing a general shortage across all functions. This was primarily in small hospitals where they employ a minimal number of staff who are responsible for a number of HIM functions. About 53% of hospitals reported having a staff shortage in at least one area (N=142). The results by hospital type for hospitals reporting staff shortages are as follows:

- 70% of teaching hospitals (N=23)
- 54% of community hospitals (N=79)
- 40% of small hospitals (N=40)

Overall, the highest number of shortages reported was in Decision Support/Data Analysis, and in Coding and Abstracting. Figure 4 demonstrates the staffing shortages by function. Teaching hospitals noted that the highest staffing shortages in their hospitals were in Transcription; community hospitals reported the highest number in Decision Support; and small hospitals reported the highest number of shortages in Coding and Abstracting. Both community and small hospitals noted shortages for the clerical function. Figure 5 shows the breakdown of staffing shortages by type of hospital for each function.

**Figure 4 – Staffing shortages by function (N=142)**
3.1.8 Vacancies

The questionnaire asked whether organizations had vacancies, and if so, the approximate number of vacancies for each functional area. Overall, 32% (N=142) of hospitals stated that they currently had vacancies. The results for vacancies by hospital type are as follows:

- 52% of teaching hospitals (N=23)
- 32% of community hospitals (N=79)
- 20% of small hospitals (N=40)

Of the hospitals that reported vacancies, almost half indicated that they have vacancies in Coding and Abstracting (49%, N=45). Many hospitals also indicated that they had vacancies for Clerical staff (38%) and Transcriptionists (38%). Figure 6 below shows the breakdown of vacancies by function; percentages are based upon the 45 hospitals that reported having vacancies. It should be noted that few vacancies were reported for Research, as few hospitals employ staff specifically for research activities.
Results from a previous study also found the greatest number of vacancies in coding. Overall, they found that approximately 17% of hospitals reported having vacancies in coding while the results from this survey showed a similar finding of 15% of all hospitals reporting vacancies in coding \((N=142)\). Clerical and Transcription were reported as the areas that had the next highest percentage of vacancies in our results. In the other survey, although only 11 hospitals responded to that particular question, they all reported having clerical vacancies (their results included Transcriptionists in clerical functions)\(^4\).

For Coding and Abstracting, teaching and small hospitals noted the highest number of vacancies. For Clerical staff, teaching hospitals noted the highest number of vacancies. For Transcriptionists, teaching and community hospitals noted the highest number of vacancies. Figure 7 below demonstrates the number of vacancies by function for each hospital type.
Figure 7 – Vacancies reported by function and hospital type
(Teaching hospitals N=12, Community hospitals N=25, and Small hospitals N=8)

Hospitals were asked to provide the average number of vacancies they had for each staff type. Table 4 shows the average number of vacancies for each function by hospital type.

Table 4 – Vacancies reported by function and hospital type

<table>
<thead>
<tr>
<th>Type of Staff</th>
<th>Combined (average number of vacancies)</th>
<th>Teaching Hospitals (average number of vacancies)</th>
<th>Community Hospitals (average number of vacancies)</th>
<th>Small Hospitals (average number of vacancies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding and Abstracting</td>
<td>1.6 (N=22)</td>
<td>2.3 (N=7)</td>
<td>1.6 (N=9)</td>
<td>1.0 (N=6)</td>
</tr>
<tr>
<td>Decision Support/Data Analysis</td>
<td>1.1 (N=11)</td>
<td>1.3 (N=3)</td>
<td>1.1 (N=7)</td>
<td>1.0 (N=1)</td>
</tr>
<tr>
<td>Release of Information</td>
<td>0.7 (N=5)</td>
<td>1.0 (N=1)</td>
<td>0.6 (N=4)</td>
<td>0.0 (N=0)</td>
</tr>
<tr>
<td>Research</td>
<td>No vacancies reported</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision/Management</td>
<td>1.0 (N=9)</td>
<td>1.0 (N=3)</td>
<td>1.0 (N=6)</td>
<td>0.0 (N=0)</td>
</tr>
<tr>
<td>Risk Management/Quality</td>
<td>1.5 (N=2)</td>
<td>0.0 (N=0)</td>
<td>2.0 (N=1)</td>
<td>1.0 (N=1)</td>
</tr>
<tr>
<td>Clerical</td>
<td>2.0 (N=17)</td>
<td>2.4 (N=7)</td>
<td>1.8 (N=8)</td>
<td>1.0 (N=2)</td>
</tr>
<tr>
<td>Transcriptionists</td>
<td>1.8 (N=17)</td>
<td>2.1 (N=5)</td>
<td>1.7 (N=11)</td>
<td>1.6 (N=1)</td>
</tr>
</tbody>
</table>

Hospitals that reported vacancies indicated that the main reason for having vacancies was that there were no qualified applicants. Figure 8 demonstrates the various reasons that hospitals cited for having vacancies.
Results indicate that teaching and community hospitals reported the highest number of vacancies due to no qualified applicants. The results from the Taking Stock report ranked the reasons for vacancies in the following order: no qualified applicants, location, and competition with other employers. “No qualified applicants” consistently seems to be the most significant reason for vacancies. Small hospitals were the highest to report vacancies due to the location of their facility. Teaching hospitals were the highest group to report vacancies due to a lack of funding to hire. Figure 9 below shows the breakdown of reasons for vacancies by type of hospital.
Hospitals were also asked to state how they resolved their vacancies. Most hospitals outsourced or contracted their services, or had their current staff working overtime, to deal with staff shortages. The breakdown of how hospitals deal with vacancies is shown in Figure 10. More than one hospital mentioned that they paid current staff to get certified as a way to resolve vacancies.
In a 2003 report, the resolution of vacancies that was ranked highest was “position(s) was filled by someone under-qualified”. The second highest method of resolution was that current staff worked overtime. These findings are consistent with the results in this survey.

Teaching and community hospitals in this survey, resolved most vacancies by outsourcing or contracting their services, or having their current staff work overtime. Small hospitals, however, resolved vacancies by filling the position with someone less qualified. Figure 11 shows this distribution by hospital type.

Figure 11 – Resolution of vacancies by hospital type
(Teaching hospitals N=21, Community hospitals N=55, and Small hospitals N=25)

3.1.9 Unions

Hospitals were asked which HIM professionals in their department were unionized and to which unions they belonged. The responses show that 69% of hospitals have unionized staff in at least one area. The results by hospital type are as follows

- 74% of teaching hospitals (N=23)
- 70% of community hospitals (N=79)
- 63% of small hospitals (N=41)

Overall, the groups of HIM professionals that have the highest number of unionized staff are transcription and release of information staff (72% each). Table 5 below shows a breakdown by profession for each type of hospital.

Results from 2003 showed that 94% of clerical staff (Clerical/Transcription) was unionized, 78% of coding staff was and 74% of Release of Information staff. The results for Coding and Abstracting, and Release of Information are consistent with the findings in this survey; however, the results for clerical showed fewer of this staff type were unionized than found in the 2003 study.
Table 5 – The percentage of hospitals unionized, by hospital type

<table>
<thead>
<tr>
<th>Type of Staff</th>
<th>Percentage unionized</th>
<th>Union Names</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Combined</td>
<td>Teaching</td>
</tr>
<tr>
<td>Coding and Abstracting</td>
<td>63% (N=127)</td>
<td>64% (N=22)</td>
</tr>
<tr>
<td>Decision Support/Data Analysis</td>
<td>17% (N=78)</td>
<td>7% (N=15)</td>
</tr>
<tr>
<td>Release of Information</td>
<td>72% (N=102)</td>
<td>64% (N=22)</td>
</tr>
<tr>
<td>Research</td>
<td>30% (N=18)</td>
<td>44% (N=9)</td>
</tr>
<tr>
<td>Supervision/Management</td>
<td>3% (N=116)</td>
<td>0% (N=19)</td>
</tr>
<tr>
<td>Risk Management/Quality</td>
<td>10% (N=40)</td>
<td>0% (N=6)</td>
</tr>
<tr>
<td>Clerical</td>
<td>70% (N=125)</td>
<td>74% (N=23)</td>
</tr>
<tr>
<td>Transcriptionists</td>
<td>72% (N=116)</td>
<td>70% (N=20)</td>
</tr>
</tbody>
</table>

3.2 Data Management Practices

3.2.1 Chart Completion

Of the hospitals that responded, 90% have a chart completion policy; only 58% believe their chart completion policy is effective (N=143). There are minimal differences across hospital type in the number of hospitals having a chart completion policy. The results by hospital type are as follows:

- 57% of teaching hospitals (N=23)
- 50% of community hospitals (N=79)
- 73% of small hospitals (N=41)

When asked whether hospitals ensure that charts are complete before submitting them to CIHI, only 37% of hospitals indicated that they submitted abstracts based on complete charts. Another Ontario-wide study found that only 30% of hospitals ensure the charts are complete before their submission. The results by hospital type are as follows:

- 35% of teaching hospitals (N=23)
- 25% of community hospitals (N=79)
- 61% of small hospitals (N=41)

Table 6 shows the minimum, average and maximum percent of submissions to CIHI that are based on incomplete charts by type of hospital.

