Using the Manitoba Hospital Management Information System: Comparing Average Cost Per Weighted Case and Financial Ratios of Manitoba Hospitals (1997/98)

The Next Step

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EXECUTIVE SUMMARY

This report offers the people of Manitoba, policy-makers and administrators with selected information regarding the financial profiles of the hospitals in the province. This effort represents the first time this type of data has been presented in a format that allows for comparisons between all inpatient facilities. A Working Group was established to select important financial indicators. The financial and statistical data submitted by hospitals to Manitoba Health were reviewed through an interactive process with hospital and regional administrators to ensure the accuracy of the data upon which these measures were based. Information derived from hospital discharge summaries was used to account for the severity of illness and the complexity of patients served by different facilities to ensure the validity of the financial comparisons.

The cost associated with providing services to a standardized inpatient (referred to as the average cost per weighted case [ACPWC], or the cost associated with serving a standardized case with a Resource Intensity Weight of 1) was identified as an important indicator. Comparisons between facilities, hospital types and regional health authorities can be made with the information provided in this report. The highest ACPWC was among northern isolated and teaching hospitals, and the lowest was among intermediate and small rural facilities. Efficiency gains by northern isolated hospitals would likely have a small impact on provincial inpatient expenditures—in comparison to other hospital types—due to the small volume of inpatients served by these facilities.

For example, if northern isolated hospitals were able to attain efficiency improvements totalling $100 per weighted case—the size of reductions in provincial inpatient expenditures would approximate $70,000. By comparison, the ACPWC among teaching hospitals was also higher than other types of facilities, and any efficiency improvements in these high-volume facilities would have a significant impact on provincial inpatient expenditures. For example, if teaching hospitals were able to attain efficiency improvements totalling $100 per weighted case—the size of reductions in provincial inpatient expenditures would be approximately $8,680,000. Alternatively, it may be

possible to treat fewer patients in teaching facilities and more of these individuals in the less costly community hospitals as an approach to reducing provincial expenditures on inpatient care. Naturally, the selection of which cases would be appropriate for this type of transfer would require careful consideration by many stakeholders.

The finding of high average costs per weighted case in teaching hospitals, coupled with the significance of the volume of services provided by these facilities, makes these hospitals an obvious target for focused evaluation. Arguably, there are a number of potential reasons for higher ACPWC among teaching facilities. The presence of expenditures related to teaching that have not been completely excluded from the MIS data during the accounting process could account for higher case costs. Incomplete adjustment for the severity and complexity of inpatient cases—despite our use of the most valid case-mix adjustment tool available for use with inpatient data in Canada—could account for higher case costs. The availability and use of therapeutic services that are more readily accessible in Winnipeg could account for higher case costs. Alternatively, inefficiencies could account for higher ACPWC. Further study would be required to determine the source and rationale for differences in case costs—and the financial ratios provided in this report provide some insights in this regard. The Winnipeg Regional Health Authority is best placed to review these issues.

The Regional Health Authorities with the highest ACPWC were Churchill, Burntwood, Winnipeg, Brandon and Nor-Man, respectively. Those with the lowest ACPWC were Interlake, North Eastman, Marquette and South Eastman.

The financial profiles of individual facilities, hospital types and regional authorities in the province—as measured by 13 additional comparative indicators—suggest more variability than similarity in how they allocate their resources. For example, the proportion of expenditures reported by small multi-use facilities in the nursing inpatient services functional centre (55.6%) is much higher than that which was reported by major rural facilities (39.2%). The nursing inpatient functional centre primarily includes direct and

indirect nursing expenses. The proportion of expenditures reported by North Eastman in the nursing inpatient services functional centre (50.6%) is much higher than that which was reported by Nor-Man (35.4%). The proportion of expenditures reported by small multi-use facilities in the support services functional centre (21.6%) is much more than the proportion reported by urban community hospitals (13.9%). The proportion of expenditures reported by North Eastman region in the support services functional centre (22.8%) is higher than that which was reported by Winnipeg region (13.0%). The high proportion of undistributed-operating costs is notable, and would clearly influence the distribution of costs. In spite of this finding, the majority of expenditures among all hospital types and regional authorities are reported in the nursing inpatient and support services functional centres.

It is currently not possible to determine or compare the full cost of providing inpatient care to a standardized patient in different facilities, hospital types and health regions. Due to differences in accounting practices among facilities, many of the costs incurred by these facilities had to be excluded from the ACPWC calculation. For example, facilities vary in how they report physician and capital costs, and some expenditures are not reported in hospital financial records (e.g., the purchase of blood products and therapy services from outside sources). Only costs that were uniformly recorded for all facilities could be included in ACPWC calculations. ACPWC estimates, therefore, underestimate the true cost of serving inpatients. The figures presented in this report can be used for comparative purposes—they are not appropriate for estimating either the cost of caring for an individual case or the cost of serving a population.

Improvements in the use of financial and statistical Management Information System (MIS) and conformity of users of the system with uniform accounting principles are needed to enhance the utility, validity and reliability of these data for evaluative and comparative purposes. Most notably, the "rules" specified in the Manitoba Facility Reporting User Guide are not consistently followed in all hospitals—although anecdotal information suggests that this is improving over time. Uncertainty regarding the

allocation of funds to functional centres is evident, as the "Undistributed Section – Operating" accounting centre is being used excessively by smaller hospitals. MIS does not adequately account for facilities that share resources or hospitals that have juxtaposed personal care homes, and these circumstances occur in rural Manitoba. In addition, the interactive process between researchers and financial officers that was required to validate hospital cost allocations and comparative indicators was time-consuming. Little is known about the impact of the interactive process on the calculations contained in this report.

Comparative indicators are more valuable when they are perceived to be valid and received in a timely fashion. The growing interest and popularity of report cards to compare and rank the performance of hospitals will necessitate that the data upon which indicators are calculated be valid, reliable and timely.

Although there will be insights gained from the research presented in this report—the next challenges are clear. The information derived from this report—in combination with other assessments of hospital performance in the province (e.g., Stewart et al., 2000)—may be used to assist in making informed decisions and to stimulate action. The information systems upon which comparative indicators are based can be improved to ensure the utility, validity, reliability and timeliness of these measures. Only through completing the interactive "cleaning" process that was used in this project is it possible to have confidence in our ability to make fair comparisons.

1. INTRODUCTION

This report is about comparing selected financial and other operational characteristics of Manitoba's hospitals and is intended to assist policy-makers and administrators in their efforts to improve how these facilities are managed. A Working Group that consisted of individuals familiar with the operation of hospitals in Manitoba identified comparative indicators. Although the indicators selected and included in this report have been used to evaluate other health care facilities in Canada, this represents the first time that they have been used to compare all of the hospitals in Manitoba.

Financial, statistical and clinical information was used to develop the indicators, and measures have been standardized so that valid comparisons could be made. The Management Information System (MIS) for reporting financial and statistical data was formally introduced in all Manitoba hospitals in 1995/96. This report represents the second time that MIS data have been used to make comparisons across facilities. Our first project used 1995/96 data and provided estimates of the average cost per weighted case for the largest facilities in Manitoba. The current report broadens this to all Manitoba hospitals, and in addition to the cost per weighted case measure, provides other financial and operating ratios that are relevant to describing the operation of hospitals.

We have endeavoured to "clean" the MIS data using an interactive process with finance officers in hospitals and Regional Health Authorities. These individuals were provided with summarized data and asked to review and provide comments and/or corrections to the data. Although we have found that the MIS data included fewer errors than in our earlier study, we have still found room for improving the completeness and accuracy of these data—particularly in smaller hospitals.

Hospital discharge abstract data produced by Manitoba's hospitals, and the case-mix adjustment information (i.e., Resource Intensity Weights or RIW) produced by the Canadian Institute for Health Information (CIHI) were used to account for differences in

severity of illness and case complexity between hospitals. In 1997/98, for the first time, the grouping of cases was done using a "complexity overlay" that is expected to provide a more precise measure of acuity of different types of cases. As well, CIHI has been introducing Canadian cost data into the database that is used to develop the RIW, so that these weights should more accurately reflect practices in Canadian hospitals. Both of these developments have been implemented to enhance the validity of using this information to standardize comparisons made between inpatient facilities in Canada.

This project takes several major steps toward presenting standardized comparisons between all hospitals in Manitoba. The report also identifies issues that should be considered when reviewing these comparisons. Section 2 summarizes the methods used to select hospital performance indicators and operationalizes these measures. Section 3 presents hospital performance indicators province-wide and highlights comparisons between different types of hospitals and Regional Health Authorities. Section 4 provides a discussion and recommendations regarding specific areas for consideration.

There are a number of factors that contribute to differences between individual facilities, hospitals types and regions in the cost of serving inpatients. These factors include differences in size of operations, teaching status, efficiency of operations and the price of goods and services purchased. In addition, the level of integration of care within the facility as well as between the hospital and other hospitals or health care institutions must be considered—particularly among smaller hospitals. We have cooperated with RHA and hospital administrators to identify situations in which these determinants of cost differences likely affect the data presented.

We understand that the evaluation of Manitoba's hospitals is a constantly evolving process and expect that this report will contribute to these efforts.

2. METHODS

2.1 Introduction

The results presented in this report were developed in two stages. In the first stage, raw numbers (as submitted by hospitals to Manitoba Health) and comparative financial ratios were presented to hospitals and/or Regional Health Authorities for their review. This was done twice—once at the start of the project and once at the end—and was intended to allow hospital administrators to correct errors in MIS data and/or to provide explanations as to why the ratios reported for their facility appeared different from that of others. The second stage involved using these "cleaned" data to develop the final measure that is reported here—average cost per weighted case.

2.2 Databases

Two databases were used to develop the measures found in this report. The Management Information System (MIS) data that acute care hospitals submitted to Manitoba Health provided the financial and statistical data. Hospital inpatient discharge abstracts that were grouped according to CMG by the Canadian Institute for Health Information (CIHI) were used to determine the total weighted cases for each facility.

2.3 Selecting Financial Ratios and Proportional Expenditures

A small working group comprised of a hospital chief financial and information officer, and a Manitoba Health consultant/analyst assisted the authors in defining the project, selecting comparative indicators and developing protocols for working with the MIS data. Financial ratios that would likely be of value to hospital managers and administrators were selected after reviewing similar work that has been done elsewhere in Canada (HayGroup, 1998; Helyar et al., 1998; Jacobs & Hall, 1994; Pink, McKillip et al 1998). Six types of ratios are reported:

- Average cost per inpatient weighted case (2 indicators)
- Employee costs (3 indicators)
- Proportion of ambulatory care cost (1 indicator)

- Worked hours per emergency department visit (1 indicator)
- Food services cost (1 indicator)
- Proportional distribution of costs between functional centres (7 indicators)

2.4 Confirming Hospital Costs

Customized reports were prepared for every hospital in Manitoba. There were 74 acute care inpatient facilities in the province in 1997/98. Reports were sent directly to hospitals or to the Regional Health Authority according to the preferences of the Chief Executive Officer of each authority. These individuals were given two opportunities to review, adjust and/or comment on the MIS data submitted to Manitoba Health. This process was conducted to improve the validity of the MIS data, and the adjusted data were used in preparing the comparative indicators presented in this report. Table 1 summarizes the specific information provided in customized reports.

Table 1. Information provided to hospitals for their review

Proportion of total expenses reported for each of the functional centres (see Appendix C for a list of the functional centres)
Total nursing compensation
Total worked salaries and wages
Total salaries and wages
Worked salaries and wages as a percent of total salaries and wages
Total salaries and benefits
Total expenses
Salaries and benefits as a percent of total expenses
Total employee benefits expense
Total labour expense
Benefit expense as a percent of total labour expense
Total ambulatory care expense
Total direct patient care expense
Ambulatory care expense as a percent of direct patient care expense
Total emergency worked hours
Total emergency visits
Emergency worked hours per emergency visit
Total patient food services expense
Total inpatient days
Patient food services cost per patient day

Provincial averages for each of the items in Table 1 was provided, as well as the average proportion of expenditures for each functional centre for similar types of hospitals (see

Appendix D for the classifications of hospitals). The tables and charts sent to hospitals were similar to those found in Appendix F-3. For the first round of revisions, only the name of the facility receiving the report was indicated and all other hospital names were removed. For the second review, all facilities were identified by name.

On each facility-specific report, items that appeared to need further review by the hospital and/or regional finance officer were highlighted. Finance officers were specifically asked to provide an explanation for variances, and if appropriate, to adjust the amounts that were being used in this study. The type of situation where an adjustment would be made would most likely involve either correcting a mistake in classifying an expense or revenue, or not classifying transactions according to the Manitoba Facility Reporting System User Guide (Manitoba Health, 1997). If extraordinary events (e.g., the 1997 flood) or a third party (e.g., therapy services funded through a separate agency) influenced the reporting, adjustments were not made, but explanations were noted.

The first distribution of reports resulted in adjustments or notations for 27 hospitals. The types of adjustments typically included corrections of errors in assigning accounts, or in two cases redistributing employee benefits that had not been distributed to functional centres where the salaries and wages were paid. Notations included descriptive comments such as “all staff have been at the hospital for a long time and are at the top of the salary scale,” or “two beds were occupied by long-stay patients for the entire year.” The second distribution in which the names of all facilities appeared resulted in responses for 33 hospitals.

2.5 Estimating Total Expenditures for Inpatient Care

Although MIS clearly defines the direct cost of inpatient care (i.e., the “Nursing Inpatient Services” functional centre) like most financial reporting systems there are additional costs of providing care to inpatients that are recorded in other functional centres. See Appendix C for a list of functional centres. For example, the costs of laboratory tests

and occupational therapy provided to inpatients are included in the "Diagnostic and Therapeutic Services" functional centre. In addition, costs that are shared by all functional centres are also recorded separately—the cost of heating the building, providing meals and keeping the facility clean are all reported in the "Administrative and Support Services" functional centre. Therefore, a share of these functional centre costs needed to be attributed to inpatient care.

Total inpatient expenditures were calculated as follows:

- direct inpatient costs reported in the Nursing Inpatient Services functional centre
- plus the cost of providing diagnostic and therapeutic services to inpatients
- plus a share of the administrative and support services
- less all physician remuneration and building capital costs that are reported in the Nursing Inpatient Services, and the inpatient share of these costs that are reported in the Diagnostic and Therapeutic Services functional centre, and Administrative and Support Services functional centres.

To standardize expenditures on inpatient services to ensure valid comparisons between facilities, hospital types and regions, physician remuneration and capital costs had to be excluded due to differences in reporting. These adjustments resulted in $70 million in physician remuneration and $77 million in capital costs being excluded from all calculations. This is extremely important to remember when reviewing indicators such as average cost per weighted case—as these measures can only be used for comparisons of relative costs per standardized case and *do not* represent full costs per standardized case.

All remuneration paid to physicians was excluded as these costs may or may not be reported in MIS. Only 59 hospitals reported costs for physician remuneration, and the size of these expenditures ranged from $45 to over $32 million. These findings indicate that different funding and/or reporting methods are in place in Manitoba hospitals, and therefore expenditures on physician services must be removed from cost estimates when

comparisons are made. All capital costs for buildings were also excluded due to variability between facilities in the methods of accounting for these types of assets.

See Appendix B for additional details concerning the calculation of inpatient costs.

2.6 Determining the Total Weighted Cases for Each Hospital

In order to appropriately compare hospitals, it was important to consider and account for the severity of illness and complexity of cases served by different facilities. By "weighting" cases and thereby considering differences in the severity and complexity of individuals served by different facilities, information derived from hospitals – such as costs of care – can be standardized. This process allows for valid comparisons between facilities, hospital types, and regions by accounting for differences in the severity and complexity of the cases served.

The 145,797 cases discharged from Manitoba hospitals in 1997/98 were grouped into Case-Mix Groups (CMGs) and assigned a Resource Intensity Weight (RIW™) by the Canadian Institute for Health Information (CIHI). This information was used to account for differences in the severity of illness of cases served by different facilities, hospital types and regions. The RIW for a particular case reflects the relative resources consumed by that case. All "typical" cases in a given CMG have the same RIW. "Atypical" cases (i.e., deaths, signouts, transfers to or from an acute care facility, and long-stay outliers) are assigned a RIW particular to the length of stay of the individual case. CIHI annually publishes a description of the grouping and RIW assignment process.

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In 1997/98 CIHI introduced a complexity overlay (Plx) and age adjustment to further refine the RIW assigned to cases. Plx places most cases[1] in one of four levels of complexity: no complexity, complexity related to chronic condition(s), complexity related to serious/important condition(s), and complexity related to potentially life-threatening condition(s). Cases are also classified according to age group (0 to 17 years, 18 to 69 years, and 70+ years). These additional classifications allow the RIW to be a more precise measure of the relative resources consumed by a particular case. To further increase the validity of RIW, CIHI has been introducing Canadian data into the calibration database that is used to develop RIWs rather than the American data upon which the earlier case-mix adjustment formula was based.

The total weighted cases (TWC) for a hospital equals the sum of the case weights for all cases discharged from the facility in a particular year. However, because some of the people discharged in 1997/98 were in hospital in 1996/97 and some of those who were admitted in 1997/98 were not discharged until 1998/98, adjustments were necessary. To do this it was necessary to adjust for the "beginning of the year"—"end of the year" issue. The adjustments that were made are described in Appendix A, and the adjusted TWC for each hospital are provided in Appendix F-5, Table 8.

2.7 Average Cost Per Weighted Case

The average cost per weighted case is calculated by dividing the total inpatient costs by the total weighted cases. For the provincial average, the total costs for all patients in the province were divided by the total weighted cases in the province. For the hospital specific average, the cost for inpatient care in each hospital was divided by the total weighted cases for each hospital. The average cost per weighted case reflects the cost associated with a standardized inpatient who has a resource intensity weight of one, and

[1] Four major clinical categories (MCCs) are excluded from the complexity overlay: MCC 14 - pregnancy and childbirth, MCC 15 - newborns and neonates with conditions originating in the perinatal period, MCC 19 - mental diseases and disorders, and MCC 24 - HIV Infections (AIDS) (CIHI 1998).

can be used to compare the financial performance of facilities "as if" they treated the same inpatient. Therefore, the average cost per weighted case provides a measure of the cost to provide care to a "standard" patient.

If the average cost per weighted case is higher in Hospital 'A' than in Hospital 'B', then the cost of providing services to a standardized patient is higher in Hospital 'A' than in Hospital 'B'. Again, it should be noted that the average cost per weighted case reported here is not the "full cost" for care received within the facility. Physician costs and capital related costs have been excluded, and certain costs such as blood and blood products for all hospitals, and laboratory, imaging and therapy services for some hospitals are not reported in MIS and are therefore not included. However, the values calculated for the comparative indicators in this report result from the same rules being applied to all facilities.

The provincial average cost per weighted case was calculated to determine the average cost of serving an inpatient in Manitoba—irrespective of the location of care. This value equals the sum of total inpatient expenditures in the province (excluding physician and capital costs, and expenses not reported in MIS) divided by the total weighted cases in the province. The hospital average cost per weighted case was calculated to determine the average cost of serving an inpatient (excluding physician and capital costs, and expenses not reported in MIS) at an average hospital in Manitoba.

2.8 Developing Comparative Financial Ratio Indicators

As was described earlier, important financial ratios were identified by a Working Group, and all comparative indicators included in this report were developed using financial data validated by the hospitals themselves (See Section 2.4: Confirming Hospital Costs)[2].

[2] Not all facilities responded to our requests for them to review their data. Although we have assumed a non-response to mean the data accurately reflects the facility operation, it may mean that the facility did not respond for other reasons.

Table 2 describes the ratios that use the Total Weighted Cases as the denominator, while Table 3 lists other financial ratios.

Table 2. Cost Per Weighted Case Measures

Measure	Formula	Description	Interpretation
Provincial Measures			
▪ Average cost per weighted case (Provincial average)	Direct inpatient expenses for all hospitals + a share of overhead costs for all hospitals – (physician costs + capital costs) / Total weighted inpatient cases in the province	The average cost per weighted case, excluding medical remuneration and capital costs for buildings. This measure includes a share of services that are provided to all functional centres ("overhead" costs), and the inpatient share of diagnostic and therapeutic services.	This indicator measures the average cost per weighed case for all inpatient cases served in Manitoba in 1997/98.
▪ Average cost per weighted case (Average of hospitals)	The Sum of the average cost per weighted case for each hospital / Number of hospitals	The average of the average cost per weighted case for all hospitals.	Unlike the "Average cost per weighted case— Provincial average," this value is not affected by the large number of cases and the relatively higher ACPWC of the teaching hospitals. This is the average against which comparisons should be made.
▪ Direct cost per weighted case (Hospital average)	Direct inpatient expenses– (physician costs + capital costs) for each hospital / Number of hospitals	The average direct cost per weighted case in the province. This measure does not include any services that are shared with other functional centres ("overhead") costs, physician remuneration or capital costs, but does include nursing administration. The cost of diagnostic and therapeutic services that are provided to inpatients is included.	This indicator measures the average cost of direct services provided to inpatient cases in Manitoba in 1997/98 – excluding physician expenditures. Therefore, administrative, support, capital and other indirect costs are excluded.
Hospital Specific Measures			
▪ Average cost per weighted case	Direct inpatient expenses + a share of overhead– (physician costs + capital	The average cost per weighted case, excluding medical remuneration and capital costs for buildings.	Using weighted cases as the denominator, adjustments are made for differing resource requirements of different types of

	costs) Total weighted cases	This measure includes a share of services that are provided to all functional centres ("overhead" costs), and the inpatient share of diagnostic and therapeutic services.	cases. This adjustment results in a standardized measure of "output" of hospitals (i.e., a weighted case). Variability in the average cost per weighted case results from differing costs, not different types or mixes of cases.
▪ Average direct cost per weighted case	Direct inpatient expenses– (physician costs + capital costs) Total weighted cases	The average direct cost per weighted case. This measure does not include any services that are shared with other functional centres ("overhead") costs, physician remuneration or capital costs, but does include nursing administration. The cost of diagnostic and therapeutic services that are provided to inpatients is included.	Using weighted cases as the denominator, adjustments are made for differing resource requirements of different types of cases. This adjustment results in a standardized measure of "output" of hospitals (i.e., a weighted case). Variability in the average cost per weighted case results from differing costs, not different types or mixes of cases.

Table 3. Financial Ratios

Measure	Formula	Description	Interpretation
Other financial ratios			
▪ Worked salaries and wages as a percent of total salaries and wages	Worked salaries and wages / Total salaries and wages	Worked salaries and wages are the amounts paid to individuals for time that they work. Total salaries and wages include worked salaries plus other amounts that are paid to individuals for non-worked activities such as for vacations, sick time and educational time. Remuneration paid to physicians are excluded.	A higher value indicates that a lower proportion of salaries and wages are paid for non-working activities. Lower values indicate that a larger proportion of salaries and wages are paid for non-working activities.
▪ Salaries and benefits as a percent of total expenses	Total salaries and benefits / Total expenses	The proportion of all hospital expenditures related to compensation and benefits for employees, excluding remuneration paid to physicians.	A higher value indicates more being paid for staff and less for other items such as supplies and equipment.
▪ Benefit cost as a percent of total labour cost	Benefit cost / Labour cost	The "benefit" rate, or the proportion of all staff costs that are benefit costs.	A higher value indicates the cost of employee benefits is greater.
▪ Ambulatory care expense as a percent of direct patient care expenses	Direct ambulatory care expenses / Total direct patient care expenses	The proportion of all direct patient care expenses that are incurred for ambulatory care. Diagnostic and therapeutic services costs are not included in this measure, and physician remuneration and capital costs are excluded.	A higher value indicates a greater proportion of expenditures on ambulatory care.
▪ Total emergency worked hours per emergency visit	Emergency department worked hours / Emergency visits	The average amount of staff time per visit to the emergency room.	A higher value indicates that, on average, either the people that are seen in the emergency room require more care, or that few people are seen but staff are available to care for

Measure	Formula	Description	Interpretation
			emergencies should they arise.
▪ Patient food services total cost per patient day	$\frac{\text{Patient food services cost}}{\text{Inpatient days}}$	The average cost per day for patient food services.	A higher value indicates a higher daily cost for patient meals.

Measure	Formula	Description
Proportion of expenses by functional centre [3, 4]		
▪ Administrative and Support Services	$\frac{\text{Administrative and Support Services Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to administrative and support services functions.
▪ Nursing Inpatient Services	$\frac{\text{Nursing Inpatient Services Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to nursing inpatient services functions.
▪ Ambulatory Care Services	$\frac{\text{Ambulatory Care Services Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to ambulatory care services functions.
▪ Diagnostic and Therapeutic Services	$\frac{\text{Diagnostic and Therapeutic Services Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to diagnostic and therapeutic services functions.
▪ Undistributed – Ancillary	$\frac{\text{Undistributed – Ancillary Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to undistributed ancillary functions.
▪ Undistributed – Operating	$\frac{\text{Undistributed – Operating Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to undistributed operating functions.

[3] See Appendix C for information about the services that are included in each of these functional centres.
[4] Physician remuneration and capital costs have been excluded from all ratios.

Measure	Formula	Description
▪ Other (Community Health Centres/Clinics, Research, Education)	$\frac{\text{Other (Community Health Centre/Clinics, Research, Education) Expenses}}{\text{Total Expenses}}$	The proportion of all hospital expenses that relate to other functions.

3. COMPARISONS

This section: (a) summarizes province-wide comparisons of average cost per weighted case, financial ratios and the distribution of expenditures within Manitoba's hospitals, and (b) offers a discussion regarding differences in comparative indicators that have been found between different types of hospitals and between Regional Health Authorities. More details regarding comparisons and observations about individual facilities are provided in Appendix F. In particular, Appendix F-1 provides more information regarding cost per weighted case, and comparisons between hospitals of the same type. Appendix F-2 provides comparative information by Regional Health Authorities.

As summarized in Table 4a, the average cost per weighted case for all inpatient cases in Manitoba in 1997/98 was $2,194 (i.e., average cost per weighted case for all inpatient cases served in the province). The average cost of serving an inpatient at an "average hospital" in Manitoba was $1,697 (i.e., cost per weighted case—average of hospitals)[5]. The difference between these two values results from the provincial average being heavily weighted by teaching hospitals—these facilities serve 38% of total weighted cases in the province and have a relatively high cost per weighted case ($2,697). The cost per weighted case—average of hospitals, is not as influenced by the costs associated with any one type of hospital as it represents the average of each hospital's cost per weighted case. As described in Section 2.7, these figures do not reflect the full cost of serving an inpatient case as certain costs have been excluded. We have used both the "cost per weighted case—average of hospitals" and the "cost per weighted case—provincial average" for comparison purposes in this report, and indicate this when the comparison is made.

The direct cost per weighted case for an average hospital in Manitoba in 1997/98 was $1,110. This value represents the average cost of providing direct services to a

[5] We recognize that "averages of averages" (i.e., cost per weighted case–average of hospitals) is often not used as a basis of comparison. For this report we have chosen to provide these values as we feel it is important to also understand the variability between hospitals that is presented in the standard deviation and range.

standardized inpatient with a weight of one at an average hospital in the province. As mentioned, physician and building capital costs are not included in any of the values, and the direct cost per weighted case also excludes all administrative and support services costs. Table 4a provides a summary of these province-wide indicators.

Table 4a. Summary of Province-Wide Comparisons—Cost Per Weighted Case

	Mean (Standard Deviation)	Median	Minimum	Maximum
Costs per weighed case[6]				
▪ Average cost per weighted case (Provincial average)[7]	$2,194	N/A	N/A	N/A
▪ Average cost per weighted case (Average of hospitals)[8]	1,697 (429)	$1,597	$1,045	$2,953
▪ Teaching hospital average cost per weighted case[9]	2,697 (362)	N/A	2,441	2,953
▪ Urban community hospital average cost per weighted case[9]	1,872 (388)	1,787	1,453	2,549
▪ Major rural hospital average cost per weighted case[9]	1,620 (387)	1,473	1,292	2,313
▪ Intermediate rural hospital average cost per weighted case[9]	1,508 (470)	1,359	1,116	2,732
▪ Small rural hospital average cost per weighted case[9]	1,581 (291)	1,548	1,045	2,277
▪ Northern isolated hospital cost per weighted case[9]	6,329 (4872)	4,955	2,133	13,272
▪ Small multi-use facility cost per weighted case[9]	2,236 (357)	2,355	1,786	2,581
▪ Average direct cost per weighted case	1,110 (322)	1,009	659	2,535

[6] The average cost per weighted case for four hospitals was classified as an outlier. Results for these hospitals are not included in the provincial or hospital's average cost per weighted case ratios, but are included in the other ratios.
[7] The provincial average cost per weighted case is calculated by dividing the costs for all hospitals in the province by the total weighted cases in the province.
[8] The hospital's average cost per weighted case is calculated by dividing the sum of all hospital's average cost per weighted case by the number of hospitals.
[9] The values reported here are based on the individual hospital results, unlike those in Figure 1, where the total expenses were divided by the weighted cases for each type of hospital. This is the average of the average cost per weighted case for the type of hospital indicated.

Financial ratios for all facilities in Manitoba are presented in Table 4b. Three of these indicators provide insight into employee costs at hospitals in the province. Hospitals in the province spent on average 80.2% of expenditures—excluding physician and capital costs—on salaries and benefits (ranging from 59.0 to 95.7%) and 11.1% on benefits (ranging from 8.4 to 16.3%). Worked salaries and wages as a percent of salaries (excluding physician costs) was 84.2% (ranging from 83.4 - 85.9%)[10].

Three additional indicators provide insight into ambulatory care services, emergency department operations and food service costs. Ambulatory care costs represented 13.7% of direct patient care expenses (excluding physician costs), and food services cost per patient day averaged $16.65. The average number of hours worked by emergency room staff (excluding physicians) per emergency department visit was 3.3 (ranging from 1.9 to 5.2 hours)[11].

Finally, the distribution of costs among functional centres for all hospitals in the province was evaluated and is reported in Table 4b. The values represent proportions of total expenditures – excluding expenses associated with physician and capital costs. The majority of costs were allocated to nursing inpatient service functional centre, followed by support and administrative services functional centre.

[10] Worked salaries and wages are reported separately from other salaries and wages only in the teaching and urban community hospitals.
[11] Only the teaching and urban community hospitals report emergency room hours.

Table 4b. Summary of Province-Wide Comparisons—Financial ratios

	Mean (Standard Deviation)	Median	Minimum	Maximum
Financial ratios				
▪ Worked salaries and wages as a percent of total salaries and wages	84.2% (1.1%)	83.6%	83.4%	85.9%
▪ Salaries and benefits as a percent of total expenses	80.2% (6.5%)	80.0%	59.0%	95.7%
▪ Benefit cost as a percent of total labour cost	11.1% (1.3%)	11.1%	8.4%	16.3%
▪ Ambulatory care expense as a percent of direct patient care expenses	13.7% (10.2%)	15.7%	0.0%	33.5%
▪ Emergency department worked hours per emergency visit	3.3 hours (1.1 hours)	3.1	1.9	5.2
▪ Patient food services cost per patient day	$16.65 ($7.49)	$14.70	$8.35	$59.51
Proportion of expenses by functional centre				
▪ Administrative Services	12.0% (3.5%)	11.5%	6.4%	23.1%
▪ Support Services	19.1% (5.5%)	18.6%	8.6%	41.5%
▪ Nursing Inpatient Services	46.9% (7.9%)	49.2%	27.1%	61.0%
▪ Ambulatory Care Services	3.7% (5.1%)	0.1%	0.0%	18.3%
▪ Diagnostic and Therapeutic Services	6.0% (5.5%)	3.0%	0.0%	20.9%
▪ Undistributed – Operating	12.4% (5.3%)	11.9%	1.5%	32.0%
▪ Other (Community Health Centre/Clinics, Research, Education, Undistributed – Ancillary)	1.8% (1.4%)	1.4%	0.1%	7.2%

3.1 Cost Per Weighted Case Comparisons Between Hospitals and Health Regions

Comparisons were made between different types of hospitals, and hospitals in different Regional Health Authorities. The average cost per weighted case for a particular type of hospital can be expressed either as the sum of all inpatient costs for all facilities in the group divided by the total weighted cases for all hospitals in the group or as the average of the average cost per weighted case for all hospitals in the group. Table 4a provides the average of the average cost per weighted case, and Figure 1 uses the total costs for the group divided by total weighted cases for the group. Observations concerning individual facilities and comments from hospital administrators are provided in Appendix F.

The average cost per weighted case for a particular region is the sum of all inpatient costs for all cases in all hospitals in the region divided by the total weighted cases for the region. These values are graphically illustrated in Figure 2.

3.1.1 Costliness by Type of Hospital

The type of facilities with the highest average cost per weighted case – or the highest cost for serving a standardized inpatient – were northern isolated ($6,329[12]) and teaching ($2,697) hospitals. Facilities with the lowest average cost per weighted case were intermediate ($1,508) and small ($1,581) rural hospitals (Table 4a).

Although the northern isolated hospitals have the highest average cost per weighted case, they served a very small portion of inpatient cases in Manitoba in 1997/98. Therefore, any potentially attainable efficiency and/or cost savings in these facilities would likely have a small impact on provincial expenditures for inpatient services – in comparison to other types of facilities. For example, if these facilities were able to attain efficiency improvements totalling $100 per weighted case – the size of reductions in inpatient expenditures in Manitoba would be $70,500.

Conversely, the costs per weighted case among teaching hospitals ($2,697) was higher than other types of facilities. As teaching hospitals serve an extremely large portion of inpatient cases in the province, any efficiency improvements would have a significant impact on provincial expenditures for inpatient services. For example, if these facilities were able to attain efficiency improvements totalling $100 per weighted case – the size of reductions in inpatient expenditures in Manitoba would be $8,680,200.

Previous studies also document the higher than expected costs associated with inpatient services provided by teaching hospitals (Ontario Hospital Association, 1999; Shanahan et al., 1994). In 1994, Shanahan et al. used 1991/92 MIS and case-mix data from Manitoba and determined that the average cost per weighted case for teaching hospitals was 35% higher than the average cost per weighted case for urban community hospitals. She indicated that higher costs per weighted cases in teaching hospitals were not caused by the indirect costs of residents and interns. In this current study, the costs associated with residents and interns have also been excluded from the average cost per weighted case indicator as physician and capital costs have been removed from the calculation of this value, as well as expenditures attributed to the education functional centre.

The findings of this current report indicate that the cost per weighted case among teaching hospitals ($2,697) was 44% higher than the urban community hospitals ($1,872). As mentioned previously, adjustments for severity and complexity of illness were made to the data to account for differences in the acuity of patients, and expenditures associated with physician and capital costs, as well as the education functional centre have been excluded from these calculations. In spite of this, sizeable differences in average cost per weighted case between teaching and other types of hospitals remain.

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[12] The high average cost per weighted case for northern isolated hospitals is driven by one hospital with a very small number of weighted cases. If the average cost per weighted case (average of hospitals) was calculated by taking the total costs for these hospitals and dividing them by the total weighted cases, the cost per weighed case would be $3892.

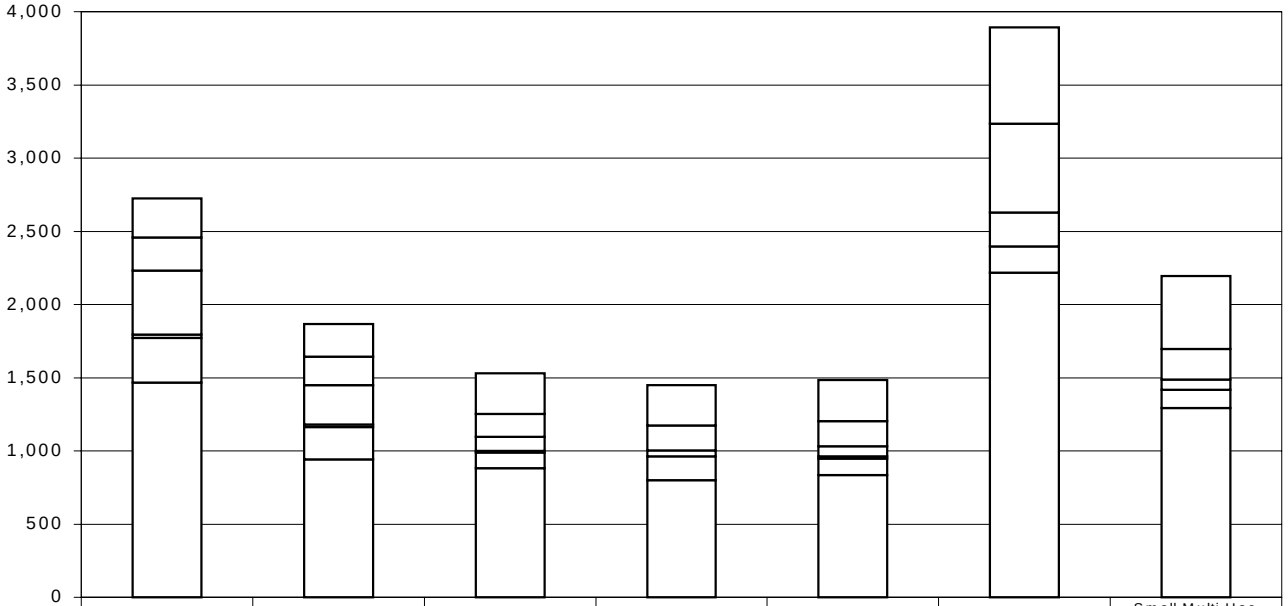
Arguably, there are a number of potential reasons for higher average costs per weighted case among teaching facilities. The presence of expenditures related to teaching that have not been completely excluded from the MIS data during the accounting process could account for higher case costs. Incomplete adjustment for the severity and complexity of inpatient cases—despite our use of the most valid case-mix adjustment tool available for use with inpatient data in Canadian—could account for higher case costs. The availability and use of diagnostic and/or therapeutic services that are more readily accessible in teaching hospitals could account for higher case costs. Alternatively, inefficiencies could account for the higher average costs per weighted case among teaching facilities. Further study would be required to determine the source and rationale for differences in average costs per weighted case—and the financial ratios provided in this report provide some insights in this regard. As mentioned previously, a small reduction in the relatively high cost per weighted case among teaching hospitals achieved through changed management and/or treatment practices would have a major impact on provincial expenditures on inpatient services. Alternatively, treating fewer patients in these institutions and more of these individuals in the less costly community hospitals might be an alternative approach to reducing provincial expenditures on hospitals. Naturally, the selection of which cases would be appropriate for this type of transfer would require careful consideration by hospital administrators, physicians and other stakeholders.

Northern isolated hospitals and small multi-use facilities also had higher costs per weighted case than the provincial and hospital average (Table 4a). Information derived from financial officers suggests that the higher cost per weighted case among these facilities may be related to accounting practices and/or flexible capacity. Several administrators indicated that these facilities provide a substantial amount of ambulatory care and report expenditures associated with these services as inpatient costs. In addition, these facilities have high vacancy rates—as documented in a recent report from the Manitoba Centre for Health Policy and Evaluation (Stewart et al., 2000) – and fixed costs are thereby distributed among fewer cases.

Urban community hospitals had higher average costs per weighted case than the average of hospitals (Table 4a). Major rural, intermediate rural and small rural hospitals all had average costs per weighted case that were lower than the provincial average and the average of hospitals (Table 4a). The consistency of costs between these three types of rural hospitals is somewhat surprising, given the different functions that are performed in these hospitals. However, a recent MCHPE study (Stewart, 2000) showed that there are consistent differences across some of the groups of rural hospitals in terms of acuity, complexity and even occupancy rate. In combination, the results from these two studies suggest that the acuity and complexity adjustments that were used as part of this project to calculate the adjusted cost per weighted case accounted for differences in the types of individuals seen in these facilities.

Figure 1 shows the costs presented in a slightly different way. The hospital type is the unit of analysis with the ACPWC calculated using the total inpatient costs for each type of hospital (with the previously mentioned exclusions) divided by the total weighted cases to each type of hospital. The ranking is the same as is shown in Table 4a, except for the intermediate and small rural hospitals, which switch sixth and seventh positions. The provincial average cost per weighted case ($2,194) should be used as the basis of comparison for this chart.

Figure 1. Average Cost Per Weighted Case ($) by Hospital Type, Manitoba Hospitals 1997/98*



	Teaching	Urban Community	Major Rural	Intermediate Rural	Small Rural	Northern Isolated	Small Multi-Use Facilities
Support Services	267	223	280	275	280	658	499
Administration Services	226	194	154	172	173	604	209
Diagnostic & Therapeutic Services	437	270	96	41	67	234	68
Inpatient Services-Other	22	17	12	-9	15	-1	-10
Inpatient Services-Supplies	306	221	109	163	113	179	124
Inpatient Services-Compensation	1465	942	881	799	835	2217	1294

* The ACPWC presented in this chart is calculated using the formula: Total Costs for Inpatient Care for this type of hospital / Total Weighted Cases for this type of hospital.