Table 6 – Submissions to CIHI based on incomplete charts by hospital type

<table>
<thead>
<tr>
<th></th>
<th>Percentage of submissions based on incomplete charts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>Overall</td>
<td>1%</td>
</tr>
<tr>
<td>Teaching (N=23)</td>
<td>2%</td>
</tr>
<tr>
<td>Community (N=79)</td>
<td>1%</td>
</tr>
<tr>
<td>Small (N=41)</td>
<td>2%</td>
</tr>
</tbody>
</table>
In the survey conducted on the profiles of the Ontario Case Costing Initiative (OCCI) hospitals, respondents were asked to indicate what percentages of their submissions to CIHI are based on incomplete charts. The responses showed the minimum to be 0.1%, maximum to be 63%, and the average to be 20%. The average from the OCCI survey is reflective of the results in this survey.

Hospitals were asked to indicate how many outstanding charts they had. On average, hospitals had 1,118 outstanding charts, the minimum being two charts and the maximum being 25,000 charts. Table 7 below shows the minimum, average and maximum number of charts outstanding for each type of hospital.

Table 7 – Number of outstanding charts by hospital type

<table>
<thead>
<tr>
<th>Number of outstanding charts</th>
<th>Minimum</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teaching (N=15)</td>
<td>2</td>
<td>2,884</td>
<td>25,000</td>
</tr>
<tr>
<td>• Community (N=65)</td>
<td>2</td>
<td>1,184</td>
<td>12,000</td>
</tr>
<tr>
<td>• Small (N=30)</td>
<td>5</td>
<td>92</td>
<td>300</td>
</tr>
</tbody>
</table>

Overall, 72% of hospitals reported that they identify charts that are coded incomplete; the top two methods used for indicating that a chart is incomplete are Basic Options and Notation on physician's deficiency slip. Overall, 62% of hospitals recode incomplete charts with updated information and re-submit them to CIHI. Table 8 demonstrates the percent of hospitals that identify incomplete charts and the percent that recode incomplete charts and resubmit them by hospital type.

Table 8 – Identifying incomplete charts and resubmitting them

<table>
<thead>
<tr>
<th>Percentage of hospitals that identify charts as coded incomplete</th>
<th>Percentage of hospitals that recode incomplete charts and resubmit them</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>73%</td>
</tr>
<tr>
<td>• Teaching (N=23)</td>
<td>83%</td>
</tr>
<tr>
<td>• Community (N=79)</td>
<td>82%</td>
</tr>
<tr>
<td>• Small (N=41)</td>
<td>46%</td>
</tr>
</tbody>
</table>

The OCCI survey asked if there was a way for the re-abstractor to identify whether the abstract was coded from an incomplete chart; 50% of these hospitals responded affirmatively. In the above results, 72% of hospitals indicated that they identify charts that are coded incomplete. This shows that in general, the case costing hospitals identify incomplete charts less often than the average of all Ontario hospitals.

The OCCI survey results also showed that 56% of hospitals always recode and resubmit abstracts when the chart is complete, 31% resubmit sometimes, and 13% never resubmit. The results above indicated that 62% of hospitals overall recode and resubmit to CIHI. This number is comparable to the 56% who indicated that they always resubmit, showing that again the OCCI hospitals are comparable to the rest of the province.

Another study found that 58% of hospitals always update their incomplete charts later and re-submit them; 23% sometimes resubmit; 1% rarely resubmit; and 18% never recode and resubmit. Again, these results are very similar to those seen above in Table 9.

A national survey report indicated that 92% of large, 90% of medium, and 79% of small hospitals follow up and update abstracts once the chart is complete. These results are higher than the results seen in our survey, which are based on Ontario hospitals only. However, small hospitals consistently have the lowest percentage of hospitals that recode and resubmit abstracts once the chart is complete.
3.2.2 Physician Practice

Hospitals were asked to estimate how often different chart information was completed and signed when they were ready to submit their data. On average, most hospitals had most of their charts completed and signed when they were ready to submit. The results in Table 9 below indicate the range in averages for percent complete and percent signed. The average for all chart items was calculated by including the following: face sheet, discharge summary, operative report, pathology report, physician’s orders, progress notes, consults, and diagnostic interventions. The process for arriving at the percentages below involved calculating the average for each of the eight chart items, and listing the lowest and highest (range) to the nearest percentage.

Table 9 – Percent chart completed and signed

<table>
<thead>
<tr>
<th></th>
<th>Range of Percent Complete</th>
<th>Range of Percent Signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=128)</td>
<td>85-98</td>
<td>82-98</td>
</tr>
<tr>
<td>Teaching (N=20)</td>
<td>80-100</td>
<td>70-100</td>
</tr>
<tr>
<td>Community (N=72)</td>
<td>83-99</td>
<td>81-99</td>
</tr>
<tr>
<td>Small (N=36)</td>
<td>92-98</td>
<td>89-97</td>
</tr>
</tbody>
</table>

Discharge summaries were cited as the information most often incomplete at time of submission (i.e., on average only 85% complete overall), whereas diagnostic interventions were cited as the information most often complete for teaching and community hospitals and progress notes for small hospitals.

Discharge summaries were also cited as the information most often not signed by physicians, whereas diagnostic interventions were cited as signed most often across all types of hospitals. Consistently, discharge summaries are the least likely to be complete and signed at the time of data submission and diagnostic interventions are the most likely to be both complete and signed.

A study performed in 2000 found that 90% of community and small hospitals, and 70% of large hospitals indicated that the chart documentation was complete at the time of submission\(^1\). These results are consistent with the findings above that indicate that teaching/large hospitals are less likely to have complete and signed documentation to code from.

Approximately 87% of hospitals report that they have policies or practices to promote timely completion of charts by physicians and 77% of hospitals have a policy for taking remedial action for physicians with incomplete charts. Some hospitals reported they did not have a chart completion policy, but did have a remedial policy. Community hospitals had the highest percentage of hospitals with policies to promote timely completion of charts by physicians, and also the highest that had remedial policies. Although a high percentage of small hospitals have policies for chart completion, just over half have remedial policies. Results by hospital type can be seen in Table 10.

Table 10 – The percentage of hospitals that have a chart completion policy and remedial policy

<table>
<thead>
<tr>
<th></th>
<th>Percentage of hospitals that have policies/practices to promote timely completion of charts by physicians</th>
<th>Percentage of those hospitals with completion policy that have policy for taking remedial actions for incomplete charts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>87%</td>
<td>77%</td>
</tr>
<tr>
<td>Teaching (N=23)</td>
<td>78%</td>
<td>83%</td>
</tr>
<tr>
<td>Community (N=79)</td>
<td>90%</td>
<td>84%</td>
</tr>
<tr>
<td>Small (N=41)</td>
<td>88%</td>
<td>61%</td>
</tr>
</tbody>
</table>

A national survey conducted in 2000 identified that 93% of small hospitals and 98% of medium and large hospitals have policies to promote the timely completion of charts\(^1\). These numbers differ from those found in the results of this survey. Overall, it seems that Ontario’s hospitals are slightly less likely to have policies to promote timely chart completion compared to hospitals in other provinces.
The results show that only 23% of hospitals always enforce their policy to take remedial action while 42% of hospitals never enforce this policy. Figure 12 shows how often the remedial actions are enforced.

**Figure 12 – Remedial action regarding chart completion policies (N=110)**

![Graph showing percentage of hospitals enforcing remedial actions](chart)

Also in the 2000 national study, hospitals were asked what percentage of the time they enforce their suspension policy. Their results indicated that 19% of small, 38% of medium and 47% of large facilities enforce their suspension policies. These results are similar to those found in the results of this survey, indicating that teaching/large hospitals are more likely to enforce their policies and that small hospitals are the least likely.