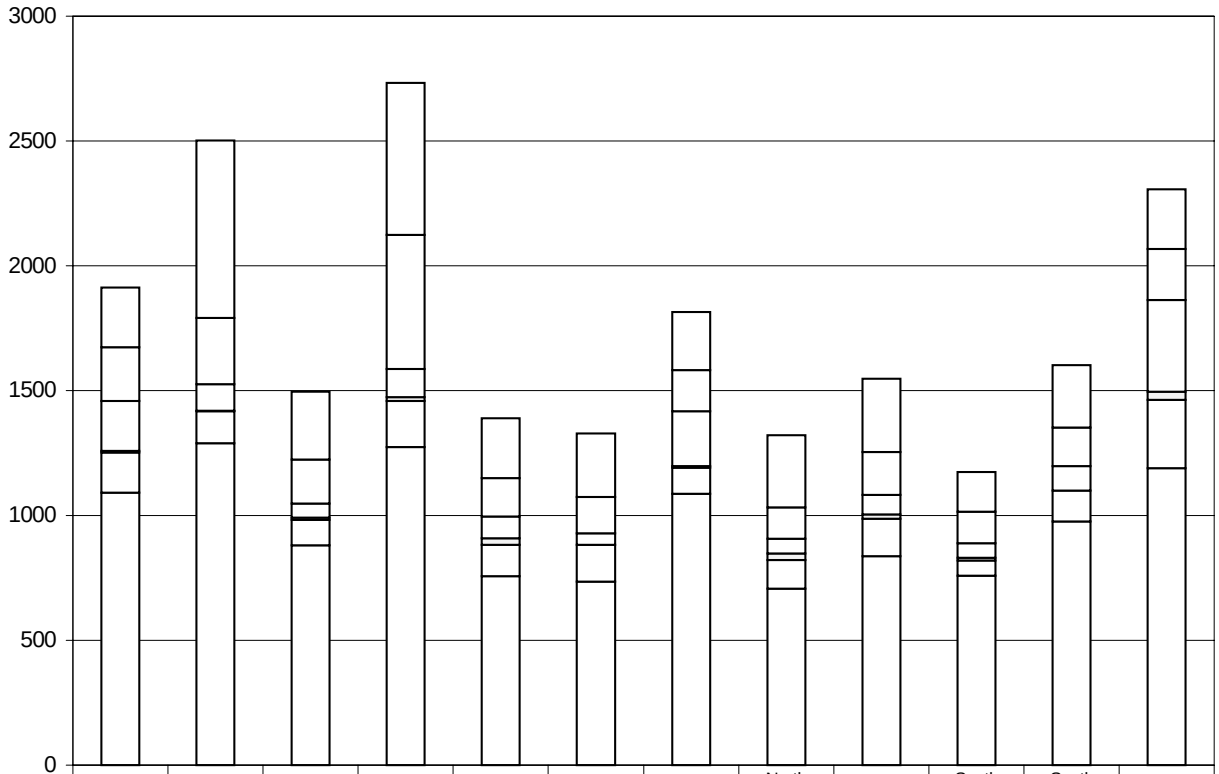
3.1.2 Costliness by Regional Health Authority

Hospitals in the most northern regional health authorities (i.e., Burntwood and Churchill) had the highest average cost per weighted case. These higher case costs may be attributable to higher input costs (e.g., goods, labour and transportation), excess capacity, flexible capacity that remains available to meet variability in need, and the use of accounting procedures that report costs for ambulatory care in the inpatient care functional centre. Figure 2 provides comparative information on average cost per weighted case among the regional authorities.

Hospitals in the Winnipeg Regional Health Authority (WRHA) have average costs per weighted case above the provincial and hospital average. Figure 2 indicates that the WRHA spends a larger amount of money on diagnostic and therapeutic services and inpatient supplies to serve a standardized inpatient case than other authorities' hospitals.

Brandon and Nor-Man regional health authorities have the next highest costs per weighted case. Those with the lowest ACPWC are Interlake, North Eastman, Marquette and South Eastman.

Figure 2: Average Cost per Weighted Case ($) by RHA, Manitoba Hospitals 1997/98



	Brandon	Burntwood	Central	Churchill	Interlake	Marquette	Nor-Man	North Eastman	Parkland	South Eastman	South Westman	Winnipeg
Support Services	241	711	270	608	239	255	231	289	294	158	251	239
Administration Services	215	265	177	536	153	145	165	126	172	126	155	204
Diagnostic & Therapeutic Services	200	108	56	113	89	47	221	59	78	60	97	367
Inpatient Services-Other	7	2	9	16	25	-15	5	26	19	10	-3	32
Inpatient Services-Supplies	160	127	103	185	127	147	105	116	149	61	124	275
Inpatient Services-Compensation	1091	1289	880	1274	756	735	1088	706	837	759	977	1189

3.1.3 Summary

The average cost per weighted case among hospitals in Manitoba has been compared to the provincial and hospital averages. Comparisons have also been made between hospital types and regional health authorities. Costs have been standardized to account for differences in severity and complexity of cases between hospitals and regions and variability in accounting practices to enhance the validity of comparisons. The highest case costs are among northern isolated and teaching hospitals, and the lowest are among intermediate and small rural facilities. The high volume of cases served at teaching hospitals – and the magnitude of impact on provincial expenditures of any efficiency gains in these types of facilities – makes them obvious targets for focused evaluation.

The regional health authorities with the highest case costs include Churchill, Burntwood, Winnipeg, Brandon and Nor-Man, respectively. Those with the lowest case costs are Interlake, North Eastman, Marquette and South Eastman.

When comparing hospitals, a higher average cost per weighted case may result from such things as:

- mis-stated data (financial, statistical or discharge abstract)
- higher input costs, such as those associated with differences in the costs of goods, labour and transportation,
- regional considerations,
- differences in approaches to treatment, and
- inefficiencies.

While we acknowledge that inaccurate data or differences in accounting practices may be the cause of some the differences that have been found, every effort has been made to work with the hospital administrators and financial officers to identify and correct these errors and inconsistencies. However, because many errors or inconsistencies do not

appear to be system-wide, it is unlikely that the errors would contribute significantly to the provincial average cost per weighted case.

This project points to three areas requiring improvements in recording financial and statistical information if MIS data are to be used for comparative indicators. These include the costs of ambulatory care surgery being reported in inpatient functional centres; and the "sharing" of resources between hospitals and personal care homes, and between two or more hospitals. And finally, we have noted that some costs of providing care are not reported in MIS (i.e., regional therapy services, provincially funded laboratory and imaging services, and blood/blood products).

Higher input costs such as goods, labour and transportation—particularly among northern and isolated hospitals—can partially explain the much higher cost per weighted case at these hospitals. Other important regional conditions that influence case costs include the requirement of flexible capacity to meet variability in demand. A recently published report on rural and northern hospitals by the Manitoba Centre for Health Policy and Evaluation (Stewart et al., 2000) has shown that these facilities provide a much higher proportion of care to area residents than do small rural and multi-use hospitals. The report also documents their low occupancy rates and the low intensity of the services provided.

3.2 Distribution of Expenditures for Manitoba Hospitals

To assist in identifying areas of difference between hospitals that may contribute to variability in the average cost per weighted case, the distribution of expenses reported in MIS has been reviewed. We have not attempted to draw conclusions about the different distribution of expenses – rather these can be used as a tool to identify areas for further examination. Figure 3 presents this distribution in Manitoba hospitals[13].

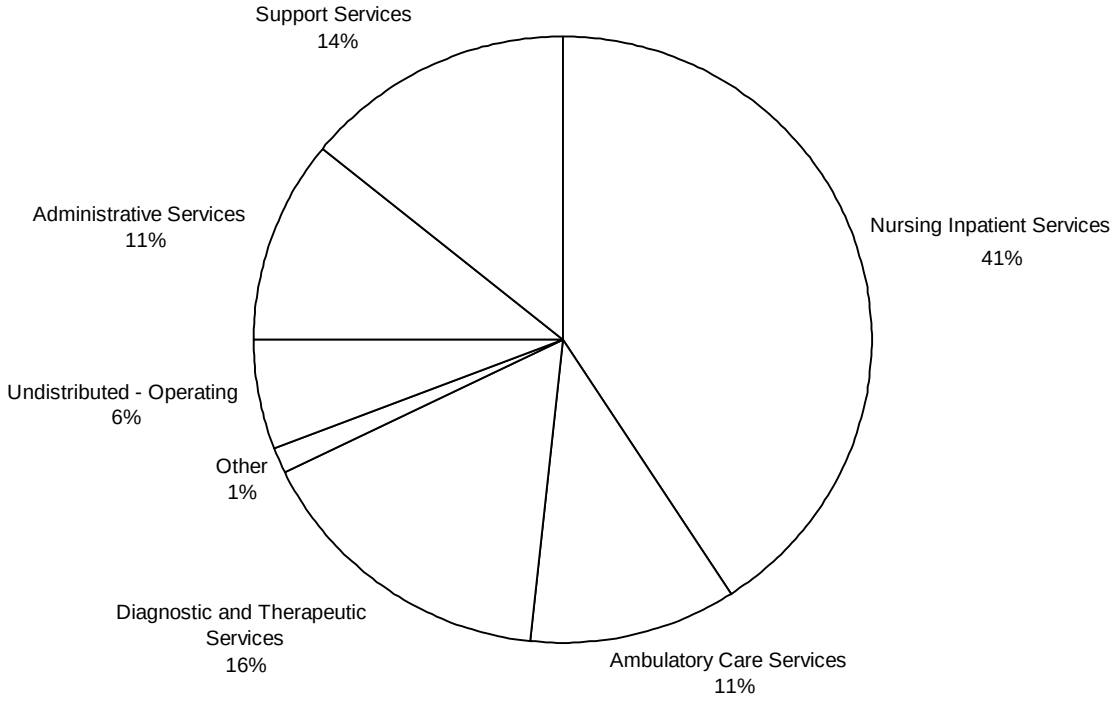
[13] As was described in Section 2.5 certain costs are excluded from the analyses to enhance standardization.

Forty-one percent of inpatient expenditures – other than those attributable to physician and capital costs – by Manitoba's hospitals in 1997/98 were reported in the Nursing Inpatient Services functional centre. Diagnostic and therapeutic services represented 16% of expenditures, while support services were 14%[14]. Ambulatory care services (outpatient care) accounted for 11%. See Appendix C for a listing of the functions included in each category. Results for individual hospitals are reported in Appendix F-3.

Figure 3: Distribution of Expenses by Functional Centre

All Manitoba Acute Care Hospitals

1997/98



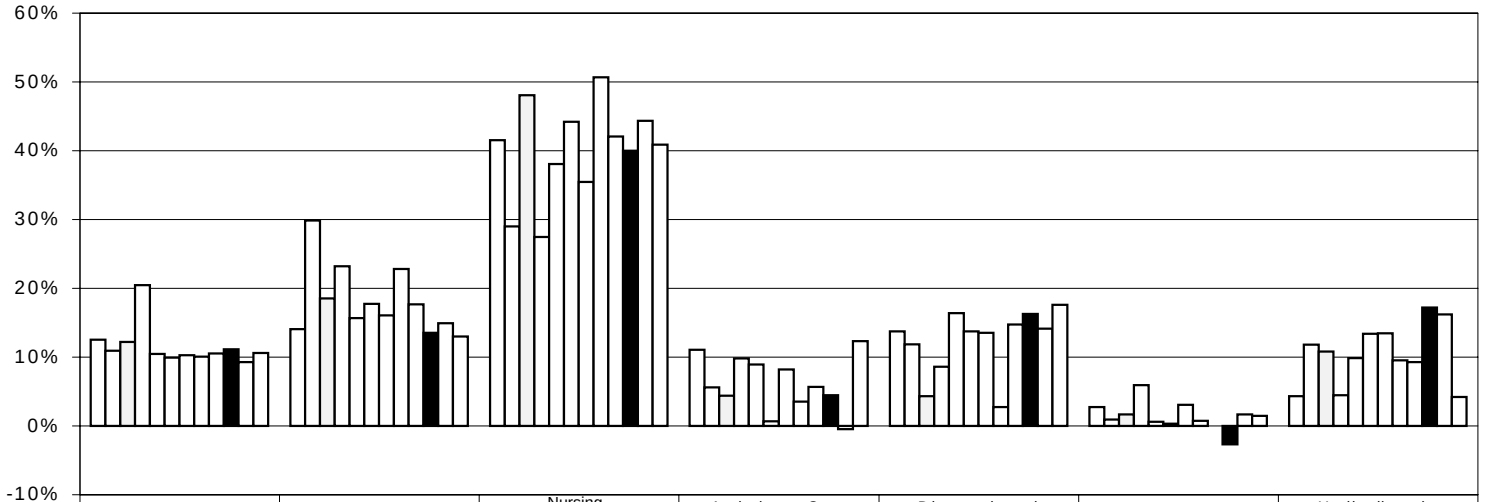
[14] Diagnostic and therapeutic services functional centre and the administrative and support services centres incur their costs as a result of providing services to inpatients and outpatients. When the direct costs of inpatient care are reported, a portion of the diagnostic and therapeutic costs was added to the direct inpatient costs. When the direct and indirect costs of inpatient care are shown, a portion of both diagnostic and therapeutic costs and administrative and support services costs were added to the direct costs of inpatient care. Again, note that estimates of direct and indirect expenses exclude physician remuneration and capital related costs.

3.3 Distribution of Expenses by Facility Type and Regional Health Authority

Figures 1, 2 and 3 illustrate that the majority of expenditures occur in functional centres reported in the MIS system as inpatient and support services. However, there is variability between hospital types and regional authorities in the proportion of expenditures reported in these functional centres. For example, the proportion of expenditures reported by small multi-use facilities in the nursing inpatient services functional centre (55.6%) is much higher than the proportion reported by major rural facilities (39.2%). The proportion of expenditures reported by North Eastman in the nursing inpatient services functional centre (50.6%) is much higher than the proportion reported by Nor-Man (35.4%). The proportion of expenditures reported by small multi-use facilities in the support services functional centre (21.6%) is much more than the proportion reported by urban community hospitals (13.9%). The proportion of expenditures reported by North Eastman region in the support services functional centre (22.8%) is higher than the proportion reported by Winnipeg region (13.0%). The high proportion of undistributed – operating costs is notable, and would clearly influence the distribution of costs.

Figures 4 and 5 present the distribution of expenditure categories between hospital types and regional authorities. As described earlier, physician and capital costs were not included in the calculation of total expenditures nor therefore in the development of these proportions due to different reporting methods between facilities.

Figure 4: Distribution of Expenses by Functional Centre and Region
Manitoba Acute Care Hospitals
1997/98



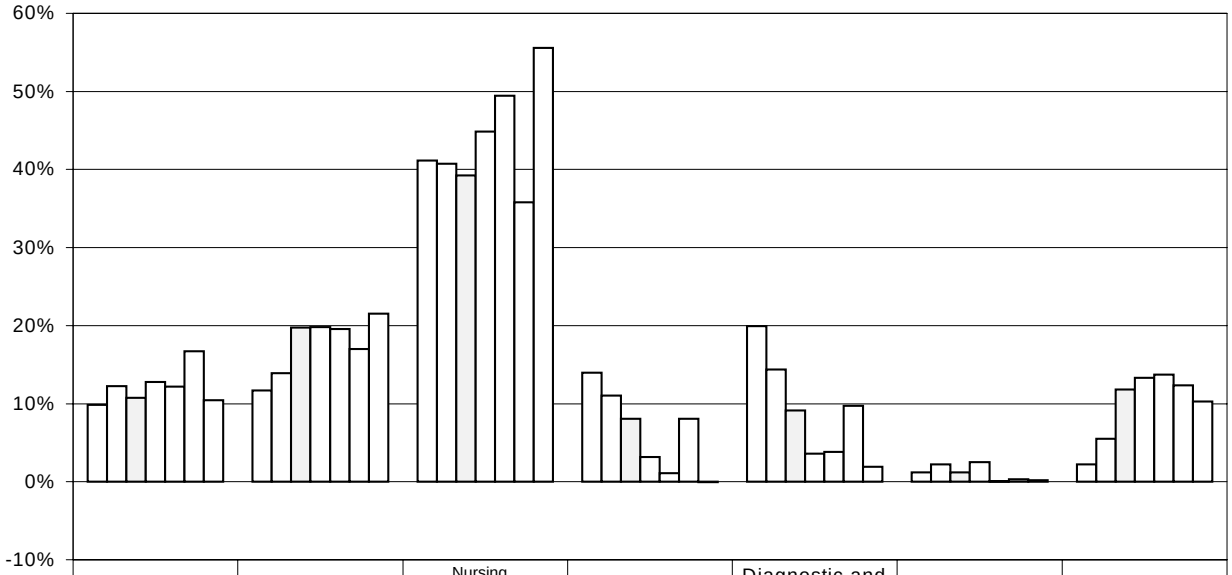
	Administrative Services	Support Services	Nursing Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Brandon	12.5%	14.0%	41.6%	11.1%	13.7%	2.7%	4.4%
Burntwood	11.0%	29.9%	29.0%	5.6%	11.9%	0.9%	11.8%
Central	12.2%	18.5%	48.1%	4.4%	4.3%	1.6%	10.8%
Churchill	20.5%	23.2%	27.4%	9.8%	8.6%	5.9%	4.5%
Interlake	10.5%	15.7%	38.1%	8.9%	16.4%	0.6%	9.8%
Marquette	9.9%	17.7%	44.2%	0.6%	13.7%	0.3%	13.4%
Nor-Man	10.3%	16.0%	35.4%	8.2%	13.6%	3.0%	13.4%
North Eastman	10.1%	22.8%	50.6%	3.5%	2.7%	0.7%	9.5%
Parkland	10.5%	17.7%	42.1%	5.7%	14.8%	0.0%	9.3%
South Eastman	11.1%	13.5%	40.0%	4.5%	16.3%	-2.6%	17.2%
South Westman	9.2%	14.9%	44.3%	-0.5%	14.1%	1.7%	16.2%
Winnipeg	10.6%	13.0%	40.9%	12.3%	17.6%	1.4%	4.2%

Rows may not total 100% due to rounding

Figure 5: Distribution of Expenses by Functional Centre and Type of Hospital

Manitoba Acute Care Hospitals

1997/98



	Administrative Services	Support Services	Nursing Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Teaching	9.9%	11.7%	41.2%	14.0%	19.9%	1.2%	2.2%
Urban Community	12.2%	13.9%	40.7%	11.0%	14.4%	2.2%	5.5%
Major Rural	10.7%	19.8%	39.2%	8.1%	9.2%	1.2%	11.8%
Intermediate Rural	12.8%	19.8%	44.8%	3.2%	3.6%	2.5%	13.3%
Small Rural	12.2%	19.6%	49.4%	1.1%	3.8%	0.1%	13.8%
Northern Isolated	16.7%	17.0%	35.8%	8.1%	9.7%	0.3%	12.4%
Small Multi-Use Facilities	10.5%	21.6%	55.6%	0.0%	1.9%	0.2%	10.3%

Rows may not total 100% due to rounding

4. DISCUSSION AND RECOMMENDATIONS

4.1 General

The Management Information System used by hospitals has the capacity to inform policy-makers, managers, administrators and the public about the operation and management of these facilities. MIS has been used to make comparisons between hospitals, and this report represents the first time this data source has been used to profile all facilities, hospital types and health regions in the province. These comparisons can and should be used to provoke discussion to gain insights into areas for improvement and target efforts toward positive change.

The public is increasingly interested in understanding and evaluating the performance of organizations that provide health services. This report offers the people of Manitoba, policy-makers and administrators with an analysis of the financial profiles of all of the hospitals in the province in a format that allows for comparison. The challenge for the future is to improve the completeness and accuracy of the data, to ensure that comparative indicators are appropriate, valid, reliable and timely.

The findings of this project suggest that there is variability between hospital types and regional authorities in the costs they incur when providing service to a standardized inpatient. Case costs are particularly high among northern isolated hospitals and northern regional authorities, and this may be attributable to circumstances that are amenable to change (e.g., size of excess capacity) and to conditions that are not (e.g., transportation costs). The relatively smaller volume of inpatient services provided in these facilities, in comparison to others, suggests that efficiency gains would not have a significant impact on overall provincial inpatient expenditures. Case costs were also high among teaching hospitals, and any efficiency gains in average costs per weighted case in these facilities would result in a significant impact on provincial inpatient expenditures due to the high volume of care provided at these facilities.

There is variability between hospital types and regional health authorities in the proportion of expenditures reported in different functional centres, and an interactive process was used with financial officers to ensure that these differences reflected resource allocation decisions rather than differences in accounting practices. It is hoped that the information presented in this report regarding differences in the distribution of expenditures between hospital types and regional authorities will provide insights that can be used to assist in the identification of 'best practice'.

4.2 The Next Challenges

The next challenges are: (a) to use the information derived from this report – in combination with other assessments of hospital performance in the province (e.g., Stewart et al., 2000) – to take action, and (b) to improve the information systems upon which comparative indicators are based to ensure the appropriateness, utility, validity, reliability and timeliness of these measures.

Review of MIS data on an individual facility basis suggests that items were being reported inconsistently. By involving the finance officers in the facilities and the regional authorities, it is hoped that many of these inconsistencies were identified and corrected. However, the degree to which this interactive process influenced the final figures presented in this report is not known and should be evaluated.

One of the particularly complex issues that is not addressed in the current MIS system is the allocation of costs between entities (i.e., either physically separate facilities or different health care services within the same facility) for shared resources. For example, some hospitals share housekeeping, laundry, dietary and physical plant services with a personal care home. In many cases, services are provided to two facilities by one hospital and expenditures are reported by the hospital. In other cases, allocation formulae that may or may not reflect the actual utilization of services are used to make adjustments. Appendices D and E identify facilities that have reported sharing of

services to assist in understanding how these factors may affect the cost per weighted case.