By hospital type, the average percentages that enforce remedial action are as follows:

- 52% of teaching hospitals (N=23)
- 39% of community hospitals (N=79)
- 26% of small hospitals (N=41)

Although teaching hospitals are more likely to always enforce their policies, only 38% of them actually enforce them 100% of the time. More than half of the small hospitals that have such policies never enforce them. Figure 13 below shows the percent enforcement by hospital type.
Overall, 11% of hospitals stated that discharge summaries are completed and signed within 48 hours. There was little variation by type of hospital. The breakdown by hospital type is as follows:

- 13% of teaching hospitals (N=23)
- 10% of community hospitals (N=79)
- 12% of small hospitals (N=41)

Hospitals were asked to report the average number of days that it takes physicians to complete charts. On average, it takes physicians 35 days to complete their charts. The range is from 1 day to 730 days. The minimum, average, and maximum number of days that it takes physicians to complete their charts is shown in Table 11, by hospital type.

**Table 11 – Days for physicians to complete charts by hospital type**

<table>
<thead>
<tr>
<th>Hospital Type</th>
<th>Minimum</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=111)</td>
<td>1</td>
<td>35</td>
<td>730</td>
</tr>
<tr>
<td>Teaching (N=17)</td>
<td>2</td>
<td>38</td>
<td>120</td>
</tr>
<tr>
<td>Community (N=62)</td>
<td>5</td>
<td>43</td>
<td>730</td>
</tr>
<tr>
<td>Small (N=32)</td>
<td>1</td>
<td>19</td>
<td>60</td>
</tr>
</tbody>
</table>
Overall, 77% (N=143) of hospitals reported that they have educated their physicians about submission timeframes. The results by hospital type are as follows:

- 78% of teaching hospitals (N=23)
- 76% of community hospitals (N=79)
- 78% of small hospitals (N=41)

A previous study found that 73% of large, 65% of medium, and 81% of small hospitals indicated that they educate their physicians\(^1\). These results show that community/medium hospitals are the least likely to educate their physicians.

The most popular mechanism for educating physicians is memos (60%, N=110). In a previous survey, 90% of hospitals stated that they used memos as part of their training methodology\(^1\). These results suggest that memos are the most popular mechanism used for educating physicians, both in Ontario, and across Canada. Other methods identified by hospitals in our survey include rounds/presentations (40%) and orientation booklets (24%). Overall, 29% of hospitals used other methods of educating physicians, the most common one being through the hospital’s Medical Advisory Committee.

Many hospitals reported that they use a combination of methods, and are therefore represented in more than one category. Figure 14 below shows the breakdown of education methods by hospital type.

**Figure 14 – Methods for physician education by hospital type**
( Teaching hospitals N=18, Community hospitals N=60, and Small hospitals N=32)

3.2.3 Concurrent Versus Retrospective Coding

Concurrent coding is conducted where the patient is cared for, while retrospective coding occurs once the patient is discharged, often in the Health Records department. Overall, 4% of hospitals do concurrent coding. All of these hospitals believe concurrent coding is effective. Partial concurrent coding is done by 21% of hospitals. The most common areas where partial concurrent coding is done are medicine and surgery. The results by hospital type can be seen in Table 12.
Table 12 – Coding practices by hospital type

<table>
<thead>
<tr>
<th>Percentage of hospitals that reported their coding practice</th>
<th>Overall (N=139)</th>
<th>Teaching (N=21)</th>
<th>Community (N=79)</th>
<th>Small (N=39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrospectively</td>
<td>75%</td>
<td>81%</td>
<td>72%</td>
<td>77%</td>
</tr>
<tr>
<td>Partial Concurrently</td>
<td>21%</td>
<td>19%</td>
<td>27%</td>
<td>10%</td>
</tr>
<tr>
<td>Concurrently</td>
<td>4%</td>
<td>0%</td>
<td>1%</td>
<td>13%</td>
</tr>
</tbody>
</table>

In the OCCI hospital survey, 25% of the case costing hospitals indicated that they do concurrent coding; this is consistent with the results above that indicate 21% and 4% of hospitals do partial and complete concurrent Coding respectively. The areas identified in the OCCI survey where concurrent Coding is performed include: medicine, nephrology, oncology, surgery.

In a different survey, the results indicated that approximately 77% of hospitals do retrospective coding, 21% do partial concurrent, and 2% do concurrent. The results of these two studies are consistent.

3.2.4 RAI Coding

For Resident Assessment Instrument (RAI) coding responsibility, over half of the hospitals who responded to this question indicated that it is primarily their clinical staff that is responsible (59%). The breakdown of responsibility is as follows (N=100): Clinical staff responsible in 59% of hospitals, Health Records staff in 11% of hospitals, and both clinical and Health Records staff are responsible in 30% of Ontario’s hospitals.

Teaching hospitals primarily used clinical staff or a combination of clinical and Health Records staff for RAI coding. Community hospitals also primarily used clinical staff for RAI Coding. The breakdown by hospital type is shown in Figure 15.

Figure 15 – RAI coding responsibility by hospital type
( Teaching hospitals N=19, Community hospitals N=62, and Small hospitals N=19)
3.2.5 Health Records Functions

Health Records functions can be carried out on-site or remotely, or can be outsourced or shared with other hospitals. Most hospitals have their Coding, Transcription and Release of Information done on site. The majority of hospitals outsource their Microfilming. Figure 16 shows how these functions are carried out.

Figure 16 – Health Records functions (N=143)

Although most teaching hospitals do their Coding on-site, they are also the most likely to outsource this function. Almost half of the teaching hospitals outsource their Transcription function and they outsource all of their Microfilming. Small hospitals are more likely to carry out all the functions on-site, except for Microfilming. The breakdown for teaching, community and small hospitals is shown in Figures 17, 18 and 19 respectively.
Figure 17 – Health records functions in teaching hospitals (N=23)

Figure 18 – Health records functions in community hospitals (N=79)
3.2.6 Data Quality

The survey asked hospitals what processes they had in place to monitor data quality. Overall, 93% of hospitals have a process for correcting errors identified by CIHI. Hospitals were also asked to provide any processes used for correcting errors identified by CIHI. The process followed by most organizations is that when they receive the error report from CIHI they make the corrections and re-submit the data. In most cases, the errors are given to the coder who was responsible for them to make the corrections. Some hospitals reported that one individual is responsible for making the corrections, for example an analyst or coordinator. One facility indicated that they take turns doing the monthly corrections.

For the hospitals that employ an analyst, they typically follow up with the individual coders regarding their errors. One hospital reported that they require each coder to complete a monthly error rate form which is submitted to the manager for review, and is discussed at their monthly coding meetings. A few other facilities also reported that the results of their error reports are discussed at team meetings.

Some hospitals also indicated that they have a process in place for updating their electronic system to eliminate the error from happening again, or they put audits in place to monitor the error.

The majority of hospitals educate their staff following an audit or chart review. The breakdown of what actions hospitals take in response to an audit or chart review are shown in Figure 20. Note that hospitals could select more than one option.
In the 2002 article, their results indicated that the most popular action in response to audits was staff education. Based on their results, 70% of hospitals indicated that they educated staff, compared to the 88% in this survey. Following staff education, the article mentioned above showed, in order of popularity, the following actions to be most used: submit to hospital committees (35%), modify department procedures (25%), submit corrections (15%), and create edit checks in software (5%)\(^2\). The above results in Figure 20 show variation in the order of actions, and also a higher percentage of hospitals performing these actions. However, it is consistently staff education that is the most popular action performed, based on the results of both studies.

There is little variation in the actions taken in response to audits by hospital type. However, small hospitals are less likely to create edit checks in the software than teaching and community hospitals. Actions taken in response to audits are broken down by hospital type in Figure 21.
Figure 21 – Actions taken in response to audits by hospital type
(Teaching hospitals N=19, Community hospitals N=56, and Small hospitals N=29)

Overall, 48% of hospitals have a formal data quality process or plan. Most hospitals cite insufficient staff or lack of time as the most common reasons for not having a formal data quality process or plan. The reasons given for why hospitals do not have a formal data quality process or plan are shown in Figure 22. Figure 23 breaks down these results by hospital type. Results are based on the 70 hospitals that responded to this question: 7 teaching, 39 community, and 24 small hospitals.