Six types of ratios were included in this report, and many other indicators could have been used. It is worth noting that no facility looked "bad" on all indicators, and no facility could be considered "perfect." Although this report has made financial comparisons between hospitals, overall assessment of the performance of Manitoba hospitals or regional authorities must be considered in the context of other information.

In the course of completing this project, several administrators raised concern about the validity of resource intensity weights. One region reported that they do not use these data for any resource allocation functions because of their observation that in rural facilities the discharge abstract data may be inaccurate. Representatives from two larger facilities indicated that they expected that there were inconsistencies in coding of discharge abstracts. Evaluations regarding the accuracy of administrative data from hospital discharge abstracts in Manitoba and elsewhere in Canada, however, indicate that these data are of reasonably good quality (Williams & Young, 1996).

As is described in Appendix A, the total weighted cases in smaller facilities can be affected by the particular cases that are discharged in a year. We have attempted to make adjustments to ensure that the total weighted cases for every hospital are accurate, but some circumstances could result in under- or over-stated total weighted cases (and subsequently cost per weighted case) for an individual facility. There were two facilities for which we were unable to make the adjustments outlined in Appendix A because of the very small number of cases that were discharged during the year. Previous work by the Manitoba Centre for Health Policy and Evaluation suggests that we are clearly unable to use administrative data for one year to determine the total weighted cases for facilities with fewer than eight beds. Facilities with more than eight beds may show this same effect, depending upon the mix of long-term care and acute care patients that are occupying acute care beds.

Finally, there is certain cost information that has not been included in determining the cost of inpatient care. Most notably is the absence of expenditures on physician and capital costs – which resulted in $70 million in physician remuneration and $77 million in capital costs being removed from all calculations. As was the case in the earlier report that used 1995/96 MIS data (Finlayson 1999), several cost items attributable to the provision of inpatient services are not reported in MIS. The cost of these services is estimated to be in excess of $25 million. These include:

- blood and blood products provided to hospitals by the Canadian Red Cross Society/Canadian Blood Services
- diagnostic services provided by The Laboratory and Imaging Services Branch, and Westman Regional Laboratory,
- therapy services provided by Community Therapy Services and South Central Therapy Services,
- administrative and corporate services provided to hospitals by the Winnipeg Hospital Authority and the Regional Health Authorities.

Costs that are not uniformly reported in MIS (e.g., physician and capital), and expenditures that are simply not reported within MIS were not available to distribute among the hospitals. The extent to which one hospital or region utilizes these services relative to another hospital or region is unknown and would affect the values attributed to indicators. This is particularly relevant for diagnostic and therapy services that appear in some facilities but not in others.

4.3 Recommendations

There continues to be substantial room for improvement in reporting of MIS data. It would appear that the value of the system to users is decreased due to inter-facility reporting inconsistencies, and the significance of these inconsistencies between facilities, facility-types and regional authorities should be a topic of further study. Understanding the impact of these inconsistencies is important. It is recommended that:

1. A comparison be made between the adjusted data that were used in this report, and the unadjusted data that was submitted by the hospitals to Manitoba Health. This type of evaluation would provide insights into the value of involving a hospital administrator or financial officer from each facility in the interactive process that was used to validate the data used to calculate the comparative indicators in this report.

Assuming the adjustments made by hospital administrators and financial officers during the interactive process used to calculate the comparative indicators in this report make a material difference in the results, it is further recommended that, to increase the utility of MIS:

2. The standards in the Manitoba Facility Reporting System User Guide be centrally enforced through monthly data validation checks to ensure consistency in reporting between facilities and jurisdictions.
3. A person in each region be designated as a MIS coordinator to ensure compliance with provincial standards and consistency in reporting over time.
4. All goods or services that are provided to inpatients costs be reported in MIS, including those received from entities that are funded separately (e.g., physician services, independently operated diagnostic and therapeutic services, blood services).
5. MIS data be collected and disseminated in a timely manner.
6. Indicators that are relevant to managing hospitals be developed to allow consistent comparisons and to assist in identifying, in a timely manner, problems in reporting or operation.

In the course of completing this report, several health facility administrators raised concerns about the reliability of the discharge abstract data, and in particular the inter-facility consistency in abstracting of health records. It is therefore recommended that:

7. Consistent abstracting standards be promoted for all hospitals to ensure validity and reliability of data from which case mix and resource intensity weights are derived.

Finally, a number of areas of further study were identified, including:

8. Determining the cause of the high average cost per weighted case in the teaching hospitals. The findings of this study concur with others that have been conducted in Manitoba and elsewhere in Canada – teaching hospitals experience higher than expected costs. In fact, calculations of higher relative costs persist despite the methods use to standardize costs and case-mix differences between facility types. As teaching hospitals serve an extremely large portion of inpatient cases in the province, any efficiency improvements would have a significant impact on provincial expenditures for inpatient care. Comparisons of the patient management process used to treat standardized cases would likely assist in understanding this higher cost. The Winnipeg Regional Health Authority is best placed to review these issues.
9. Determining if there are issues concerning the assignment of Resource Intensity Weights to cases that result in mis-stating the average cost per weighted case. These issues could arise from coding of discharge abstracts or from the methodology that is used to determine the RIW that is assigned to each case.

APPENDIX A

Making Adjustments to Total Weighted Cases

The previous case-mix costing report (Finlayson, Nowicki et al 1999) that used CMG grouped cases and MIS financial data described reasons for making adjustments to the total weighted cases (TWC) for hospitals. In summary, three possible occurrences would necessitate an adjustment to the TWCs:

1. the length of stay for an individual case exceeds 365 days (if a person is in hospital for more than 365 days they clearly have received care in more than one fiscal year)
2. the sum of the lengths of stay for all cases in a facility is less than the number of inpatient or census days reported by the hospital (i.e., there were people remaining in the hospital at the end of the year who had been in hospital for a good part of the current year and would not be discharged until a subsequent year)
3. the sum of the lengths of stay for all cases in a facility exceeds the number of inpatient or census days reported by the hospital (i.e., there were people discharged from the hospital who had received more care in the previous fiscal year than in the current one)

This issue is of particular importance to facilities with a relatively small number of beds. Factors such as the loss of a physician, a long holiday taken by a physician, or discharge of just one or two patients with a very long length of stay can have a substantial effect on the total weighted cases for these facilities.

Methods used to adjust separation days and weights are described in the following sections. Note that the RIW for all cases with a length of stay greater than 365 days was adjusted prior to calculating the TWC for the facility.

Adjusting the RIW when the length of stay of a case exceeds 365 days

1. When LOS exceeds 365 days, truncate at 365 days;
2. Adj RIW = RIW - ((LOS-365) x daily blended outlier weight for the particular CMG)

When the number of inpatient days reported in MIS for a facility is less than the total separation days (truncated at 365 days)

1. Select outlier cases (based on the trim point for the CMG);
2. Place selected cases in random order;
3. Remove one day from each case until the total days equal the total separation days for the facility;
4. Loop as necessary but do not remove days from any cases once the trim point for the CMG has been reached;
5. Subtract the CMG-specific daily blended outlier weight for each hospital day that has been removed to recalculate the RIW.

When the number of inpatient days reported in MIS for a facility is greater than the total separation days

1. For each facility, calculate the average daily weight for cases classified as outliers:
   (total weights/total days);
2. Add days and associated daily weights as follows:
   (total days - total separation days) x average daily weight for outliers

Cases that were admitted prior to April 1, 1997 and that had not been discharged by March 31, 1998 were not included in the total weighted cases as the case weight is not assigned until the case is discharged.

APPENDIX B

Using the Manitoba Hospital Management Information System

The consolidated MIS general ledger for 1997/98 consisted of 68,961 financial and statistical accounts. Summarizing these data into the few tables and charts that appear in this report took substantial effort—especially when the objective of these summaries is to permit comparisons between hospitals, types of hospitals and Regional Health Authorities. Not only was it necessary to investigate overall accuracy of the values, but it was very important to do everything possible to minimize the risk of presenting misleading comparisons at the individual facility level. A value that may not be material on a province-wide basis could be very important in describing the situation at an individual hospital. The process that was followed in developing these indicators and ratios is presented in Figure 6.

Before using the financial data it was necessary to put it through a "filter" that would remove all values that would not be considered in this study. The filtering process is represented in Figure 7.

Preliminary values of ratios, including the numerators and denominators that were used to calculate the ratios, were distributed to hospitals and/or Regional Health Authorities. Also included in the package of material were tables that compared the proportional distribution of costs by functional centre for similar types of hospitals. Responses to these materials were received, and in several cases requests for more detail information were fulfilled. Corrections to the data were made, and final draft ratios and charts were prepared. These were again distributed to RHAs for their review and feedback.

Feedback on the results that are presented here was not received for all hospitals-- we have assumed that if no comments were made that the data accurately reflects operations at those facilities.

Figure 6: Calculating Ratios and Average Cost Per Weighted Case

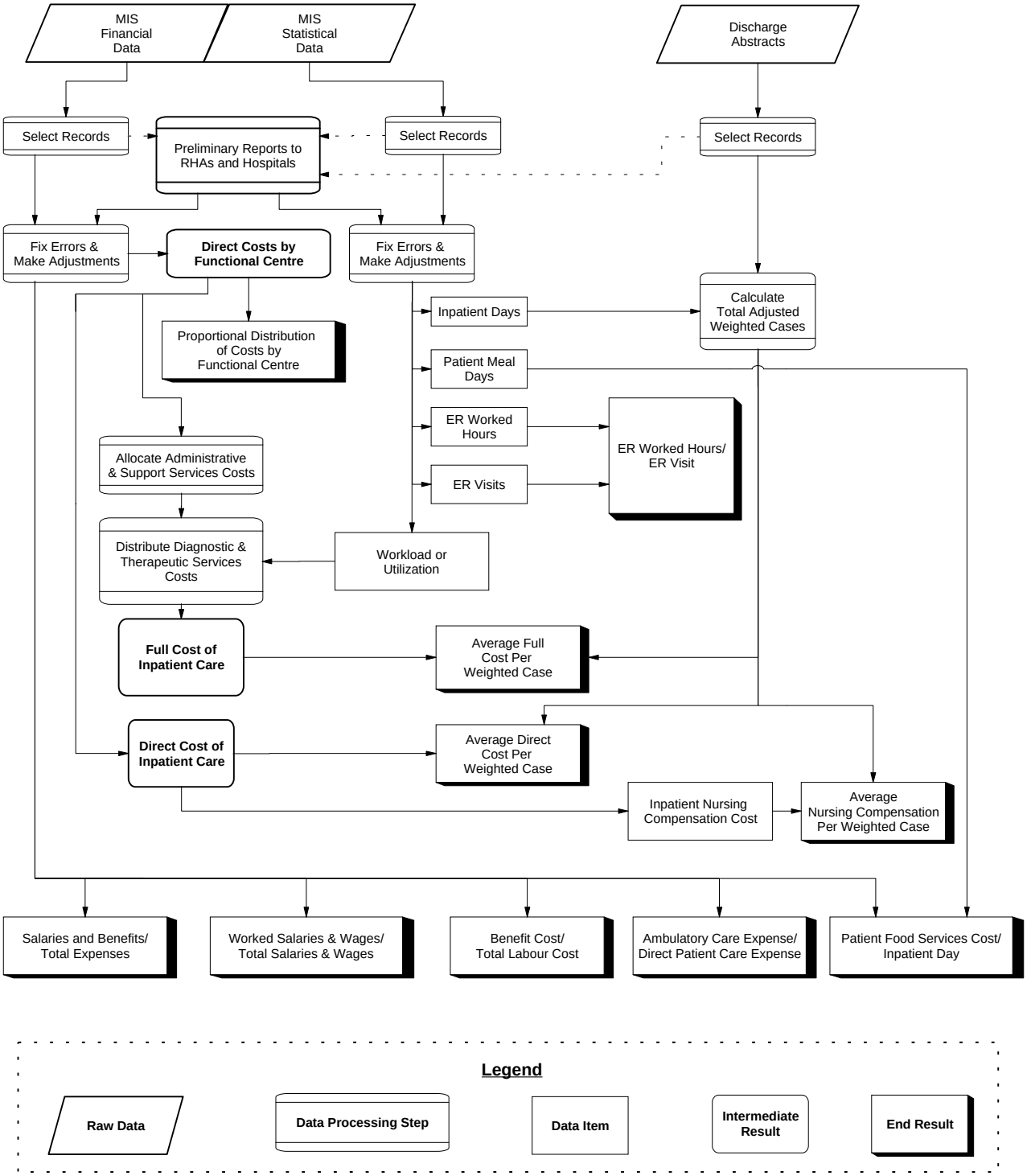
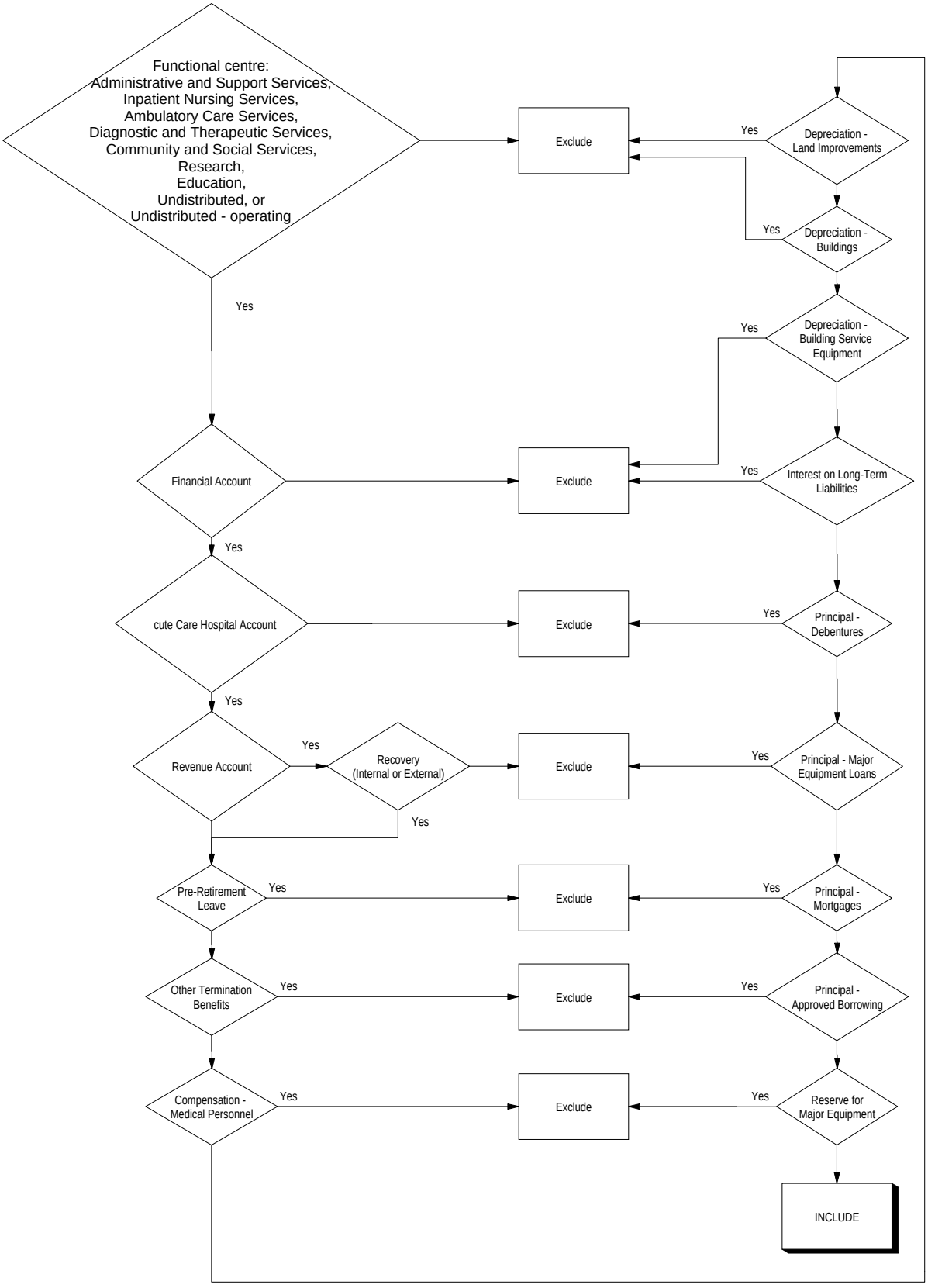


Figure 7: Inclusion/Exclusion Criteria for Financial Accounts



APPENDIX C

MIS GUIDELINES 1997
Canadian Institute for Health Information
Primary Accounts
Functional and Accounting Centres for Revenue, Expenses and Statistics

Administrative Services[15]
- Administration
- Finance
- Human Resources
- Systems Support
- Communications
- Materiel Management
- Registration
- Health Records

Support Services[15]
- Volunteer Services
- Housekeeping
- Laundry and Linen
- Plant Administration
- Plant Operation
- Plant Security
- Plant Maintenance
- Bio-Medical Engineering/Medical Physics
- Case Management Coordination
- Patient/Client Transport[16]
- Patient Food Services

Nursing Inpatient Services
- Nursing Inpatient Administration
- Nursing Inpatient Medical Resources
- Medical Nursing Unit
- Surgical Nursing Unit
- Combined Medical/Surgical Nursing Unit
- Intensive Care Nursing Unit
- Obstetrics Nursing Unit
- Operating Room
- Post-Anesthetic Recovery Room

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[15] MIS groups "Administrative and Support Services" as one functional centre. For this report, we have separated the functions into "Administrative Services" and "Support Services."

[16] At Centre Medico-Social Desalaberry, patient transportation costs are reported in Nursing Inpatient Services, not Support Services.

Pediatric Nursing Unit
Psychiatry/Addiction Nursing Units
Rehabilitation Nursing Unit
Palliative Nursing Unit
Long-Term Care Nursing Unit

Ambulatory Care Services
Ambulatory Care Administration
Ambulatory Care Medical Resources
Emergency
Poison Information Centre
Specialty Day/Night Care
Specialty Clinics
Private Clinics

Diagnostic and Therapeutic Services
Clinical Laboratory
Diagnostic Imaging
Radiation Oncology
Electrodiagnosis
Other Diagnostic Laboratories
Respiratory Therapy
Pharmacy[17]
Clinical Nutrition
Rehabilitation Services--Administration
Physiotherapy
Occupational Therapy
Audiology and Speech/Language Pathology
Rehabilitation Engineering
Social Work
Psychology
Pastoral Care
Recreation
Child Life

Community and Social Services*
Community and Social Services Administration
Community Medical Resources
Primary Care Clinics/Programs
Crisis Intervention
Primary Day/Night Care

[17] At Centre Medico-Social Desalaberry, pharmacy costs are reported in Nursing Inpatient Services, not Diagnostic and Therapeutic Services.

Home Care
Home Support
Home Care/Support Combined
Residential Services
Health Promotion and Education
Disease and Injury Prevention and Control
Health Promotion and Disease and Injury Prevention Combined
Environmental Health
Licensing

Research*
Research - Administration
Animal House Research
Nursing Research
Diagnostic and Therapeutic Services Research
Medical Research

Education*
Library
Audiovisual
Medical Illustration
In-Service Education
Administrative and Support Services Formal Education
Nursing Formal Education
Diagnostic and Therapeutic Services Formal Education
Medical Formal Education

Undistributed*
Non-Patient/Resident Food Services
Marketed Services (Ancillary Operations)

Undistributed - Operating
Food Services Clearing Account
Ministry/Department of Health Operating Grant
Inpatient Revenues
Outpatient Revenues
Ambulance Revenues
Provision for Doubtful Inpatient Accounts
Provision for Doubtful Outpatient Accounts
Provision for Doubtful Ambulance Accounts
Provision for Other Doubtful Accounts

* These functional centres are grouped under the heading "Other" throughout this report.

APPENDIX D

Hospital Type		Provider or recipient of goods or services*	RHA**
Teaching Hospitals	Health Sciences Centre	Neither	Winnipeg
	St. Boniface General Hospital	Provider	Winnipeg
Urban Community Hospitals	Brandon General Hospital		Brandon
	Concordia General Hospital	Neither	Winnipeg
	Grace General Hospital	Neither	Winnipeg
	Seven Oaks General Hospital	Neither	Winnipeg
	Victoria General Hospital	Recipient	Winnipeg
Major Rural Hospitals	Bethel Hospital, Winkler	Both	Central
	Bethesda Hospital, Steinbach		South Eastman
	Dauphin Regional Health Centre	Both	Parkland
	Flin Flon General Hospital Inc.	Both	Nor-Man
	Morden District General Hospital	Both	Central
	The Pas Health Complex Inc.	Both	Nor-Man
	Portage District General Hospital	Provider	Central
	Selkirk and District General Hospital		Interlake
	Swan River Valley Hospital		Parkland
	Thompson General Hospital	Neither	Burntwood
Intermediate Rural Hospitals	Altona Community Memorial Health Centre	Both	Central
	Beausejour District Hospital	Provider	North Eastman
	Carman Memorial Hospital	Both	Central
	Churchill Health Centre		Churchill
	Gimli - Johnson Memorial Hospital		Interlake
	Minnedosa District Hospital		Marquette
	Neepawa Hospital District No. 9		Marquette
	Souris District Hospital		South Westman
	Ste. Rose General Hospital	Provider	Parkland
	Virden District Hospital		South Westman
Small Rural Hospitals	Arborg and Districts Health Centre		Interlake

* Examples of this would include: this hospital provides dietary services to a personal care home, or this hospital receives therapy services from a separately funded organization. Hospitals with no notation did not provide this information. See Appendix E for specific descriptions of goods or services received or provided.
** Regional Health Authority

	Ashern - Lakeshore District Health Centre		Interlake
	Baldur Health District		South Westman
	Birtle Health Services District		Marquette
	Boissevain Health Centre		South Westman
	Carberry Plains Health Facility		South Westman
	Crystal City - Rock Lake Health Distri	Both	Central
	Deloraine Health Centre		South Westman
	Emerson Hospital	Provider	Central
	Erickson District Health Centre -		Marquette
	Eriksdale - E. M. Crowe Memorial Hospital	Both	Interlake
	Gladstone - Seven Regions Health District	Both	Central
	Glenboro District Hospital		South Westman
	Grandview District Hospital	Neither	Parkland
	Hamiota District Health Centre		Marquette
	Killarney - Tri-Lake Health		South Westman
	McCreary Alonsa Health Centre	Both	Parkland
	Melita Health Centre		South Westman
	Morris District Hospital	Both	Central
	Notre Dame Medical Nursing Unit	Recipient	Central
	Pinawa Hospital	Provider	North Eastman
	Pine Falls General Hospital	Neither	North Eastman
	Rivers - Riverdale Health Services District		Marquette
	Roblin District Health Centre	Recipient	Parkland
	Russell District Hospital		Marquette
	St. Claude Hospital	Both	Central
	St. Pierre-Jolys - Centre-Medico-Socia Desalaberry		South Eastman
	Ste. Anne Hospital		South Eastman
	Shoal Lake Strathclair Health Centre		Marquette
	Stonewall & District Health Centre		Interlake
	Swan Lake - Lorne Memorial Hospital	Both	Central
	Teulon - Hunter Memorial Hospital		Interlake
	Treherne - Tiger Hills Health District		South Westman
	Vita & District Health Centre		South Eastman
	Wawanesa & District Memorial Health Centre		South Westman
	Winnipegosis General Hospital	Neither	Parkland
Small Multi-Use Facilities	Benito Health Centre		Parkland
	MacGregor and District Health Centre	Neither	Central
	Manitou - Pembina Hospital	Both	Central
	Reston District Health Centre		South Westman
	Rossburn District Health Centre		Marquette
	Whitemouth District Health Centre	Provider	North Eastman

Northern Isolated Facilities	Gillam Hospital Inc	Neither	Burntwood
	Leaf Rapids Health Centre	Neither	Burntwood
	Lynn Lake Hospital	Recipient	Burntwood
	Snow Lake Medical Nursing Unit	Neither	Nor-Man

APPENDIX E

Hospital Descriptions

While reviewing the differences in ratios and proportions, it became apparent that there are factors that should be considered when comparing hospitals. In particular, small hospitals, in some cases, share resources—with one or more facilities reporting the entire expense of the resources. As a result, the recipients have the benefit of the goods or services for "free" in that they are not reported as an expense of that hospital. Resources are not just shared with other hospitals, in fact the most frequent sharing occurs between hospitals and personal care homes. Services such as laundy, dietary and housekeeping are commonly shared between a hospital and personal care home. In some facilities, an algorithm is used to determine the proportion that is attributable to people receiving acute care and to those receiving long term care.

To assist in summarizing some of the complexities of making comparisons between different hospital configurations, a brief survey was distributed to all Regional Health Authorities. The questions that were included in the survey were:

For March 31, 1998

1. How many acute care beds were staffed and in operation?
2. Were there beds in the hospital that were classified as "non-acute?"
    2a. If yes, please indicate the classification and numbers.
    2b. If yes, were these beds included in the number indicated in #1?
3. How many bassinets were staffed and in operation?
4. Was there a personal care home physically attached to the acute care hospital?
    4a. If yes, how many personal care beds were staffed and in operation?

During the 1997/98 fiscal year:

Did this hospital **provide** goods or services to a personal care home (a PCH that is either physically attached or not physically attached) that were reported as expenses of the hospital (e.g., resident food services, housekeeping, administration)?

Did this hospital **provide** goods or services to one or more other hospitals or health care centres (other than PCHs) that were reported as expenses of the hospital (e.g., a regional service that is reported as an expense for this hospital for services provided to other hospitals)?

Did this hospital **receive** goods or services (other than blood and blood products, and physician services) from any source that is not reported as an expense of the hospital (e.g., another hospital, Community Therapy Services, RHA Payroll Services, housekeeping services reported as an expense of a juxtaposed personal care home)?

The results of this survey are reported in the following pages. This information should be used to put into context the comparisons that are made in Appendix F.

It should be noted that not all RHAs or hospitals responded to this survey.

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Altona	22	N			2	Y	25	Laundry, Housekeeping, Food Services, Maintenance, Pharmacy, Lab, Administration		Community Therapy Services, Payroll Services, Some Lab Services
Beausejour	30	N	Acute care beds are occupied by clients awaiting PCH placement (approx 15%-20%)	Y		N		Shared administration, e.g., financial manager, payroll clerk, etc.	Shared administration, e.g., financial manager, payroll clerk, etc.	
Carman	30	N			2	N		Administration and purchasing		Physiotherapy, Payroll, Accounts Payable, Respiratory Therapy

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Dauphin	89	Y	Rehab beds: 10	Y	5	Y	90	Food services, maintenance, housekeeping, personnel and payroll services, administrative support, business office, pharmacy	Materiel management services, some medical & surgical supplies were provided to other facilities, some pharmacy services	Lab and Imaging, community therapy
Emerson	8	N			0	Y	20	Senior administration shared between Morris Hospital/PCH and Emerson Hospital/PCH, Dietary	Senior administration shared between Morris Hospital/PCH and Emerson Hospital/PCH	Senior administration shared between Morris Hospital/PCH and Emerson Hospital/PCH
Flin Flon	75	N			6	Y	30	Maintenance, Housekeeping, Dietary, Administrative		Community Therapy Services

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Gillam	7	Y	Long term beds: 3	N	0	N				
Gladstone	15				0	N		Maintenance services, management services, inservices/infection control, social work, physician services, payroll and purchasing shared with PCH	Administrative support for Facility Management, Finance, Infection Control, Payroll and Purchasing; Therapy Services	Laundry services provided by PCH
Grandview	18	N			0	N				
Leaf Rapids	6	Y	Paneled beds: 2	N	2	N				
Lundar	13	Y	Palliative care: 1	Y	0	Y	20	Resident food services and housekeeping were split 50/50	Materials management	Community Therapy Services

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Lynn Lake	19	Y	Long term care: 3	Y	3	N				Accounting & Payroll Services from RHA
MacGregor	6	N			0	Y	20	Maintenance services, management services, inservices/infection control, social work, physician services, payroll and purchasing shared with PCH	Administrative support for Facility Management, Finance, Infection Control, Payroll and Purchasing; Therapy Services	
McCreary Alonsa	13	N			0	Y	20	Dietary, housekeeping, maintenance are departments where a split by volume of service (I.e., inpatient days/resident days is done. System does monthly, usually 55/45%.)		Payroll and accounting services provided by Dauphin Regional Health Centre

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Morden	55	Y	22 Awaiting placement, 8 extended treatment unit	Y	6	N				
Morris	29	Y	1 Palliative, 3 chronic, 5 awaiting placement	Y	0	N		Senior administration shared between Morris Hospital/PCH, Emerson Hospital/PCH and Altona	Senior administration shared between Morris Hospital/PCH and Emerson Hospital/PCH	Senior administration shared between Morris Hospital/PCH and Emerson Hospital/PCH
Notre Dame	10	N			0	N		The Long Term Care Facility in the community provides meals to the hospital as well as Administration Services. We share Director of Care as well as some housekeeping services.	We have a "shared" in-house pharmacy service, servicing Notre Dame, St. Claude, Manitou and Swan Lake.	We have a "shared" in-house pharmacy service, servicing Notre Dame, St. Claude, Manitou and Swan Lake.

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Pembina Manitou	8	N			0	Y	18	Dietary and support services consultation to a number of PCHs	Support Services (Notre Dame), Administrator (1/2 time to home care Carman)	Versa (dietary & housekeeping), Dietitian (1x12), Psychiatric Nurse (from Notre Dame), Physiotherapy (2/12), Diabetes Education (1x12)
Pinawa	17	N	Acute care beds are occupied by clients awaiting PCH placement (approx. 20%)	Y	0	N		Administration services shared with Lac du Bonnet PCH and Health Centre	Administration services shared with Lac du Bonnet PCH and Health Centre	

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Pine Falls	27	N	Acute care beds are occupied by clients awaiting PCH placement (approx 15%-20%)	Y	2	Y	20			
Portage	122	Y	ETU (Rehab): 27	?	10	N		Stores, administration, staff development, dietary, housekeeping, infection control, pharmacy, some shared services to 4 non-attached PCHs. Amount of service varies from facility to facility.	Stores, administration, staff development, dietary, housekeeping, infection control, pharmacy, some shared services to Seven Regions Health Centre and MacGregor Health Centre. Amount of service varies from facility to facility.	

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Roblin	25	N			0	Y	60			Therapy services (OT, physio, speech), Diagnostic and Imaging Services
Rock Lake	16	N			0	N		Administration, facility director, finance officer, materials management services provided by hospital		Diagnostic services, community therapy services
Seven Oaks	274	Y	Long Term Care: 79		0	N				
Snow Lake	2	Y	Personal care beds (paneled long term): 2	N		N				
St. Claude	10	N			0	Y	18	Staff is shared. Shared housekeeping, laundry, dietary, administrative services.		Administrative services, director of dietetics

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Ste. Rose	30	N			1	N		Pharmacy services provided to external sources are recovered	Pharmacy services provided to external sources are recovered	
Swan Lake	20	N			7	N				
The Pas	54	N			10	Y	60	Dietary, housekeeping, maintenance, administration		Community Therapy Services
Thompson	72	N			15	N				
Whitemouth	6	Y	3 swing beds	Y	0	Y	Y	YES	Shared administrative costs	Shared administrative costs
Winkler-Bethel	43	N			5	N				
Winnipeg-Concordia	136	N				Y	60			
Winnipeg-Health Sciences Centre	800	N			85	N				
Winnipeg-Salvation Army Grace	281	Y	Long term care unit: 36	Y	40	N				

	Beds Staffed and in Operation, March 31, 1998	Beds Classified as Non-Acute? (N=No, Y=Yes)	Type of non-acute beds	Included in Acute Care Beds Staffed & in Operation?	Bassinets staffed and in operation	Attached PCH? (N=No, Y=Yes)	Number of PCH beds	Goods or services provided to a PCH	Goods or services provided to another hospital or health care centre	Goods or services received from any other source
Winnipeg-St. Boniface	414 (includes 31 psych. Beds)	Y	Personal Care: 38, Nursery bassinets: 72, Geriatrics: 80	N	72	N			Utilities for the Research Centre	
Winnipeg-Victoria	211	N			20	N				Audiology & Central Speech and Hearing funded through Manitoba Health

APPENDIX F

Comparative Charts and Tables

Introduction

The comparative charts and tables presented here are divided into three sections:

Appendix F-1 (Figures 8 through 14 and Table 5 & 6) provides cost per weighted case information. The components that make up the Average Full Cost Per Weighted Case are shown using one chart for every type of hospital. This allows the reader to make comparisons between different hospitals of the same type. In Appendix F-2, this same information is all hospitals grouped by Regional Health Authorities (Figures 15 through 26). This allows the reader to make comparisons between different hospitals within a RHA. Earlier in the report, Figures 4 and 5 presented these data in summary form.

Appendix F-3 (Figures 27 through 33 and Table 7) shows the distribution of costs within hospitals. A summary of all types of hospitals is first, followed by comparative charts for every type of hospital. In Appendix F-4 (Figures 34 through 45), this same information is then provided for all Regional Health Authorities, followed by comparative charts for hospitals in every RHA.

Appendix F-5 (Tables 8 through 11) summarizes the cost per weighted case measures and the other ratios that were developed for this report.

As a result of the review of these charts and tables by RHAs and hospital administrators that is referred to below, a number of changes were made to the values that are reported. Note that any negative values should be considered errors in reporting (or resulting from accounting adjustments) as all recoveries were netted against expenses, and all other revenues were excluded.

Refer to the Methods section of this report for a description of how these values were calculated.

General Comments

Average cost per weighted case is a standardized measure of resource use. Patients that are expected to require a similar value of resources for their hospital care receive a similar "case weight." Patients with more complex treatment needs, or with a diagnosis that on average would require a longer hospital stay, are assigned a higher weight than less complex cases. This results in a standardized unit of "output," i.e., a weighted case. Only the costs that the hospital incurs should vary. If one hospital has a higher cost per weighted case than another, the initial interpretation should be that it costs more to provide treatment at this hospital than the other. In developing this report, we have attempted to standardize the costs as much as possible. However, there are circumstances (referred to earlier) that can affect these costs. It is the authors hope that through publishing these measures it will be possible to focus on improving the quality of the cost data to ensure that valid comparisons are made.

The charts and tables in these Appendices were provided to all Regional Health Authorities for their review, and, at the RHA's discretion, for distribution and comments from hospitals within their region. Specific comments that relate to individual charts are included where appropriate, but there were a number of general comments that are reported here. Some will assist readers in the interpretation of the data specific to an individual hospital; others are relevant to the report as a whole.

Churchill	All data is based on Manitoba statistics. Approximately 75%-80% of inpatient care is provided to people from outside the RHA, namely Nanavut (formerly NWT).
Ste. Rose	Ste. Rose General Hospital should be treated as an outlier for all charts and tables associated with financial figures. Ste. Rose General Hospital was in transitional phase whereby long stay (panelled) patients were transferred from the hospital setting to the newly expanded PCH. Over a three-year period approximately $1,500,000 was removed from the hospital operating budget. In the year succeeding the one being used for comparisons (1998/99 fiscal year) the Ste. Rose budget was reduced by $750,000 (25%). Therefore, it would be more appropriate to compare later years.
Brandon	… this is just one of the many needed pieces of information that will help us in our process of attempting to evaluate our performance. The only caution I could provide is to remember that this process is in its infancy and there is probably a significant amount of work that needs to be done to ensure that the various pieces of information that were used in this report, may not be to the standard that is required to make the data as comparable as it should be. However, I believe that over the next months and years, we should attempt to minimize and reduce those discrepancies to make this information more reliable and accordingly valuable. 1. Recently the Brandon Regional Health Authority performed its own calculation of the cost per weighted case for the 1998/99 fiscal year. What was very evident was that we had not recorded all of our information in the proper account codes and accordingly, some of the information had to be reclassified to put costs into the proper categories. For example, we had noted that there were a number of recoveries that were not assigned to a particular department and accordingly, those costs would have been overstated in that department. Some of the examples of this included recoveries from Westman Lab for Housekeeping, Maintenance, Financial Services Administration, Human Resources, Purchasing, etc. Others included that we had not properly allocated a portion of the Nutrition Services costs through the Cafeteria and accordingly, that amount was over stated. There are just a couple of the examples where we had noted that corrections were required.

	2. Another item that we noted of a significant nature was the split between inpatient and outpatient. It was a very unscientific process to determine what was an inpatient department versus outpatient and what departments should have a portion of their costs contributed to outpatient services. For example, in our case, all of our Day Surgeries are performed in the OR. Accordingly, a portion of the OR and Recovery Room must be allocated to outpatient services or Ambulatory Care. In the future, as well, it will be necessary to ensure that any of the departments in the Brandon Regional Health Centre that are offering services for the entire region, a portion must be reclassified to the non-acute care services. Even in the 1997/98 fiscal year, this was an issue as many of the administrative areas, such as Finance, Human Resources, IT and Purchasing/Stores were doing work for the entire region beginning November 1, 1997.
Victoria General Hospital	It is important to note the following: 1. This measurement pertains to inpatient activity only. Much of the Hospital's activity is outpatient based, and consequently, is excluded from the report. To measure a hospital's overall efficiency, it is necessary to consider both inpatient and outpatient activity. 2. As noted in your report, the Calculations and comparisons are based on the average cost per weighted Case, which you have indicated is not an exact measure of inpatient care activity, and therefore, is likely Somewhat subject to error. 3. The calculations and comparisons are based on information supplied by the hospitals. In your analysis you have tried to ensure all hospitals have submitted information on a consistent basis, but inconsistencies may occur in such areas as coding of cases, expense classifications and completion of statistical information. SPECIFIC INFORMATION: Our comments relating to specific areas of your report are as follows: Unadjusted and Adjusted Weighted Cases by Hospital. The Weighted cases is the basis for which you calculated the Average Cost Per Weighted Case. In our review of the weighted cases for the 1997/98 fiscal year, we realized that approximately 23% of the inpatient days were assigned to CMG #351, which is other factors causing hospitalization. This particular case mix group has a relatively low weighting, and therefore, reduces the number of

	weighted cases; thereby, increasing the average cost per weighted case. While the report correctly reflects the information provided, we believe the Victoria General Hospital may have been inconsistent in how we reported these cases compared to other hospitals. As a result, the number of weighted cases are understated in the 1997/98 fiscal year. In addition, Victoria General Hospital is the only community hospital with an obstetrical program. The average weighted case for obstetrics is relatively low which in turn impacts negatively on Average Cost per Weighted Case, especially because a certain percentage of administrative and support costs are included in the total costs for inpatients. Table 1 Information provided to hospitals for their review. This table summarizes the total expenses reported for each of the function centres, including "total ambulatory care expense" and "total direct patient care expense". Victoria General Hospital does a large amount of outpatient surgery, however, all OR costs for surgery, whether inpatient or outpatient, are reflected as an in-patient cost, as are the Recovery Room costs and patient supply costs. Consequently, we believe the allocation and total expenditures for inpatient costs is too high (likely for most hospitals, but particularly, for Victoria General Hospital). Please refer to the table below taken from the supplemental information you sent to us: Brandon General Hospital 64.2% Concordia Hospital 56.8% Health Sciences Centre 64.4% Salvation Army Grace General Hospital 64.9% Seven Oaks General Hospital 64.8% St. Boniface Hospital 53.9% Victoria General Hospital 68.8%
Central Regional Health Authority	There are several factors that have significant bearing on the outcomes of the analysis that are not mentioned in the Report. Failure to mention them in the contextual description will lead to assumptions that the data and subsequent conclusions are objective and accurate, when in reality they are not. The first is the issue of the validity of CIHI data, particularly in rural facilities that have never paid particular attention to the data

	collected. There are several examples in our Region where the smallest, minimally staffed facilities have higher average Resource Intensity Weighting than the regional centres. While not borne out in the data, anecdotally, no one would, could or should suggest that Emerson Hospital, for example, provides a higher complexity of care than Boundary Trails. Obviously the data, which is largely dependent on physician documentation, is highly suspect. It is for this reason that our Region does not utilize CIHI data for any resource allocation functions. The data is simply too suspect. Secondly, the issue of cost allocation is not mentioned. While MIS data indicates certain costs for acute care, there are many situations where the cost can not be allocated between acute and personal care homes (PCH) accurately. In fact, historically, Manitoba Health assigned a percentage split in order to assign costs between PCH and acute. While it is possible that the split is fairly representative, there is no way to quantify this. Finally, the time period under study is the first full year of the Regional Health Authorities. Certainly in our Region, many changes have occurred during and subsequent to 1997/98. Consolidation of administration has made a significant reduction in the overall administrative costs. While I can appreciate that you required a time frame to focus on, not making any mention of the overall context of the time period relative to the establishment of the Regional Health Authorities will lead to bias.

APPENDIX F-1

Components of Average Cost Per Weighted Case by Type of Hospital

Teaching Hospitals - The average cost per weighted case for Health Sciences Centre is about 18% higher than that of St. Boniface General Hospital. The largest difference is in the Diagnostic and Therapeutic Services functional centre, where Health Sciences Centre has nearly 58% more cost per weighted case. Statistical data were used to determine the portion of total diagnostic and therapeutic services costs that should be attributed to inpatient care for both hospitals. This would suggest that either the cost of these services is higher at Health Sciences Centre, or more diagnostic and therapeutic services are provided to patients at HSC.

It should be noted that both hospitals do not use MIS for their internal accounting, but "map" their accounts to MIS accounts.

Urban Community Hospitals – the range of average cost per weighted case for urban community hospitals is about 39%, with Concordia General Hospital having the lowest ACPWC and Victoria General Hospital having the highest (Figure 9). Misericordia Health Centre (formerly Misericordia General Hospital) was excluded from these analyses as its function has changed so that it is no longer providing acute inpatient care. Variability is noted in the costs of all functional centres. Brandon and Victoria General Hospitals have provided comments in the General Comments section earlier in Appendix F.