In a 2002 survey, the most significant barrier to having data quality audits was time; 85% of hospitals stated that time was the reason why they had no data quality audits. Time was also indicated as a significant factor based on our results; 81% of hospitals indicated that time was a barrier to doing data quality audits. Cost was noted as a barrier by 33% of respondents in this survey, similar to the result of 30% from our responses. However, the most common reason given from our responses was insufficient staff, which was not an option in the 2002 survey.
Figure 22 – Barriers to formal data quality process or plan (N=70)

- Insufficient Staff: 87%
- Time: 81%
- Cost: 30%
- Low Priority: 18%

Figure 23 – Barriers to formal data quality process or plan by hospital type (Teaching hospitals N=7, Community hospitals N=39, and Small hospitals N=24)

- Insufficient Staff: Teaching 60%, Community 90%, Small 0%
- Time: Teaching 50%, Community 70%, Small 20%
- Cost: Teaching 30%, Community 40%, Small 10%
- Low Priority: Teaching 10%, Community 20%, Small 30%
Overall, 66% of hospitals run regular data quality reports. The software system that is used most often for the generation of data quality reports is Crystal Reports, followed closely by MED2020. Teaching and community hospitals are more likely to run regular data quality reports. Less than half of the hospitals that run regular data quality reports report them to an applicable department outside of the Health Records department. Respondents indicated that coders are the most common audience within the department to whom results are reported. Note that the denominators here include only the hospitals that indicated they run regular reports. The results are shown by hospital type in Table 13.

Table 13 – Regular data quality reports

<table>
<thead>
<tr>
<th></th>
<th>Percentage of hospitals that run regular data quality reports</th>
<th>Percentage of hospitals that report the data quality results outside department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>66%</td>
<td>41%</td>
</tr>
<tr>
<td>Teaching (N=23)</td>
<td>78%</td>
<td>33%</td>
</tr>
<tr>
<td>Community (N=79)</td>
<td>75%</td>
<td>46%</td>
</tr>
<tr>
<td>Small (N=41)</td>
<td>41%</td>
<td>35%</td>
</tr>
</tbody>
</table>

3.2.7 Reconciling Data

Overall, 84% of hospitals reconcile MIS, CIHI and census data while 69% of hospitals reconcile clinical and financial data. The breakdown by hospital type is shown in Table 14.

Table 14 – Reconciling data

<table>
<thead>
<tr>
<th></th>
<th>Percentage of hospitals that reconcile MIS, CIHI and census data</th>
<th>Percentage of hospitals that reconcile clinical and financial data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>84%</td>
<td>69%</td>
</tr>
<tr>
<td>Teaching (N=23)</td>
<td>87%</td>
<td>65%</td>
</tr>
<tr>
<td>Community (N=79)</td>
<td>83%</td>
<td>72%</td>
</tr>
<tr>
<td>Small (N=41)</td>
<td>83%</td>
<td>63%</td>
</tr>
</tbody>
</table>

A comment received by a respondent to the survey in response to being asked for suggestions on how to improve data quality in Ontario stated, “Hospitals should have mandatory reconciliation with finance departments prior to data submissions to CIHI and MOHLTC”.

3.2.8 Partnerships

Overall, 66% of hospitals reported that they are involved in a partnership. The results by hospital type are as follows:

• 78% of teaching hospitals (N=23)
• 72% of community hospitals (N=79)
• 49% of small hospitals (N=41)

Hospitals were asked what other organizations were involved in their partnerships; these responses can be found in Figure 24. In a 2003 survey, 64% of respondents reported they “irregularly or never” have meetings to discuss data quality issues, and 25% stated they have meetings weekly or monthly."
Figure 24 – The various organizations that are involved in partnerships (N=95)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Percentage of Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Hospitals</td>
<td>87%</td>
</tr>
<tr>
<td>Own organization</td>
<td>53%</td>
</tr>
<tr>
<td>CCAC</td>
<td>7%</td>
</tr>
<tr>
<td>Physician's Offices</td>
<td>3%</td>
</tr>
<tr>
<td>LTC Facility</td>
<td>2%</td>
</tr>
</tbody>
</table>

In a previous study done in 2004, responses identified a need for sharing and promoting best practices by a province-wide network or the development of Canadian specific peer-reviewed research⁶.

Figure 25 – Organizations involved by hospital type
(Teaching hospitals N=18, Community hospitals N=57, Small hospitals N=20)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Percentage of Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Hospitals</td>
<td>Teaching: 90% Community: 80% Small: 70%</td>
</tr>
<tr>
<td>Own organization</td>
<td>Teaching: 80% Community: 70% Small: 60%</td>
</tr>
<tr>
<td>CCAC</td>
<td>Teaching: 70% Community: 60% Small: 50%</td>
</tr>
<tr>
<td>Physician's Offices</td>
<td>Teaching: 60% Community: 50% Small: 40%</td>
</tr>
<tr>
<td>LTC Facility</td>
<td>Teaching: 50% Community: 40% Small: 30%</td>
</tr>
</tbody>
</table>

In a previous study done in 2004, responses identified a need for sharing and promoting best practices by a province-wide network or the development of Canadian specific peer-reviewed research⁶.
3.3 Standards

3.3.1 Overall

Hospitals were asked what kinds of provincial standards they would like to see developed. Overall, 75% of hospitals said they would like to see Diagnosis Typing Standards developed, 76% would like to see Coding Standards developed, and 68% would like to see Productivity Standards developed. These results are shown by hospital type in Table 15.

Table 15 –Types of provincial standards developed

<table>
<thead>
<tr>
<th></th>
<th>Percentage of hospitals that would like provincial standards developed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diagnosis Typing</td>
</tr>
<tr>
<td>Overall (N=143)</td>
<td>75%</td>
</tr>
<tr>
<td>Teaching (N=23)</td>
<td>74%</td>
</tr>
<tr>
<td>Community (N=79)</td>
<td>80%</td>
</tr>
<tr>
<td>Small (N=41)</td>
<td>66%</td>
</tr>
</tbody>
</table>

Other standards that hospitals would like to see relate to specialty areas (i.e., rehabilitation, mental health, pediatrics, etc.).

Hospitals were asked to report if there were any CIHI standards that they don’t use, don’t understand or don’t agree with. The standard of using only physician documentation was reported by a number of hospitals as being both the standard they do not agree with and also the one that they do not use or comply with. Other standards that hospitals do not agree with include: dehydration coding (i.e., with gastroenteritis), COPD with pneumonia, and history of cancer. Standards that are not used include: the type 3 diagnosis type, since it is optional, the type 4 morphology codes, and admitting diagnosis.

3.3.2 Coding Standards

Hospitals were asked to report which of the following methods was used by their coders: CIHI coding standards, hospital-specific guidelines or undocumented “rules of thumb”. Most hospitals use a combination of CIHI coding standards and their hospital-specific coding standards (43%). One percent of hospitals use only undocumented “rules of thumb” for coding. The results are shown in Figure 26.
Figure 26 – Coding standards. (N=140)

- 33% use only CIHI coding standards
- 1% use only undocumented “rules of thumb”
- 1% use only hospital-specific guidelines
- 43% use CIHI coding standards and hospital-specific guidelines
- 4% use CIHI coding standards and undocumented “rules of thumb”
- 0% use hospital-specific guidelines and undocumented “rules of thumb”
- 18% use combination of all three: CIHI coding standards, hospital-specific guidelines and undocumented “rules of thumb”

Of the hospitals that use hospital-specific guidelines, 98% reported that their guidelines comply with CIHI standards.

A survey in 2002 found that 73% of hospitals indicated they used undocumented “rules of thumb”\(^2\). These results are significantly higher than the 23% total who stated they used them in our results. The same survey mentioned above also found that 54% of hospitals felt that the Canadian Coding Standards were not sufficient and 46% had developed their own hospital-specific guidelines to fill the gap\(^2\).

Overall, 39% of hospitals indicated that their coders use only physician documentation to code.

The breakdown by type of hospital is as follows:
- 39% of teaching hospitals (N=23)
- 41% of community hospitals (N=79)
- 37% of small hospitals (N=41)

Other sources that are used in addition to physician documentation include nursing notes, lab results, diagnostic imaging and allied health documentation. The breakdown is shown in Figure 27 (note that the denominator is the total number of hospitals who use more than just physician documentation to code). Hospitals were permitted to select more than one additional source.