Major Rural Hospitals – the average cost per weighted case for Bethesda Hospital is the lowest in our study (Figure 10). Later in the report we note that the patient food services cost for this facility were not reported in the food services functional centre, which would explain why the cost reported in the Support Services functional centre is low. The Inpatient Services-Compensation costs for Bethesda are also low, when compared to

other hospitals of similar type. The cost per average case for Bethesda hospital should receive detailed review.

There is a high level of consistency in the average cost per weighted case for the "southern" major rural hospitals, and for the "northern" major rural hospitals. Thompson and The Pas have a higher cost per weighted case than other hospitals of similar type. The Pas has a much higher cost for diagnostic and therapeutic services, while Thompson has a higher cost for support services. Higher Inpatient Services-Compensation is also noted for The Pas and Thompson.

Comment from Burntwood RHA:
Thompson: Support Services includes costs associated with northern patient transportation program. Inpatient services, administration services and support services includes management costs associated with regional programs.

Intermediate Rural Hospitals – Churchill is an outlier in this grouping—with an average cost per weighted case of nearly two and a half times that of the hospital with the lowest ACPWC (Figure 11). Comparisons between Churchill Health Centre and other hospitals may be inappropriate, due to the unique characteristics of this facility. In particular, its remote location and the absence of a personal care home in the community resulting in acute care beds being used for long term care will result in non-comparable results. See the comments provided in the General Comments section at the start of Appendix F.

There is a fair degree of consistency among the other hospitals. Ste. Rose Hospital was undergoing change in 1997/98 as was noted in the earlier General Comments section. It is noteworthy that negative values were reported for Inpatient Services-Other for Altona, Minnedosa, Neepawa and Souris. The lack of diagnostic and therapeutic costs is likely due to people receiving these services from other agencies with the cost of these services not being reported in the hospital's MIS. The negative values likely reflect recoveries that were attributed to these areas with the expenses being reported in another area.

Finally, the Inpatient Services-Supplies at Minnedosa Hospital are high in comparison to others (although the negative value in the "other" category may be an error that should be used to offset this higher relative expense).

Small Rural Hospitals – this is the largest group of hospitals and presents the most variability both in average cost per weighted case and in the distribution of inpatient costs among the functional centres (Figure 12). The negative values normally result from costs being reported in one area and recoveries being reported in another. As is described in Appendix E, there are many situations in which resources are shared between hospitals, or between hospitals and other health care facilities, particularly personal care homes. As a result, the data reported here should be reviewed in the context of the descriptions in Appendix C. The case mix of care provided in small hospitals is also likely different from that of larger hospitals, suggesting that this should be considered when reviewing these results, given anecdotal concerns that have been expressed regarding the validity of RIW assignment.

Notwithstanding the information that is reported in Appendix E, there appear to be a number of reporting issues that should be resolved. For example, the range of costs for inpatient supplies is $1 to $179, and the cost of diagnostic and therapeutic services provided to inpatients ranges from $1 to $283. The hospital that reports the highest cost for compensation paid for inpatient care is 2.5 times as great as that of the lowest cost. High staff costs can be explained by excess capacity (i.e., a minimum level of staffing is required to keep the facility operational, no matter what the occupancy), or by having staff costs reported as inpatient costs when the services are being provided to others, either outpatients or to other non-acute care individuals.

The reporting issues for small hospitals are unique. The value of detailed accounting of the application of resources (i.e., to inpatients or to others), must be evaluated against the cost of this reporting. The Canadian Institute for Health Information (CIHI) is currently

considering the development of special MIS reporting standards for small facilities that take into account their special circumstances.

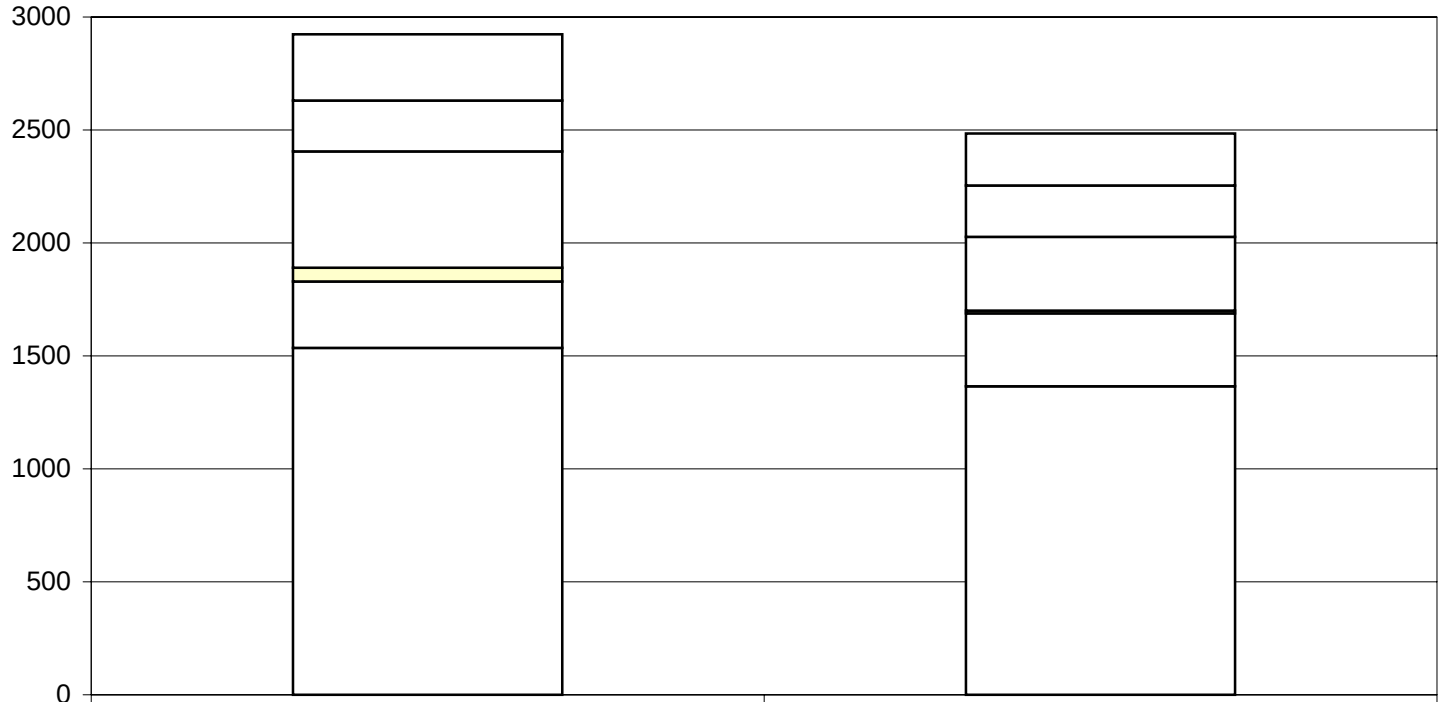
The authors of this report would encourage Regional Health Authorities to carefully review the data reported here to determine where efficiencies can be implemented.

Northern Isolated Hospitals – this group of facilities also has some unique features, notably their remote location and different mix of cases. Staff costs per weighted case are very high, likely reflecting minimal staffing levels that must be maintained for the facilities to function (Figure 13). Administrative and Support Services costs, particularly at Snow Lake, reflect the proportion of expenses that are reported for inpatient care as opposed to other hospital services—this does not reflect the actual use of Administrative and Support Services by inpatients. As was indicated in the "Small Rural Hospital" section, the values that are reported here should be considered in the context of the operation of these facilities.

Small Multi-Use Facilities – on average, these facilities have the third highest average cost per weighted case of all types of hospitals, being more costly than the urban community hospitals (Figure 14). However, as the title of this grouping of hospitals suggests, these facilities have a different function than acute care hospitals. As was indicated in the Small Rural and Northern Isolated Hospital sections, the higher cost per weighted case may be a reflection of the fixed costs required to maintain the function of the hospitals. The case mix of patients in these facilities also likely affect the average cost per weighted case.

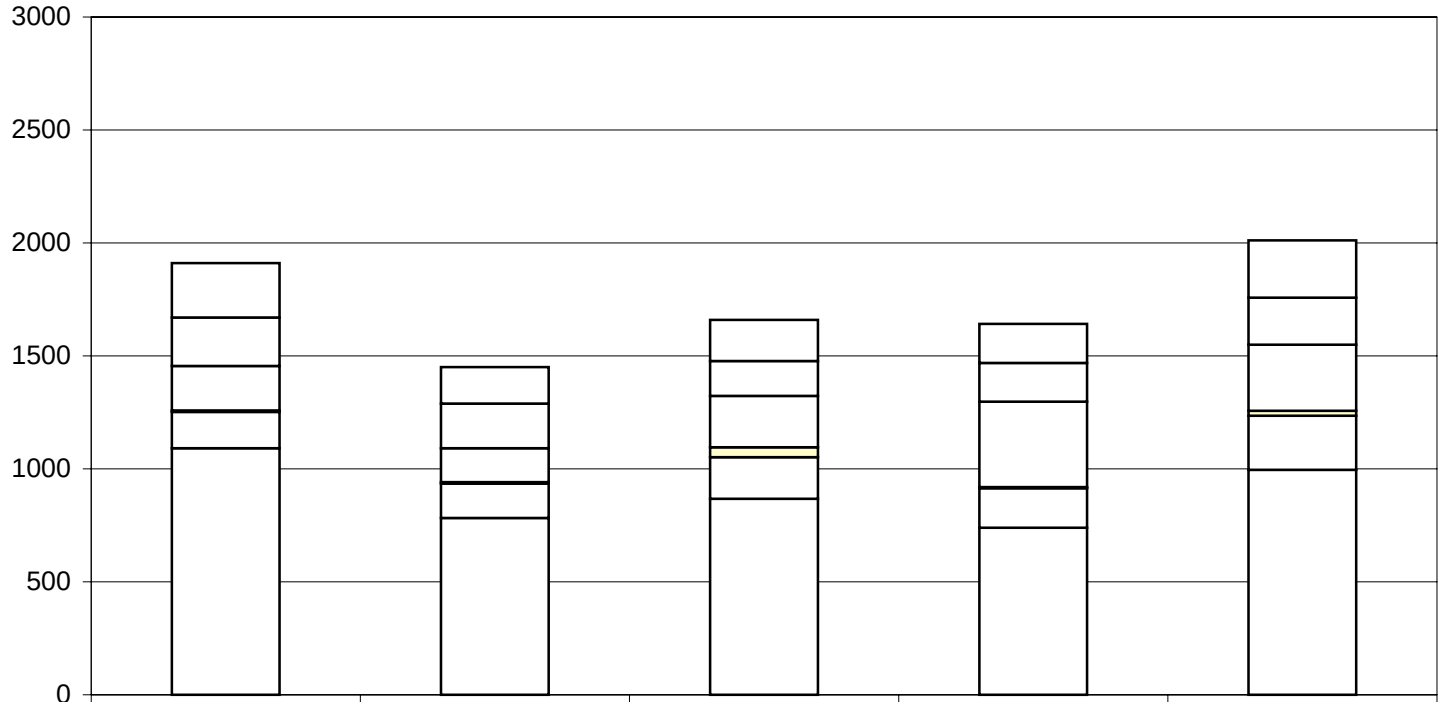
The high support services cost at MacGregor Hospital and the high Inpatient Services Compensation at Benito, Pembina Manitou and at Reston Hospitals should receive further review.

Figure 8: Components of Average Cost Per Weighted Case
Teaching Hospitals
1997/98



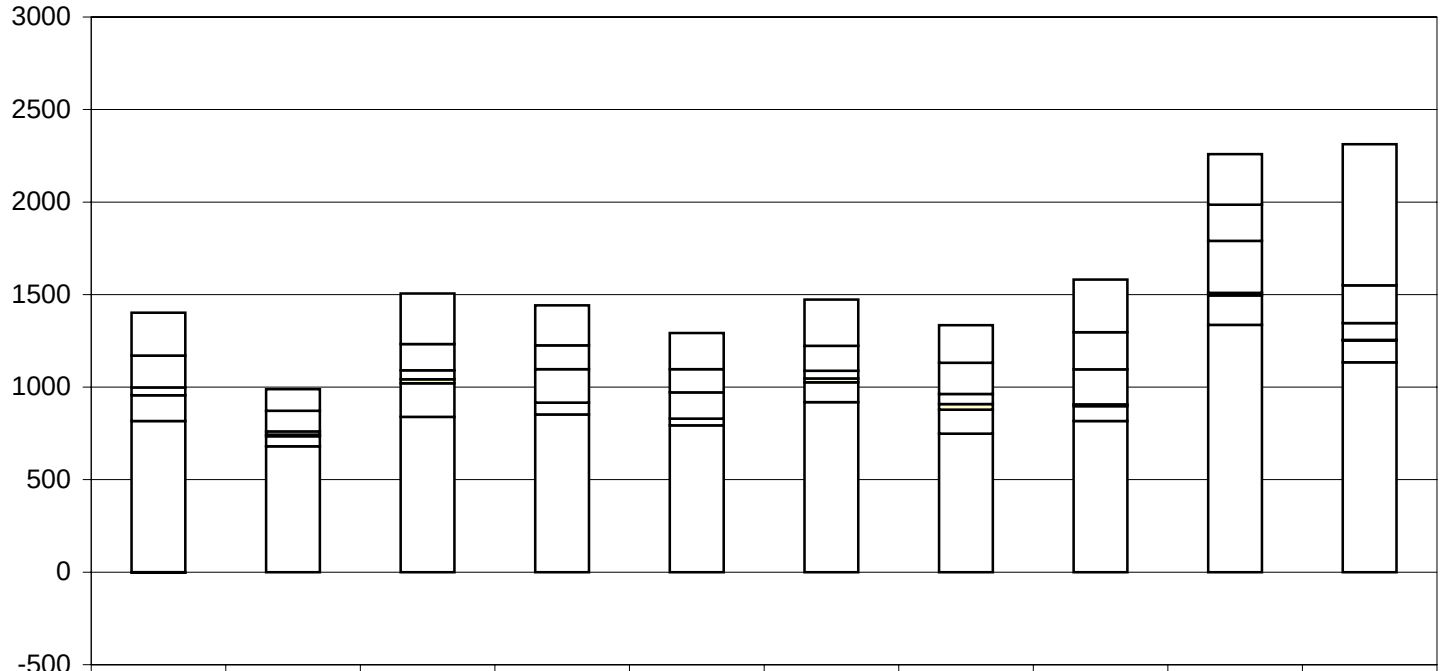
	Health Sciences Centre	St Boniface
Support Services	293	230
Administration Services	225	227
Diagnostic & Therapeutic Services	515	327
Inpatient Services-Other	61	12
Inpatient Services-Supplies	294	323
Inpatient Services-Compensation	1,536	1,366

Figure 9: Components of Average Cost Per Weighted Case
Urban Community Hospitals
1997/98



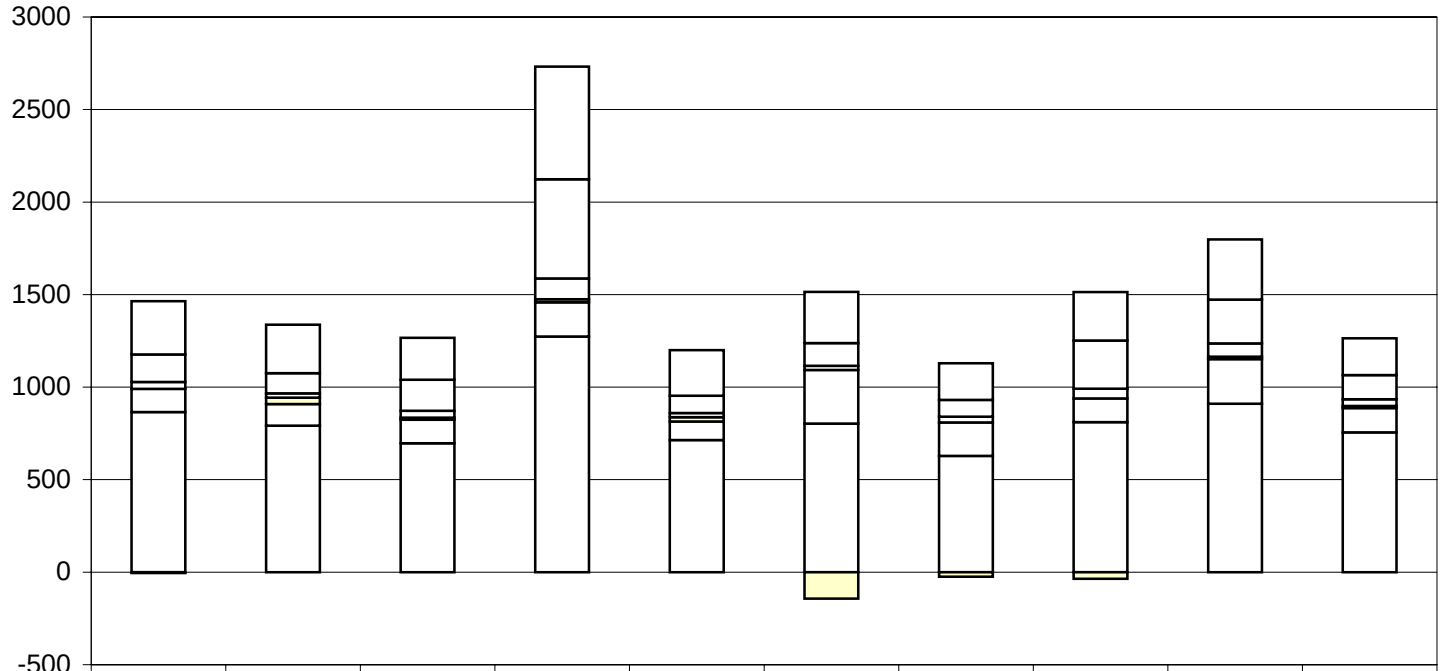
	Brandon	Concordia	Salvation Army Grace	Seven Oaks	Victoria
Support Services	241	162	182	173	254
Administration Services	215	198	155	172	208
Diagnostic & Therapeutic Services	197	150	227	378	293
Inpatient Services-Other	7	7	44	4	21
Inpatient Services-Supplies	160	152	184	175	240
Inpatient Services-Compensation	1,091	783	868	739	995

Figure 10: Components of Average Cost Per Weighted Case
Major Rural Hospitals
1997/98



	Bethel (Winkler)	Bethesda (Steinbach)	Dauphin	Flin Flon	Morden	Portage	Selkirk	Swan River	The Pas	Thompson
Support Services	232	116	273	216	195	250	204	285	273	763
Administration Services	171	112	142	130	125	135	168	200	196	204
Diagnostic & Therapeutic Services	43	18	48	180	141	42	55	189	281	90
Inpatient Services-Other	(3)	8	22	(0)	1	20	30	9	13	3
Inpatient Services-Supplies	139	55	182	64	36	108	129	81	159	118
Inpatient Services-Compensation	817	680	839	853	794	919	749	817	1,337	1,134

Figure 11: Components of Average Cost Per Weighted Case
Intermediate Rural Hospitals
1997/98



	Altona	Beausejour	Carman	Churchill	Johnson (Gimli)	Minnedosa	Neepawa	Souris	Ste Rose	Virden
Support Services	288	262	226	608	247	277	198	261	325	199
Administration Services	148	109	168	536	94	123	91	261	237	131
Diagnostic & Therapeutic Services	37	24	37	113	22	22	31	53	72	36
Inpatient Services-Other	(5)	35	11	16	23	(143)	(25)	(35)	13	11
Inpatient Services-Supplies	126	116	128	185	100	290	180	128	242	131
Inpatient Services-Compensation	865	792	696	1,274	714	803	629	811	910	755

Figure 12: Components of Average Cost Per Weighted Case
Small Rural Hospitals
1997/98

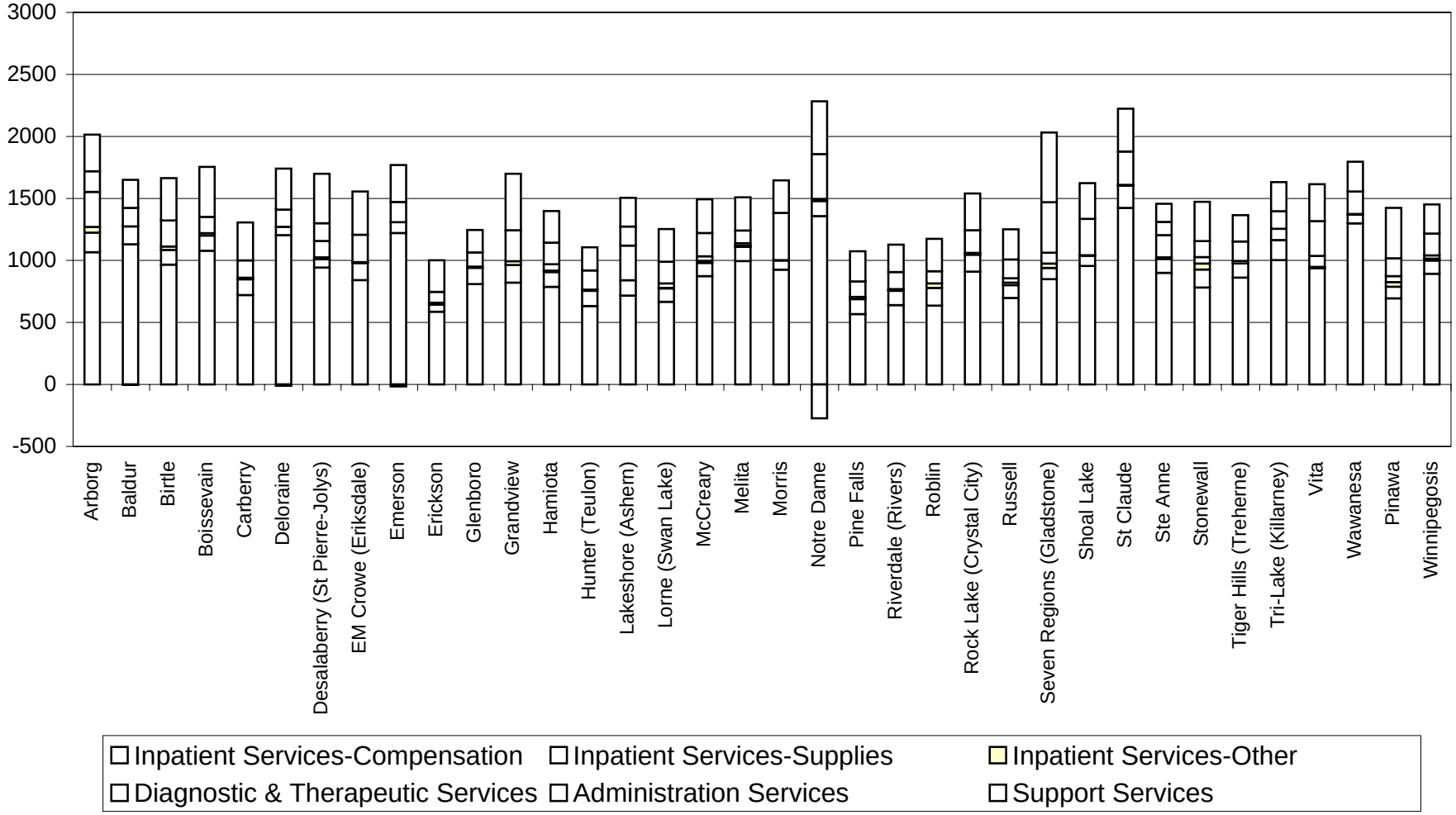
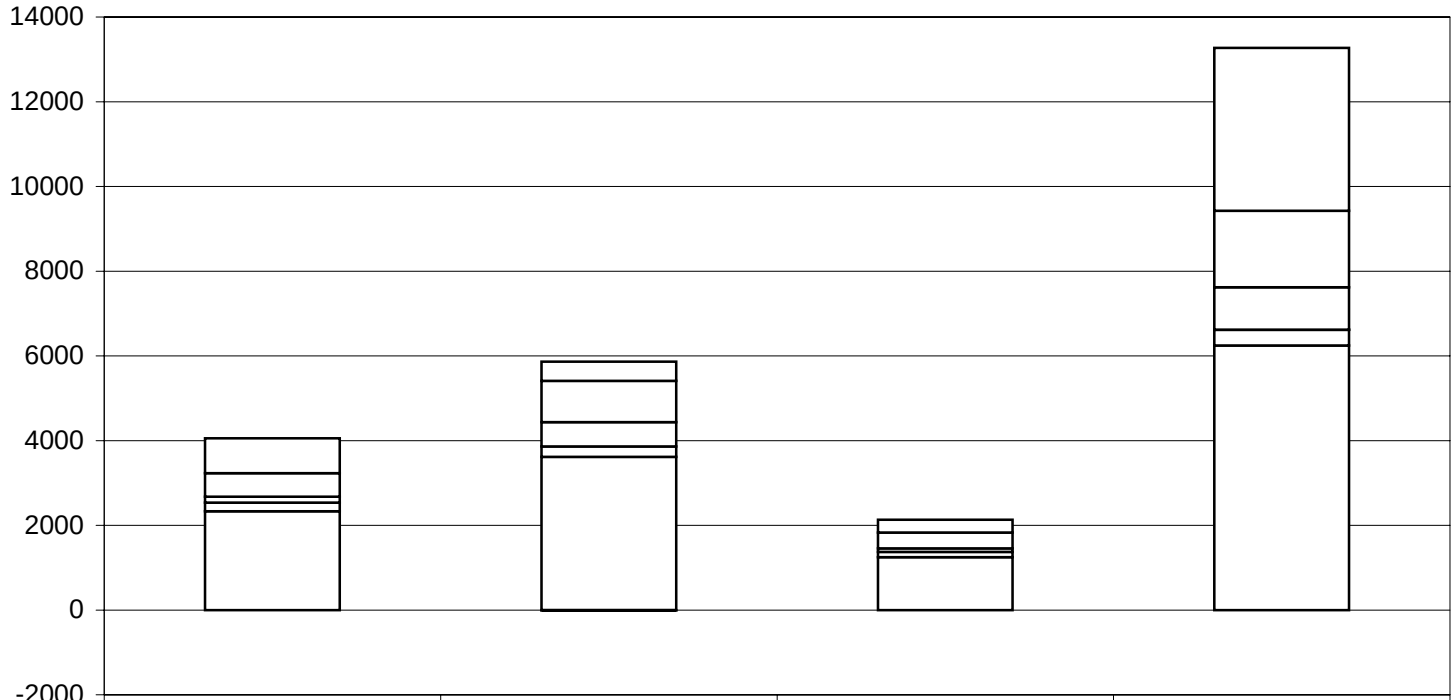
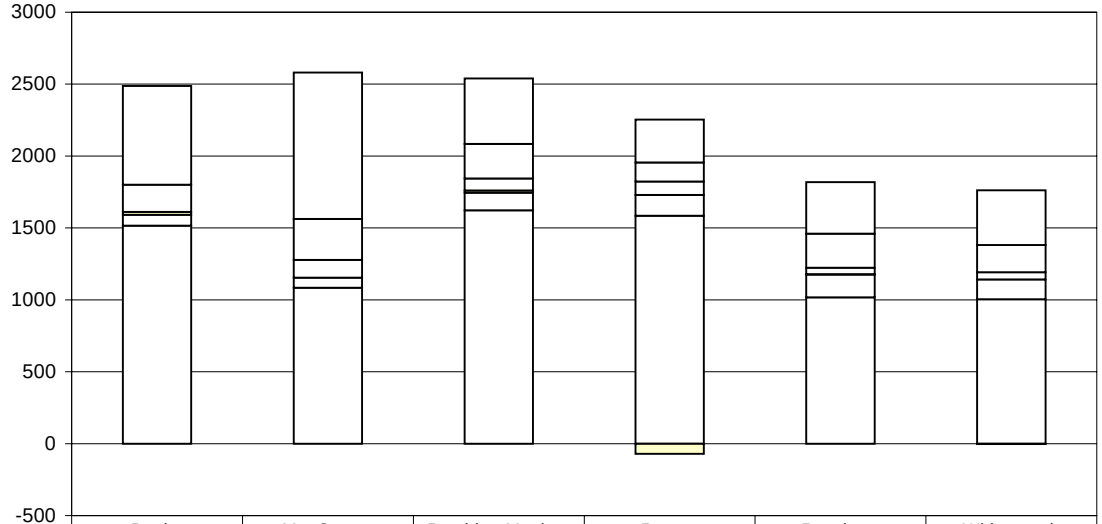


Figure 13: Components of Average Cost Per Weighted Case
Northern Isolated Hospitals
1997/98



	Gillam	Leaf Rapids	Lynn Lake	Snow Lake
Support Services	823	454	302	3,846
Administration Services	558	976	374	1,806
Diagnostic & Therapeutic Services	140	574	84	1,002
Inpatient Services-Other	-	(5)	(0)	3
Inpatient Services-Supplies	201	244	125	368
Inpatient Services-Compensation	2,334	3,618	1,249	6,246

Figure 14: Components of Average Cost Per Weighted Case
Small Multi-Use Hospitals
1997/98



	Benito	MacGregor	Pembina-Manitou	Reston	Rossburn	Whitemouth
Support Services	687	1,019	456	297	359	381
Administration Services	188	284	240	133	236	189
Diagnostic & Therapeutic Services	-	124	84	93	45	51
Inpatient Services-Other	21	-	15	(70)	3	(2)
Inpatient Services-Supplies	75	69	123	146	159	137
Inpatient Services-Compensation	1,516	1,085	1,622	1,584	1,017	1,004

Table 5: Components of Average Cost Per Weighted Case, 1997/98

	Inpatient Services-Compensation*	Inpatient Services-Supplies	Inpatient Services-Other	Diagnostic & Therapeutic Services	Administration Services	Support Services	Average Full Cost Per Weighted Case♦
Teaching Hospitals							
Health Sciences Centre	$1,536	$294	$30	$515	$225	$293	$2,892
St Boniface	1,366	323	12	327	227	230	2,484
Urban Community Hospitals							
Brandon	1,091	160	7	197	215	241	1,910
Concordia	783	152	7	150	198	162	1,450
Salvation Army Grace	868	184	44	227	155	182	1,660
Seven Oaks	739	175	4	378	172	173	1,642
Victoria	995	240	21	293	208	254	2,011
Major Rural Hospitals							
Bethel (Winkler)	817	139	(3)	43	171	232	1,399
Bethesda (Steinbach)	680	55	8	18	112	116	989
Dauphin	839	182	22	48	142	273	1,506
Flin Flon	853	64	(0)	180	130	216	1,442
Morden	794	36	1	141	125	195	1,292
Portage	919	108	20	42	135	250	1,473
Selkirk	749	129	30	55	168	204	1,335
Swan River	817	81	9	189	200	285	1,582
The Pas	1,337	159	13	281	196	273	2,259
Thompson	1,134	118	3	90	204	763	2,313
Intermediate Rural Hospitals							
Altona	865	126	(5)	37	148	288	1,460
Beausejour	792	116	35	24	109	262	1,337
Carman	696	128	11	37	168	226	1,266
Churchill	1,274	185	16	113	536	608	2,732
Johnson (Gimli)	714	100	23	22	94	247	1,200
Minnedosa	803	290	(143)	22	123	277	1,372
Neepawa	629	180	(25)	31	91	198	1,104
Souris	811	128	(35)	53	261	261	1,478
Ste Rose	910	242	13	72	237	325	1,798
Virden	755	131	11	36	131	199	1,264
Small Rural Hospitals							
Arborg	1,067	157	46	283	166	296	2,014
Baldur	1,130	145	(3)	84	149	226	1,731
Birtle	966	118	28	75	211	341	1,738
Boissevain	1,079	122	19	59	131	404	1,814
Carberry	721	126	13	45	139	306	1,352
Deloraine	1,204	67	(11)	31	139	330	1,761

* Payments made to physicians for services provided to inpatients are not included in these values

♦ Rounding results in some rows not equaling the total

	Inpatient Services-Compensation*	Inpatient Services-Supplies	Inpatient Services-Other	Diagnostic & Therapeutic Services	Administration Services	Support Services	Average Full Cost Per Weighted Case♦
Desalaberry (St Pierre-Jolys)	943	67	15	133	142	399	1,699
EM Crowe (Eriksdale)	842	137	8	31	220	349	1,587
Emerson	1,221	87	(16)	42	163	297	1,796
Erickson	587	58	15	29	87	255	1,030
Glenboro	810	131	10	194	115	181	1,440
Grandview	821	142	31	1	249	456	1,701
Hamiota	788	119	12	51	174	255	1,398
Hunter (Teulon)	633	122	10	76	154	187	1,182
Lakeshore (Ashern)	716	125	(0)	279	154	231	1,504
Lorne (Swan Lake)	667	107	4	36	175	264	1,254
McCreary	874	106	17	36	188	273	1,494
Melita	995	115	9	20	102	268	1,509
Morris	925	74	4	44	381	261	1,689
Notre Dame	1,358	122	16	(272)	362	426	2,011
Pinawa	694	94	37	48	143	406	1,424
Pine Falls	567	121	18	65	125	243	1,139
Riverdale (Rivers)	640	115	5	9	137	221	1,127
Roblin	636	143	36	26	98	262	1,201
Rock Lake (Crystal City)	910	137	14	32	183	296	1,572
Russell	698	104	20	35	152	244	1,251
Seven Regions (Gladstone)	849	91	35	88	407	562	2,032
Shoal Lake	956	83	4	51	294	288	1,674
St Claude	1,423	179	7	39	268	346	2,263
Ste Anne	900	112	13	179	107	146	1,457
Stonewall	781	145	48	52	129	317	1,473
Tiger Hills (Treherne)	862	114	20	41	157	212	1,406
Tri-Lake (Killarney)	1,002	161	1	90	142	235	1,632
Vita	940	1	7	89	280	298	1,615
Wawanesa	1,299	70	6	229	181	240	2,025
Winnipegosis	893	107	14	27	176	234	1,451
Northern Isolated Hospitals							
Gillam	2,334	201	-	140	558	823	4,056
Leaf Rapids	3,618	244	(5)	574	976	454	5,860
Lynn Lake	1,249	125	(0)	84	374	302	2,133
Snow Lake	6,246	368	3	1,022	1,806	3,846	13,292
Small Multi-use Facilities							
Benito	1,516	75	21	-	188	687	2,487
MacGregor	1,085	69	-	124	284	1,019	2,581
Pembina Manitou	1,622	123	15	84	240	456	2,540
Reston	1,584	146	(70)	93	133	297	2,183
Rossburn	1,017	159	3	45	236	359	1,819
Whitemouth	1,004	137	(2)	51	189	381	1,760

Table 6: Components of Average Cost per Weighted Case by Percent, 1997/98*

	Inpatient Services-Compensation	Inpatient Services-Supplies	Inpatient Services-Other	Diagnostic & Therapeutic Services	Administration Services	Support Services
Teaching Hospitals						
Health Sciences Centre	53%	10%	1%	18%	8%	10%
St Boniface	55%	13%	0%	13%	9%	9%
Urban Community Hospitals						
Brandon	57%	8%	0%	10%	11%	13%
Concordia	54%	10%	0%	10%	14%	11%
Salvation Army Grace	52%	11%	3%	14%	9%	11%
Seven Oaks	45%	11%	0%	23%	10%	11%
Victoria	49%	12%	1%	15%	10%	13%
Major Rural Hospitals						
Bethel (Winkler)	58%	10%	0%	3%	12%	17%
Bethesda (Steinbach)	69%	6%	1%	2%	11%	12%
Dauphin	56%	12%	1%	3%	9%	18%
Flin Flon	59%	4%	0%	12%	9%	15%
Morden	61%	3%	0%	11%	10%	15%
Portage	62%	7%	1%	3%	9%	17%
Selkirk	56%	10%	2%	4%	13%	15%
Swan River	52%	5%	1%	12%	13%	18%
The Pas	59%	7%	1%	12%	9%	12%
Thompson	49%	5%	0%	4%	9%	33%
Intermediate Rural Hospitals						
Altona	59%	9%	0%	3%	10%	20%
Beausejour	59%	9%	3%	2%	8%	20%
Carman	55%	10%	1%	3%	13%	18%
Churchill	47%	7%	1%	4%	20%	22%
Johnson (Gimli)	59%	8%	2%	2%	8%	21%
Minnedosa	59%	21%	-10%	2%	9%	20%
Neepawa	57%	16%	-2%	3%	8%	18%
Souris	55%	9%	-2%	4%	18%	18%
Ste Rose	51%	13%	1%	4%	13%	18%
Virden	60%	10%	1%	3%	10%	16%
Small Rural Hospitals						
Arborg	53%	8%	2%	14%	8%	15%
Baldur	65%	8%	0%	5%	9%	13%
Birtle	56%	7%	2%	4%	12%	20%
Boissevain	59%	7%	1%	3%	7%	22%
Carberry	53%	9%	1%	3%	10%	23%
Deloraine	68%	4%	-1%	2%	8%	19%
Desalaberry (St Pierre-Jolys)	55%	4%	1%	8%	8%	24%

*Rows may not total 100% due to rounding

EM Crowe (Eriksdale)	53%	9%	0%	2%	14%	22%
Emerson	68%	5%	-1%	2%	9%	17%
Erickson	57%	6%	1%	3%	8%	25%
Glenboro	56%	9%	1%	13%	8%	13%
Grandview	48%	8%	2%	0%	15%	27%
Hamiota	56%	8%	1%	4%	12%	18%
Hunter (Teulon)	54%	10%	1%	6%	13%	16%
Lakeshore (Ashern)	48%	8%	0%	19%	10%	15%
Lorne (Swan Lake)	53%	9%	0%	3%	14%	21%
McCreary	59%	7%	1%	2%	13%	18%
Melita	66%	8%	1%	1%	7%	18%
Morris	55%	4%	0%	3%	23%	15%
Notre Dame	67%	6%	1%	-14%	18%	21%
Pinawa	49%	7%	3%	3%	10%	29%
Pine Falls	50%	11%	2%	6%	11%	21%
Riverdale (Rivers)	57%	10%	0%	1%	12%	20%
Roblin	53%	12%	3%	2%	8%	22%
Rock Lake (Crystal City)	58%	9%	1%	2%	12%	19%
Russell	56%	8%	2%	3%	12%	19%
Seven Regions (Gladstone)	42%	4%	2%	4%	20%	28%
Shoal Lake	57%	5%	0%	3%	18%	17%
St Claude	63%	8%	0%	2%	12%	15%
Ste Anne	62%	8%	1%	12%	7%	10%
Stonewall	53%	10%	3%	4%	9%	21%
Tiger Hills (Treherne)	61%	8%	1%	3%	11%	15%
Tri-Lake (Killarney)	61%	10%	0%	6%	9%	14%
Vita	58%	0%	0%	6%	17%	18%
Wawanesa	64%	3%	0%	11%	9%	12%
Winnipegosis	62%	7%	1%	2%	12%	16%
Northern Isolated Hospitals						
Gillam	58%	5%	0%	3%	14%	20%
Leaf Rapids	62%	4%	0%	10%	17%	8%
Lynn Lake	59%	6%	0%	4%	18%	14%
Snow Lake	47%	3%	0%	8%	14%	29%
Small Multi-use Facilities						
Benito	61%	3%	1%	0%	8%	28%
MacGregor	42%	3%	0%	5%	11%	39%
Pembina Manitou	64%	5%	1%	3%	9%	18%
Reston	73%	7%	-3%	4%	6%	14%
Rossburn	56%	9%	0%	2%	13%	20%
Whitemouth	57%	8%	0%	3%	11%	22%

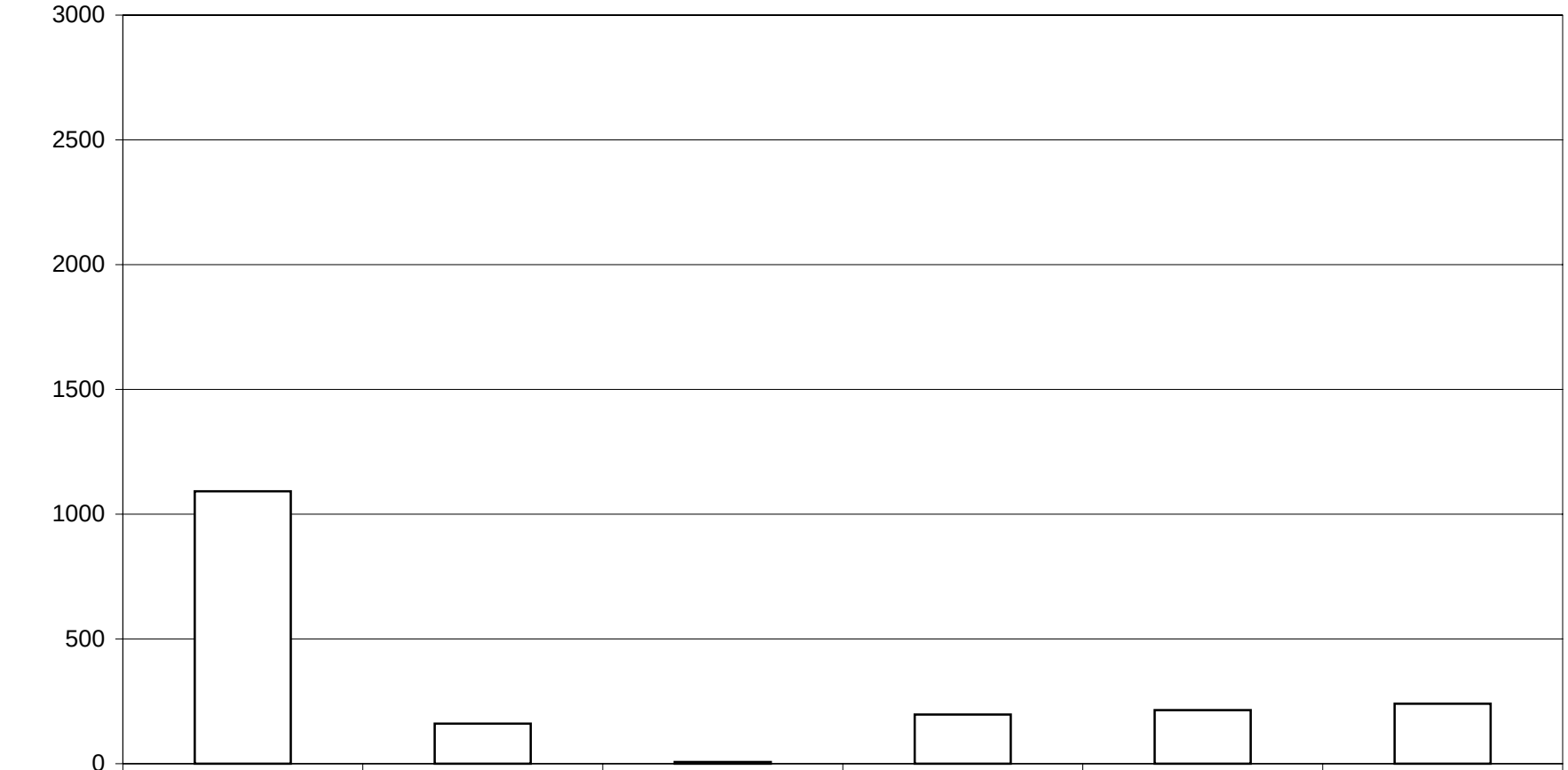
APPENDIX F-2

Components of Cost Per Weighted Case by Regional Health Authority

In this appendix, hospitals are grouped according to the Regional Health Authority in which they are located, rather than by type of facility as appeared in Appendix F-1. The comments that were made at the start of Appendix F-1 continue to be relevant here, and will not be repeated. This appendix will allow administrators and managers in the RHAs to review the hospitals in their region, and for the hospital administrators and managers to see how they compare with the facilities in neighboring communities.