The 2002 survey conducted by the Ontario Clinical Data Quality Task Force also noted a large variation in coding practices, and the sources used for coding purposes. Hospitals reported using everything from just the face sheet to the entire chart\(^2\). It is significant to note that the CIHI coding standards state that significance and diagnosis coding is to be based on physician documentation only, and that the remainder of the chart should only be used for specificity.
3.3.3 Productivity Standards

Although 49% of hospitals stated that they have productivity standards, many of them were defined as informal targets. Taking Stock (2003) reported that only 19% of hospitals reported having coding productivity standards, which is a much lower rate than the results in this survey. The majority of teaching hospitals (65%) and community hospitals (63%), reported having productivity standards, whereas only 12% of small hospitals had these standards. Small hospitals where staff shares functions, generally reported lower standards, since they do not perform only one duty per day.

Of the hospitals that have productivity standards, the range of responses for coding standards is found in Table 16 by hospital type. Note that the responses are quite varied, which was also recognized in the survey performed in 2002. Their results showed extremely varied productivity guidelines; the difference between the 25th and 75th percentile was greater than 50%².
Table 16 – Productivity standards for coding by hospital type

<table>
<thead>
<tr>
<th>Level of Care</th>
<th>Hospital Type</th>
<th>N</th>
<th>Documented Expected Productivity (per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Minimum Standard</td>
</tr>
<tr>
<td>Inpatient</td>
<td>Overall</td>
<td>67</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Teaching</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Day Surgery</td>
<td>Overall</td>
<td>61</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Teaching</td>
<td>13</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>44</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Clinics</td>
<td>Overall</td>
<td>31</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Teaching</td>
<td>9</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Emergency</td>
<td>Overall</td>
<td>65</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Teaching</td>
<td>13</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>48</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Medical Day Care</td>
<td>Overall</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Teaching</td>
<td>7</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>

Productivity standards were also requested for other areas in Health Records. Table 17 shows the range of these standards by hospital type.
Table 17 – Productivity standards for each area by hospital type

<table>
<thead>
<tr>
<th>Area</th>
<th>Hospital Type</th>
<th>Number of Hospitals</th>
<th>Documented Expected Productivity (per day)</th>
<th>Minimum Standard</th>
<th>Average</th>
<th>Maximum Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Number of charts)</td>
<td></td>
<td></td>
<td>Overall</td>
<td>27</td>
<td>10</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Teaching</td>
<td>8</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community</td>
<td>18</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Small</td>
<td>1</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Loose filing</td>
<td></td>
<td></td>
<td>Overall</td>
<td>18</td>
<td>93</td>
<td>532</td>
</tr>
<tr>
<td>(Number of reports)</td>
<td></td>
<td></td>
<td>• Teaching</td>
<td>8</td>
<td>300</td>
<td>758</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community</td>
<td>9</td>
<td>93</td>
<td>372</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Small</td>
<td>1</td>
<td>160</td>
<td>160</td>
</tr>
</tbody>
</table>

* Note: Some responses given in terms of number of inches, and the range was anywhere from 1 to 3 inches per hour, and 2 to 12 inches per day

<table>
<thead>
<tr>
<th>Microfilming</th>
<th></th>
<th></th>
<th></th>
<th>Primarily Outsourced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Overall</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Teaching</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Small</td>
<td>4</td>
</tr>
<tr>
<td>Transcription</td>
<td></td>
<td></td>
<td>Overall</td>
<td>26</td>
</tr>
<tr>
<td>(lines per day)</td>
<td></td>
<td></td>
<td>• Teaching</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Small</td>
<td>0</td>
</tr>
<tr>
<td>Transcription</td>
<td></td>
<td></td>
<td>Overall</td>
<td>26</td>
</tr>
<tr>
<td>(minutes per day)</td>
<td></td>
<td></td>
<td>• Teaching</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Small</td>
<td>0</td>
</tr>
<tr>
<td>Release of Information</td>
<td></td>
<td></td>
<td>Overall</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Teaching</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Small</td>
<td>0</td>
</tr>
</tbody>
</table>

* Note: Some responses were in days (i.e., turnaround time), and the range was five to 20 days from receipt, with an average of nine days

3.4 Education and Certification

The results indicated that while some hospitals require certification upon hiring, they currently employ uncertified people (i.e., hire underqualified staff to fill vacancy). An individual must pass a recognized HIM program and receive their diploma to challenge the national HIM certification exam and, if successful, receive registration with the CCHRA. Certified HIM professionals can then become members of the Canadian and Ontario HIM Associations. One hospital stated that two of their coders had failed the certification exam. Figure 28 shows the percentage of hospitals that require their coders to be a member of the Canadian Health Information Management Association (CHIMA), a member of the Ontario Health Information Management Association (OHIMA), certified by the Canadian College of Health Record Administrators (CCHRA), or any combination of these three.
Taking Stock found that 64% of hospitals do not assess an applicant’s coding skills prior to hire, and that half of hospitals hire certified staff. However, 80% reported that they prefer staff to be certified but that it is not mandatory.

In another previous study, all respondents agreed that hospital policies or by-laws should specify that HIM practitioners must hold a current certificate of registration as a condition of employment. They also agreed that completion of an approved HIM program, clinical practicum and the successful completion of the Canadian certification exam must be requirements for registration with CCHRA. In addition, 80% believed that continuing education, acceptable standards of practice, and annual renewal of registration be required; and that renewal should be contingent upon a minimum number of hours of professional practice over a specific timeframe.

Hospitals were asked the minimum level of education they require for the various positions among the Health Records department. The most common minimum educational requirement for HIM professionals is a diploma, which is the level of most recognized HIM programs. The breakdown of the minimum education requirements by profession is shown in Figure 29, and is broken down by the hospital type in Figures 30, 31 and 32.
Figure 29 – Minimum education required (N=143)

Position

Director, Health Records
Manager, Health Records
Coordinator
Coder
Analyst
Registration Clerk

Figure 30 – Minimum education required for teaching hospitals (N=23)

Position

Director, Health Records
Manager, Health Records
Coordinator
Coder
Analyst
Registration Clerk
Figure 31 – Minimum education required for community hospitals (N=79)

Figure 32 – Minimum education level required for small hospitals (N=41)
The questionnaire asked respondents whether Coders in their organization generally attend CIHI training sessions. Approximately 92% of hospitals indicated their Coders generally attend CIHI training sessions. The remaining 8% of hospitals that do not have their Coders attend these sessions, gave the following reasons as to why:

- Location: cost of travel, distance of travel, weather
- Staffing issues: shortage of relief staff, loss of productivity, deadlines to meet, and
- No specific training on their sector (i.e., rehabilitation, mental health).

When asked about attendance at the most recent diagnosis typing session, 68% of hospitals indicated that their Coding staff had attended. Results from the above two questions are shown in Table 18 below.

**Table 18 – Staff that attend CIHI training sessions and diagnosis typing session**

<table>
<thead>
<tr>
<th></th>
<th>Percentage of hospitals whose staff generally attend CIHI training sessions</th>
<th>Percentage of hospitals whose staff attended most recent diagnosis typing session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>92%</td>
<td>68%</td>
</tr>
<tr>
<td>• Teaching (N=23)</td>
<td>91%</td>
<td>61%</td>
</tr>
<tr>
<td>• Community (N=79)</td>
<td>95%</td>
<td>70%</td>
</tr>
<tr>
<td>• Small (N=41)</td>
<td>85%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Hospitals were asked whether they have developed Coding education material. Overall, 41% of hospitals have developed coding education material. Table 19 shows the percentage of hospitals that have developed Coding educational material by hospital type.

**Table 19 – The percentage of hospitals that have developed coding education material, by hospital type**

<table>
<thead>
<tr>
<th></th>
<th>Percentage of hospitals that have developed coding educational material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>41%</td>
</tr>
<tr>
<td>• Teaching (N=23)</td>
<td>57%</td>
</tr>
<tr>
<td>• Community (N=79)</td>
<td>49%</td>
</tr>
<tr>
<td>• Small (N=41)</td>
<td>17%</td>
</tr>
</tbody>
</table>

The various audiences that hospitals presented their educational materials to can be seen in Figure 33 and by hospital type in Figure 34. Note that not all hospitals who reported having developed educational material provided the audiences to which they have presented it to, and some reported having presented to more than one group.
**Figure 33 – Audiences to whom hospitals present their education materials (N=54)**

<table>
<thead>
<tr>
<th>Audience</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Records staff</td>
<td>85%</td>
</tr>
<tr>
<td>Physicians</td>
<td>50%</td>
</tr>
<tr>
<td>Registration staff</td>
<td>30%</td>
</tr>
<tr>
<td>Nurses</td>
<td>19%</td>
</tr>
<tr>
<td>Others</td>
<td>13%</td>
</tr>
</tbody>
</table>

**Figure 34 – Audiences to whom hospitals present their educational material by hospital type (Teaching hospitals N=11, Community hospitals N=36, Small hospitals N=7)**

<table>
<thead>
<tr>
<th>Audience</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Records staff</td>
<td>100%</td>
</tr>
<tr>
<td>Physicians</td>
<td>90%</td>
</tr>
<tr>
<td>Registration staff</td>
<td>60%</td>
</tr>
<tr>
<td>Nurses</td>
<td>50%</td>
</tr>
<tr>
<td>Others</td>
<td>40%</td>
</tr>
</tbody>
</table>

- **Teaching**
- **Community**
- **Small**
When asked if HIM professionals in the Health Records department have access to internet, 99% responded affirmatively. For videoconferencing, 78% reported that their staff had access. A break down by hospital type is shown in Table 20.

### Table 20 – Staff that have access to internet and videoconferencing

<table>
<thead>
<tr>
<th>Hospital Type</th>
<th>Percentage of hospitals whose Health Records department staff have access to Internet</th>
<th>Percentage of hospitals whose Health Records department staff have access to Videoconferencing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (N=143)</td>
<td>99%</td>
<td>78%</td>
</tr>
<tr>
<td>Teaching (N=23)</td>
<td>100%</td>
<td>78%</td>
</tr>
<tr>
<td>Community (N=79)</td>
<td>95%</td>
<td>71%</td>
</tr>
<tr>
<td>Small (N=41)</td>
<td>100%</td>
<td>90%</td>
</tr>
</tbody>
</table>

### 3.5 Technology

#### 3.5.1 Technology Limitations

A number of technology factors impact the timeliness and quality of data submitted. Hospitals were asked to report which factors they found to be significant technology limitations to producing quality data. These technology limitations can be seen in Figure 35, and by hospital type in Figure 36.

### Figure 35 – Technology limitations (N=89)
Respondents mentioned additional barriers that were issues with interfacing and with the relationship between CIHI and the vendor. Several hospitals stated that their systems do not interface with each other, and this limits their system capabilities and the quality of their data. In terms of the CIHI edits, a barrier that was frequently mentioned was the provision of CIHI specifications to the vendors, and subsequently, from the vendors to each hospital. Respondents indicated that the time lag results in hospitals using outdated edits and creates additional work for them to make the corrections.

3.5.2 CIHI Edits

When asked if they had all CIHI edits built into their abstracting software, 83% of hospitals stated that they do have the edits built in. The results by hospital type are as follows:

- 62% of teaching hospitals (N=21)
- 84% of community hospitals (N=76)
- 92% of small hospitals (N=39)

The 2000 survey asked respondents about CIHI edits being built into their abstracting software. Their results showed that 86% of large, 92% of medium, and 94% of small hospitals did have all the edits built in. Although these findings are generally higher than the results in this survey, the pattern indicates that small hospitals are most likely to have the edits built in, and that large/teaching hospitals are the least likely.

The respondents that indicated they did not have the CIHI edits built into their abstracting software were asked to provide further details. Many stated it was due to vendor issues including: the vendor does not offer all of the edits, the vendor declines requests for additional edits, the vendor does not update the edits in parallel with CIHI updates, or that the vendor does not have the time to build in the edits. One respondent indicated that the vendor argued that the edits are not necessary.

Some hospitals reported that the main edits are built in, but felt that the support from the vendors could be improved. A few hospitals mentioned that they are waiting completion of edits by their own decision support staff. Feedback from the survey showed that a large number of hospitals are not confident that all the edits are in place and are not happy with the service and support from the vendors.
Specific comments from the survey revealed:

- Meditech does not offer all of CIHI’s edits
- Anzer has excellent edits built in and hospitals that use this vendor were happy with them
- Meditech and MED2020 have interface issues.

3.5.3 Vendor Information

Hospitals were asked to indicate which software vendor they used for various Health Records functions. In total, 48 different vendors are used across the province. The breakdown by function is as follows:

- Abstraction – ten vendors (Figure 37)
- Transcription – 19 vendors (Figure 38)
- Admission/Discharge/Transfer – 26 vendors (Figure 39)
- Dictation – 13 vendors (Figure 40)
- Release of Information – 17 vendors (Figure 41)
- Encoding – five vendors (Figure 42)

Some hospitals do not have a system in place for certain functions, and are depicted as “No System Indicated” in the graphs. In some cases, “No System Indicated” reflects that no response was provided. Note that MED2020 includes Winrecs, Medisolution includes Medipatient, and Microsoft includes Word and Access. Also, any vendor that accounted for less than 5% of the provincial market share is included in the “Other” section.

Figure 37 – The distribution of software vendors used for abstraction (N=143)
Figure 38 – The distribution of software vendors used for transcription \((N=143)\)

![Pie chart showing distribution of software vendors for transcription. Meditech is the leading vendor with 23%, followed by Medisolution (10%), Lanier Worldwide Inc. (10%), Meditech (9%), Dictaphone (16%), No System Indicated (12%), Other (20%).]

Figure 39 – The distribution of software vendors used for admission/discharge/transfer \((N=143)\)

![Pie chart showing distribution of software vendors for admission/discharge/transfer. Meditech is the leading vendor with 40%, followed by Medisolution (18%), McKesson Corporation (5%), Anzer IT Solutions Corp. (6%), Other (28%), No System Indicated (3%).]
Figure 40 – The distribution of software vendors used for dictation ($N=143$)

- Lanier Worldwide Inc.: 28%
- Dictaphone: 38%
- Edi-Cord: 8%
- Other: 12%
- No System Indicated: 14%

Figure 41 – The distribution of software vendors used for release of information ($N=143$)

- No System Indicated: 48%
- Meditech: 25%
- Microsoft Corporation: 6%
- Manual: 0%
- Other: 15%
In a national study in 2000, it was identified that 41% of hospitals surveyed used Med 2020 for their abstraction software vendor\(^1\). Our results show that 54% of Ontario hospitals use this system. This indicates that Med 2020 maintains the majority of the market share both in Ontario and across Canada.

In 2002, another survey found that 10% to 15% of hospitals use an encoder\(^2\). Our results indicate that 25% of hospitals use an encoder, and that the majority of these hospitals use 3M for this function. The Ontario Case Costing Initiative (OCCI) survey results showed that 25% of Ontario’s case costing hospitals use an encoder, which is identical to the percentage used across Ontario overall\(^7\).
4 Recommendations

We solicited recommendations from hospitals and representatives from various stakeholders groups based on the results of this survey. The lead for implementing each recommendation is indicated in parentheses at the end of each recommendation. The recommendations are categorized into three key themes:

- HIM profession
- Chart documentation and completion
- Coding consistency

4.1 Support and Enhance the HIM profession

1. **Establish Local Data Management Partnerships.** Establish Local Data Management Partnerships that will be aligned with the Local Health Integration Networks. This will facilitate collaboration between health care providers enabling them to consolidate, coordinate and standardize local data management functions through best practices, policies, standards and tools (MOHLTC).

2. **Introduce mandatory Continuing Professional Education (CPE) credits to maintain HIM certification.** Require that all HIM professionals complete a minimum number of CPE credits in order to maintain their certification and use their credentials (CHIMA).

3. **Mandate that only certified HIM professionals code and abstract clinical data for Discharge Abstract Database (DAD) and National Ambulatory Care Reporting System (NACRS).** Mandate that hospitals recruit only certified HIM professionals for acute inpatient and ambulatory care coding purposes; sufficient time will be provided to the field for implementation (MOHLTC).

4. **Upgrade the coding component of the HIM program curriculum.** Enhance the coding component of the program to ensure that all students achieve an acceptable level of coding competency (CHIMA).

5. **Mandate the completion of a province-wide coder education and assessment program.** This series of education modules would be available online and accessible by all coders. It would offer an education section, followed by an assessment portion to ensure understanding of the material (MOHLTC).

6. **Create a compendium of HIM practice guidelines to support and improve the operations of Health Records departments.** (MOHLTC) Provide Health Records departments with guidelines, including such things as:
   a. Productivity standards
   b. Concurrent coding practices
   c. Minimum chart completion guidelines
   d. Vendor requirement specifications
   e. Operational efficiency improvements
   f. Use of reference documentation and tools

7. **Provide training on use of the coding query tool.** Develop a web-based tutorial on the use of the query tool and navigation around the coding query database. This should include information about the query resolution process (CIHI).

8. **Improve access to educational materials.** Promote equitable access by HIM professionals to educational materials by investigating alternative means of delivery (MOHLTC).

9. **Reconvene the CHIMA practicum task force to evaluate the effectiveness of the practicum placement required by HIM programs.** Review the placements of students, to ensure that they are all provided with an equal opportunity for an effective and applicable placement (CHIMA).
4.2 Improve Chart Documentation and Completion

10. **Establish a Physician Documentation Expert Panel to engage physicians and other stakeholders in addressing chart documentation issues.** (MOHLTC) Establish a panel of ‘documentation champions’ from across the province to promote timely, accurate and complete documentation by physicians through the development of guidelines and tools, including such things as:
   a. Physician education package
   b. Chart completion policy
   c. Recommendations to College of Physicians and Surgeons of Ontario (CPSO)
   d. Guidelines for including chart documentation in medical school curricula

11. **Introduce data elements into the province/institution specific project field in the DAD for identifying charts coded incomplete.** Introduce data elements in the DAD that will indicate if the abstract was based on an incomplete chart (MOHLTC).

12. **Review and recommend, as appropriate, revisions to Regulation 965, Section 4 of the Public Hospitals Act to reflect current practice.** Review the existing regulations pertaining to completion of medical records and make a recommendation for revision (MOHLTC).

4.3 Improve Coding Consistency

13. **Develop provincial registration standards.** Develop provincial standards to ensure consistency and accuracy of registration data (MOHLTC).

14. **Develop an online standard registration education package.** Develop an education package that would be available to hospital registration staff online (MOHLTC).

15. **Establish a system for identifying appropriate workload standards for Health Records department functions.** Assess the appropriateness and impact of adopting a workload measurement system for Health Records departments as a provincial standard (MOHLTC).

16. **Develop and implement standard reporting requirements for provincial adoption.** Where gaps are identified, implement reporting standards that will improve the consistency of the data province-wide (MOHLTC).

17. **Develop standard data quality indicators for incorporation into the Wizard for Hospital Indicator Calculation (WHIC) tool for monitoring at the hospital level.** Incorporate data quality indicators into the WHIC tool, enabling hospitals to correct their data at source (MOHLTC).

18. **Introduce Local Data Management Coordinators to support the Local Data Management Partnerships.** Coordinators will be responsible for providing education and training, promoting communities of practice, advocating opportunities for data quality improvement, and monitoring the quality of data collected (MOHLTC).

19. **Establish a provincial Data Consistency Working Group.** Establish a working group to provide a forum for HIM professionals and stakeholder groups to collaborate on the development of standards and practices to promote data consistency throughout the province (MOHLTC).

20. **Increase the understanding of existing coding standards through the development of specific, practical examples.** Provide coders case examples to increase the understanding and reinforce the proper application of coding standards (MOHLTC).

21. **Develop a standard audit tool for roll-out across the province.** Provide a standard audit tool to conduct routine re-abstraction studies across the province (MOHLTC).

22. **Link coding standards to electronic coding book.** Reinforce coding standards through an electronic linkage to the appropriate section within Folio (CIHI).
5 Conclusions

The objective of the survey was to identify the key challenges related to health records management and to identify possible solutions to deal with these issues. The results identified a number of areas that need to be addressed to improve the quality and management of clinical data, including the need for more standards, education and improved chart documentation. Some of these issues have been cited in previous studies. For example, “Taking Stock” in 2003 found that only half of the hospitals in Ontario hire certified HIM professionals\(^1\). Our survey found that while the percentage of hospitals requiring certification has increased to 78%, many hospitals still fill vacant positions with less qualified individuals when faced with staff shortages in Health Records.

We discussed the results of our survey with various stakeholders and developed appropriate recommendations to address them. Some of the recommendations have been proposed in previous studies. For example, the requirement that hospitals recruit only certified HIM professionals and that CHIMA introduce mandatory CPE credits to maintain certification have been proposed by the Pilot Clinical Data Quality Audit Project in 2003\(^3\). This study, as well as the report by the Ontario Clinical Data Quality Task Force in 2002, also suggested lobbying medical schools to incorporate teaching the importance of documentation in their medical school training curriculum\(^2\). We have included this recommendation in our broader proposal of establishing a Physician Documentation Expert Panel to address this, and other physician documentation issues. Where appropriate, we have aligned our recommendations with those that were proposed in previous data quality studies.

In addition to discussions with stakeholders, some of the recommendations in our report were guided by a jurisdictional review. This review found, for example, that Ontario is one of the only provinces without a formal provincial committee to address data quality. Our recommendation, therefore, was to establish a provincial Data Consistency Working Group. This is also aligned with a study by ICES in January 2005 called Improving Health Care Data in Ontario, which proposed that the MOHLTC should create a committee to oversee and coordinate the development and improvement of health care data\(^8\).

The survey, in addition to confirming the findings of previous data quality studies, also made inquiries about data management functions and processes that have not been previously investigated. For example, questions about staff shortages, vacancies and unions have not been studied at a provincial level. Other areas of investigation that have not been previously studied include technology. Unlike most other provinces that employ only one or two abstracting software systems, Ontario uses almost ten different vendors for abstracting. These results are of interest at this point. It is intended that this additional information will be useful in the future work of the Local Data Management Partnerships.

In conclusion, this survey confirmed many of the findings and reiterated many of the recommendations from previous data quality studies. Many of these recommendations have already been initiated by the Ministry of Health and Long-Term Care or other organizations. It is intended that the Local Data Management Partnerships, and the committees that will be established to support them, will ensure that many of these recommendations will be implemented and sustained.

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\(^1\) Institute for Clinical Evaluative Sciences. *Improving Health Care Data in Ontario*, 2005.
6 Appendices

6.1 Appendix A: Additional Findings from “Improving Timeliness of Discharge Abstract Database Data”

- 90% of facilities felt that DAD data submissions were never or rarely delayed due to illness
- The large majority of respondents felt that rarely or never did vacations or maternity leaves result in delays for DAD data submission
- 80% of facilities rarely to never hired casual relief staff for illness or vacation
- The majority of hospitals indicated that staff never to rarely worked overtime to meet submission deadlines
- The majority of hospitals indicated that their coding staff were unionized
- Over 95% of coding and abstracting occurs within the health records department; 11% indicated coding and abstracting also occurred in patient care areas
- Large numbers of respondents indicated that while abstracts are submitted to CIHI based on incomplete charts, a “follow-up process was in place in their facility to verify and update diagnoses and procedures once the charts are complete”
- The majority of respondents utilize the whole chart when coding
- In the case of a contradiction in documented patient information, greater than 95% contact the physician for clarification
- The physician practice that was cited as the top cause of incomplete charts was not dictating the discharge summaries on a timely basis
- Staffing issues, chart issues and vendor issues were the most commonly cited factors identified by health records staff as impacting timely submission of DAD data
- 90% of respondents were knowledgeable about hospital or CIHI policies regarding data submission; only 36–76% of respondents felt they were knowledgeable about regional and provincial policies
- Approximately 80% of medium and large facilities collect more data than is submitted to CIHI; only 44% of small do
- In response to a question asking how quickly data could be submitted to CIHI without compromising data quality, average was about 26 days
- The majority of respondents felt they could comply with a MOHLTC data submission requirement of 30 to 45 days after month-end

6.2 Appendix B: Additional Findings from “Understanding and Improving the Quality of Health Care Data in Ontario”

- 50% of hospitals stated that existing coding guidelines are insufficient for ensuring consistency in coding across the Province
- 95% of respondents supported the concept of a provincial entity charged with the role of conducting ongoing audits to monitor data quality
- In a majority of hospitals, the Health Records department is the department held accountable for data analyses and data quality
- Over half of responding hospitals indicated their coding staff do not work at other hospitals; the rest indicated they hire part-time who work in other facilities, or they know that their staff work part-time at other hospitals
- Top mechanisms in place to ensure consistency for coders working at more than one hospital: documented procedures, ongoing communication and audits (all over 60%)
• About half of hospitals indicated that they have a partial electronic patient record
• 10% of Health Records departments indicated that they do not use the Canadian Coding Source Book
• 9% of responding hospitals still do not have a totally integrated health record, meaning that inpatient and outpatient records may be stored separately or nursing notes may be stored in a separate location
• 6% of hospitals code using only the summary or face sheet; the rest use the entire chart
• 55% of respondents indicated that the diagnosis submitted to CIHI might be changed after reviewing the CMG assigned by the grouper; of the departments that follow this practice, only half follow a documented policy relating to this practice
• If a coder disagrees with a diagnosis documented on the face sheet, a majority of coders contact the physician to clarify the discrepancy

6.3 Appendix C: Additional Findings from “Taking Stock”
• Approximately 53% of survey respondents worked at a facility that has a casual coding pool
  – there were between 1 and 20 employees in a pool
  – 3.1 employees per pool, on average
  – casual employees worked an average of 32 hours per month
• The Health Record Technician (HRT) designation was twice as common as a Health Record Administrator (HRA) or Health Record Professional designation
• In Ontario, the average hourly rates are:
  – HRAs = $22.89
  – HRTs = $19.48
• 96% of respondents reported that they maintain a complete paper chart; 4% do not
• The most common type of reports online are transcribed reports, labs and diagnostic imaging documents
• 56% of respondents stated that their facility did not have a formal EHR strategy
• Majority of Health Records departments are not involved in the EHR strategy, some are involved as participants/members on the strategy development team or implementation team
• 51% of Health Records departments never perform coding audits
• 17% perform ongoing audits
• 15% perform annual audits
• 10% perform monthly audits
• 7% perform quarterly audits
• 85% of coding audits are performed by internal staff; 15% by external
• Departmental challenges, as ranked by respondents:
  – Chart documentation/completion issues
  – Technology issues
  – Coding quality
  – EHR
  – Recruitment
  – Staff retention
• 38% of hospitals reported having a professional development budget
• “Specific Coding” and “Data Quality” were the most common types of education sessions desired
6.4 Appendix D: Additional Findings from “From Practitioners to Professionals: What’s Ahead for Health Information Management?”

- 60% of responders believe enrollment in existing HIM certification programs in Ontario is inadequate.
- Close to 75% of responders believed that while Regional Education Networks designed to help HIM practitioners stay up-to-date on new standards and best practices existed, the networks were not available province-wide.
- The only HIM peer-reviewed journal identified by responders was the Journal of AHIMA; there are no HIM peer-reviewed journals published in Canada.
- No respondents were aware of any specialized certification courses e.g. oncology or cardiac coding, were available in Canada.
- Everyone agreed that HIM practitioners should:
  - Be accountable and responsible for meeting legislated standards of practice.
  - Be required to understand, uphold and promote ethical practice.
  - Demonstrate leadership through provision, facilitation & promotion of best professional service.
  - Establish and maintain respectful, collaborative & professional relationships.
- 60% of responders believed the Canadian College of Health Record Administrators (CCHRA/CHIMA) should be responsible for reviewing the standards of practice; the remainder believed it should be the responsibility of a Provincial Body reporting to CCHRA.
- Over 60% believed standards of practice should be reviewed annually while others preferred every three to five years.
- All respondents agreed that licensing of HIM practitioners contribute to the professional status of these practitioners, and that in order to use the title HIM professional the individual must be a member of a Provincial or National Regulatory Body.
- 60% believed that fluency in one of the two official languages should be considered a requirement for registration with the College.
- 90% of responders believed that the Regulatory body should be responsible for standards of practice, complaints, discipline and to a lesser degree, quality assurance.
- 91% of respondents believed there was moderately strong to virtually certain evidence that HIM practitioners have achieved professional status.
- 72% believed that if asked, other HIM practitioners would respond that there was moderately strong to virtually certain evidence that HIM practitioners have achieved professional status.
- 82% believed that if asked, other healthcare professionals i.e. doctors, nurses would respond that there was moderately strong to virtually certain evidence that HIM practitioners have achieved professional status.
- 70% believed that if the general public were asked, they would respond there was virtually no to only slight evidence that HIM practitioners have achieved professional status.

Themes identified:
- Annual renewal of national or provincial registration should be a requirement for employment.
- There is a need for sharing and promoting best practices either by a province-wide network or a vehicle for publishing Canadian-specific peer-reviewed research.
- There clearly exists professional pride in HIM both among practitioners and across other healthcare workers; however, the message has to be shared with the public.
6.5 Appendix E: Additional Findings from “Hospital Profile” for Re-abstraction Study of Ontario Case Cost Hospitals

The following questions were asked in the survey along with the indicated results. These results are only those which are not indicated in the report. The number of hospital profile surveys completed was 16, one for each case costing site that participated in the study.

**Do you use a terminal digit filing system?**
- Yes = 14 (88%)
- No = 2 (12%)

**Was information from Central Patient Index/Abstract Discharge Transfer or another system downloaded to your abstracting system?**
- All hospital sites answered “yes,” resulting in 100%

**Identify the fields where default values are used for missing chart information**
- The majority of the responses identified that patient registration data flows over from registration module

**Data was abstracted using:**
- Paper documentation = 14 (88%)
- Electronic documentation = 14 (88%)
- Other = 1 (6%)

**Which coding tools did your coders use?**
- CIHI e-classification (Folio) = 16 (100%)
- Encoder software = 4 (25%)
- Other = 5 (31%)

**What documentation is necessary for a chart to be considered complete?**
- Operative Record / Intervention Report
- Admission History
- Physical History
- Consultations
- Discharge Summary
- Final Summary
- Death Certificate
- Front Sheet
- Pathology Report

**Do all coders have access to the ICD-10-CA/CCI Coding Standards?**
- All hospital sites answered ‘yes,’ resulting in 100%

**Do you have any hospital, regional or provincial specific coding practices, procedure or guidelines we should be aware of? Please explain.**
- Hospital guideline re the coding of hypocalcaemia post thyroidectomy (attached document)
- 2002/03 internal hospital practices for specific diagnostic typing and coding. 2003/04 initiated CIHI coding standards
- OBS….All diagnosis typed as (1)
- Hospital (site) specific coding manual, HDIS (multi-site coding group)
- Obstetric diagnoses all typed as (1)
- Manual

**Do coders use the CIHI on-line Coding Query Service?**
- All = 10 (63%)
- Some = 5 (31%)
- None = 1 (6%)
Do you abstract the Intervention Attributes?

- All = 4 (25%)
- Some = 0
- Mandatory Attributes only = 12 (75%)

How does your coding staff communicate with physicians on coding issues? Please describe the process and attach any appropriate documentation.

- Deficiency slip regarding incomplete/inaccurate diagnosis “blue sheet”; previously verbally when on-site
- Coders will communicate to physicians by writing questions on a deficiency flap, attaching to chart and returning chart to the physician’s office for a written response; the chart would then be flagged and returned to the coder for follow up once complete
- Use of diagnosis clarification form and ALC form
- Use diagnosis clarification form and ALC form; physician query form is the same as diagnosis form
- We use physician query form also known as diagnosis clarification form (ALC form and SOC/inpatient documentation form)
- Coding query form
- Internal communications messages (monthly)
- Rounds (concurrent coding)
- Verbal (department, nursing station)
- Coding communiqué (concurrent)
- Deficiency (electronic)
- Make a deficiency for physical and attach coding clarification request (see attached doc); if we want to take to physician only deficiency is created and “please see coders” is documented
- Coding team audits
- In house “CMG Communiqué” is a communication tool; this form has all diagnosis and interventions recorded and notes/queries can be addressed to documents
- Because of concurrent review, many questions can be asked in person.
- A query is sent to physician, attached to deficiency sheet on chart- follow up on completion of chart
- Approach physician directly when in Health Records department
- Telephone, visit physicians in their office
- Pink sheet - ask for chart to be returned when completed; white note directly to doctor
- When issues are identified, these are brought to the analyst’s attention. The physicians or Clinical Leader/Managers are contacted and are invited to address the coders on the issues
- Coders end coding query to chart and is flagged in the deficiency system
- Coders e-mail questions directly to physicians
- Coders will ask physicians when seen in hospital
- Coders on unit discuss with clinical staff
- The diagnosis clarification form is to be used at all sites, although rarely is
7 Bibliography

Canadian Institute for Health Information. *Improving Timeliness of Discharge Abstract Database Data*. 2000.


*Profiles of Ontario Case Costing Hospitals from Re-abstraction Study*, 2005.

(Footnotes)

1 Canadian Institute for Health Information. *Improving Timeliness of Discharge Abstract Database Data*. 2000.


7 *Profiles of Ontario Case Costing Hospitals from Re-abstraction Study*, 2005.