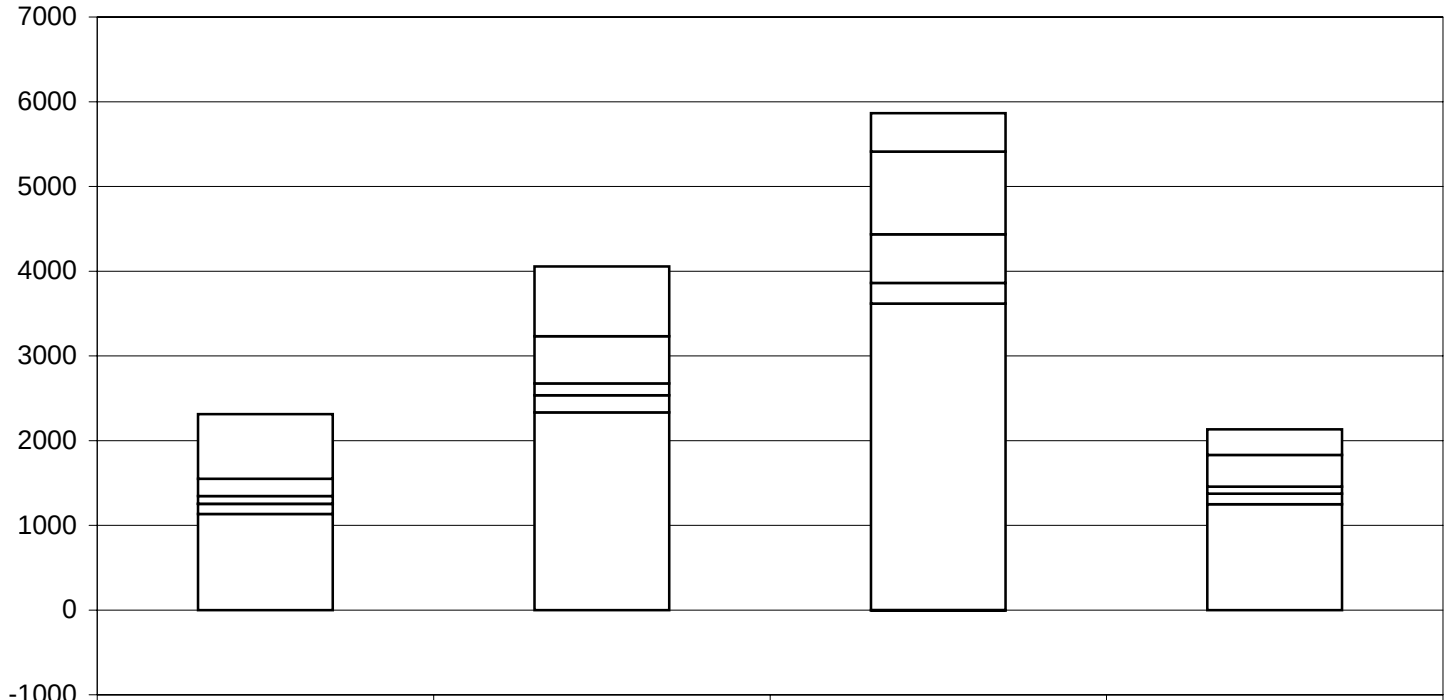
Comment from DeSalaberry: - major expenses were incurred to correct facility deficiencies - maintenance personnel provide service to DeSalaberry and Menno Home (Grunthal)

Figure 15: Components of Average Cost Per Weighted Case
Brandon RHA
1997/98



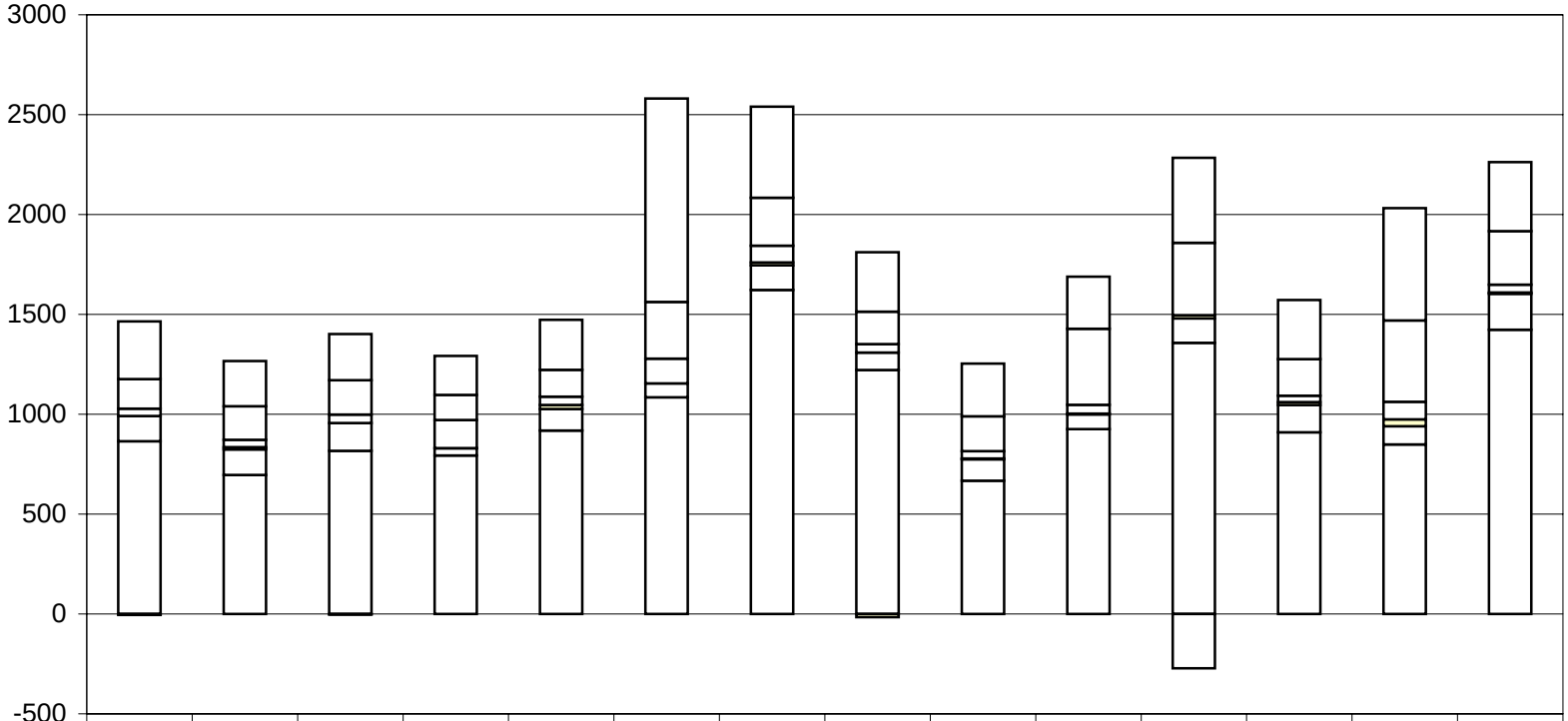
	Inpatient Services-Compensation	Inpatient Services-Supplies	Inpatient Services-Other	Diagnostic & Therapeutic Services	Administration Services	Support Services
Brandon	1,091	160	7	197	215	241

Figure 16: Components of Average Cost Per Weighted Case
Burntwood RHA
1997/98



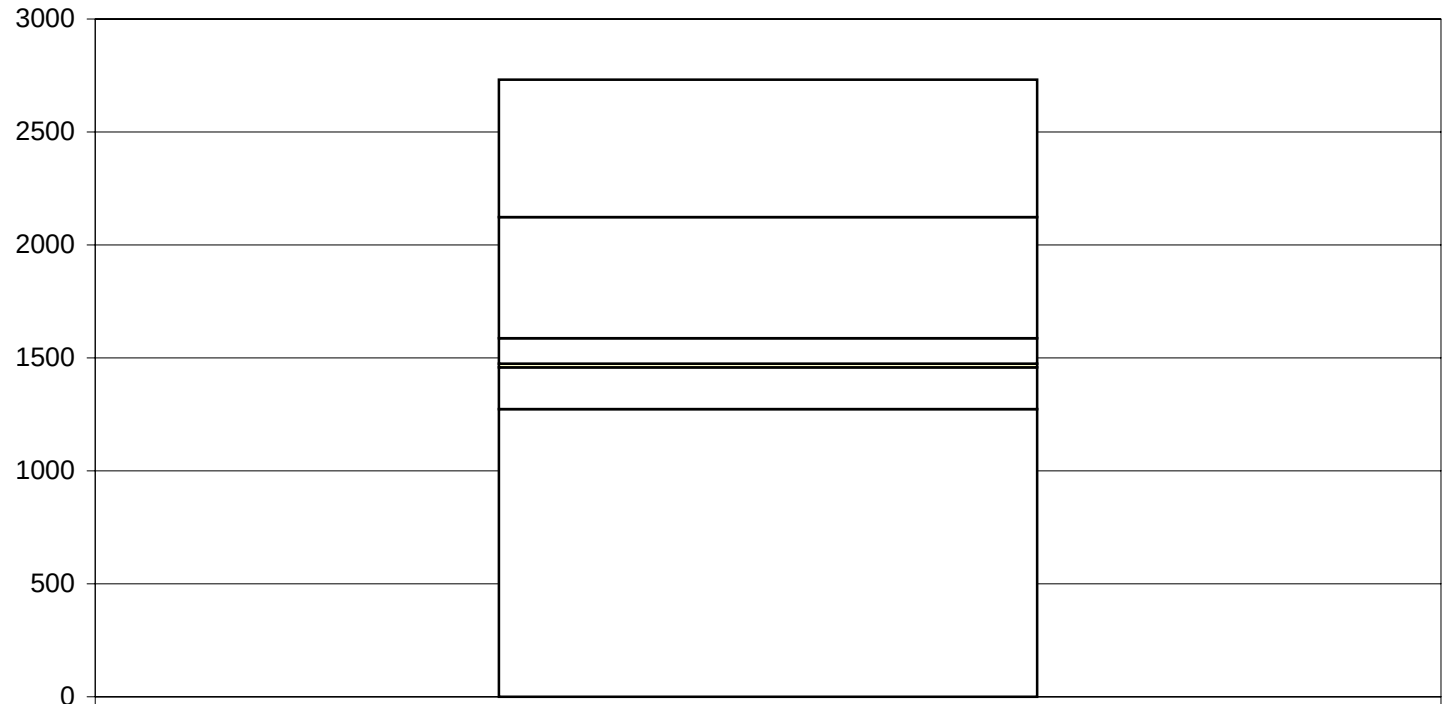
	Thompson	Gillam	Leaf Rapids	Lynn Lake
Support Services	763	823	454	302
Administration Services	204	558	976	374
Diagnostic & Therapeutic Services	90	140	574	84
Inpatient Services-Other	3	-	(5)	(0)
Inpatient Services-Supplies	118	201	244	125
Inpatient Services-Compensation	1,134	2,334	3,618	1,249

Figure 17: Components of Average Cost Per Weighted Case
Central RHA
1997/98



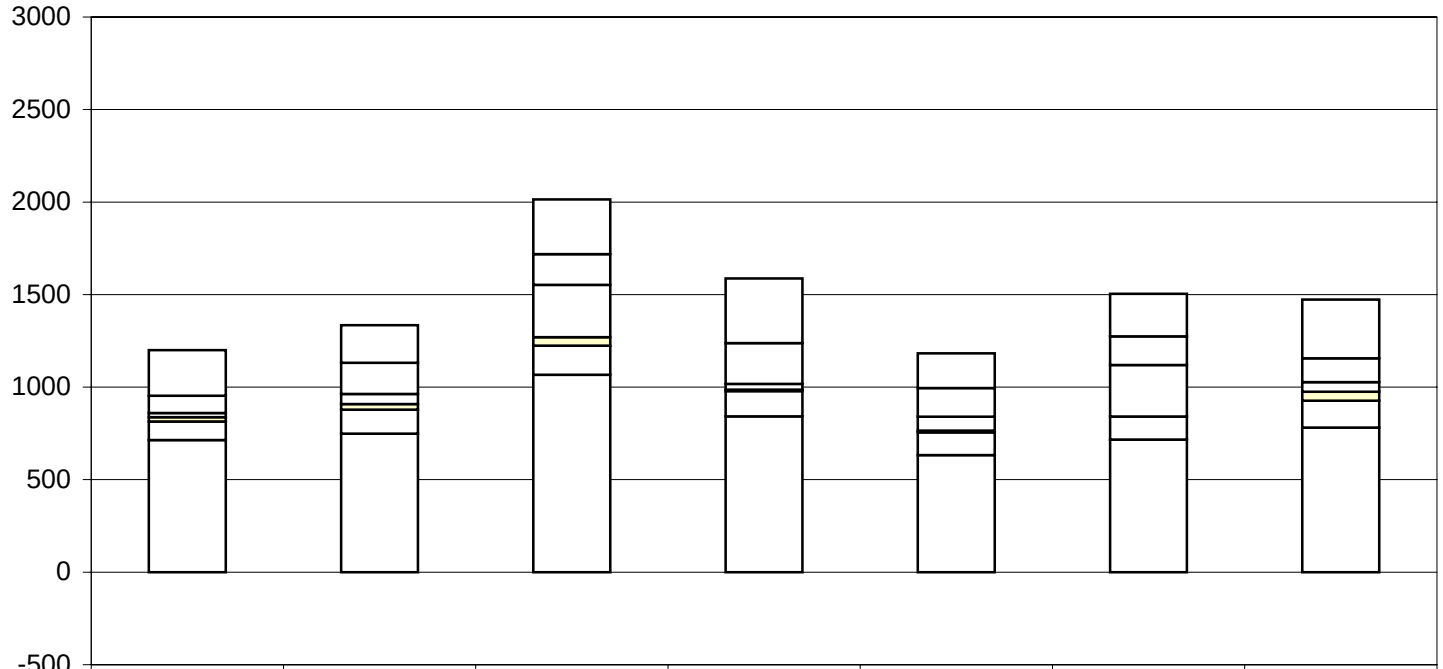
	Altona	Carman	Bethel (Winkler)	Morden	Portage	MacGregor	Pembina Manitou	Emerson	Lorne (Swan Lake)	Morris	Notre Dame	Rock Lake (Crystal City)	Seven Regions (Gladstone)	St Claude
Support Services	288	226	232	195	250	1,019	456	297	264	261	426	296	562	346
Administration Services	148	168	171	125	135	284	240	163	175	381	362	183	407	268
Diagnostic & Therapeutic Services	37	37	43	141	42	124	84	42	36	44	(272)	32	88	39
Inpatient Services-Other	(5)	11	(3)	1	20	-	15	(16)	4	4	16	14	35	7
Inpatient Services-Supplies	126	128	139	36	108	69	123	87	107	74	122	137	91	179
Inpatient Services-Compensation	865	696	817	794	919	1,085	1,622	1,221	667	925	1,358	910	849	1,423

Figure 18: Components of Average Cost Per Weighted Case
Churchill RHA
1997/98



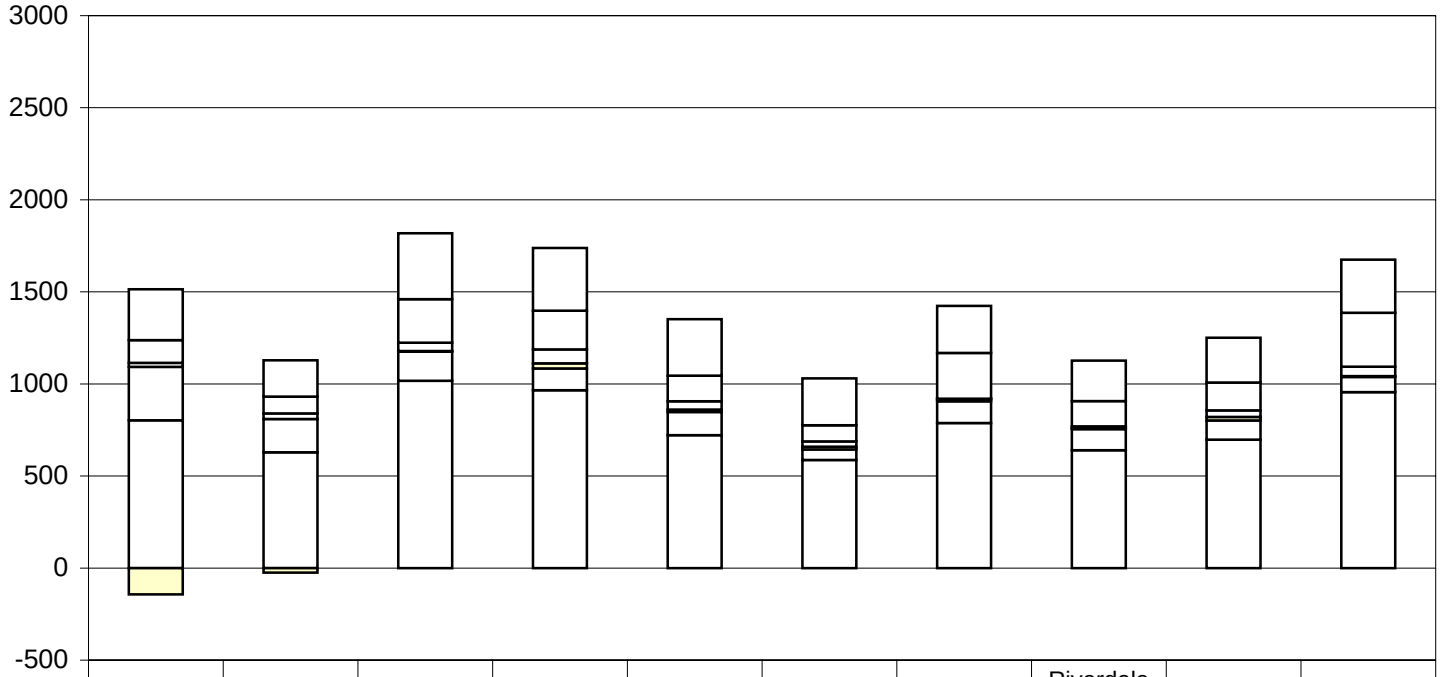
	Churchill
Support Services	608
Administration Services	536
Diagnostic & Therapeutic Services	113
Inpatient Services-Other	16
Inpatient Services-Supplies	185
Inpatient Services-Compensation	1,274

Figure 19: Components of Average Cost Per Weighted Case
Interlake RHA
1997/98



	Johnson (Gimli)	Selkirk	Arborg	EM Crowe (Eriksdale)	Hunter (Teulon)	Lakeshore (Ashern)	Stonewall
Support Services	247	204	296	349	187	231	317
Administration Services	94	168	166	220	154	154	129
Diagnostic & Therapeutic Services	22	55	283	31	76	279	52
Inpatient Services-Other	23	30	46	8	10	(0)	48
Inpatient Services-Supplies	100	129	157	137	122	125	145
Inpatient Services-Compensation	714	749	1,067	842	633	716	781

Figure 20: Components of Average Cost Per Weighted Case
Marquette RHA
1997/98

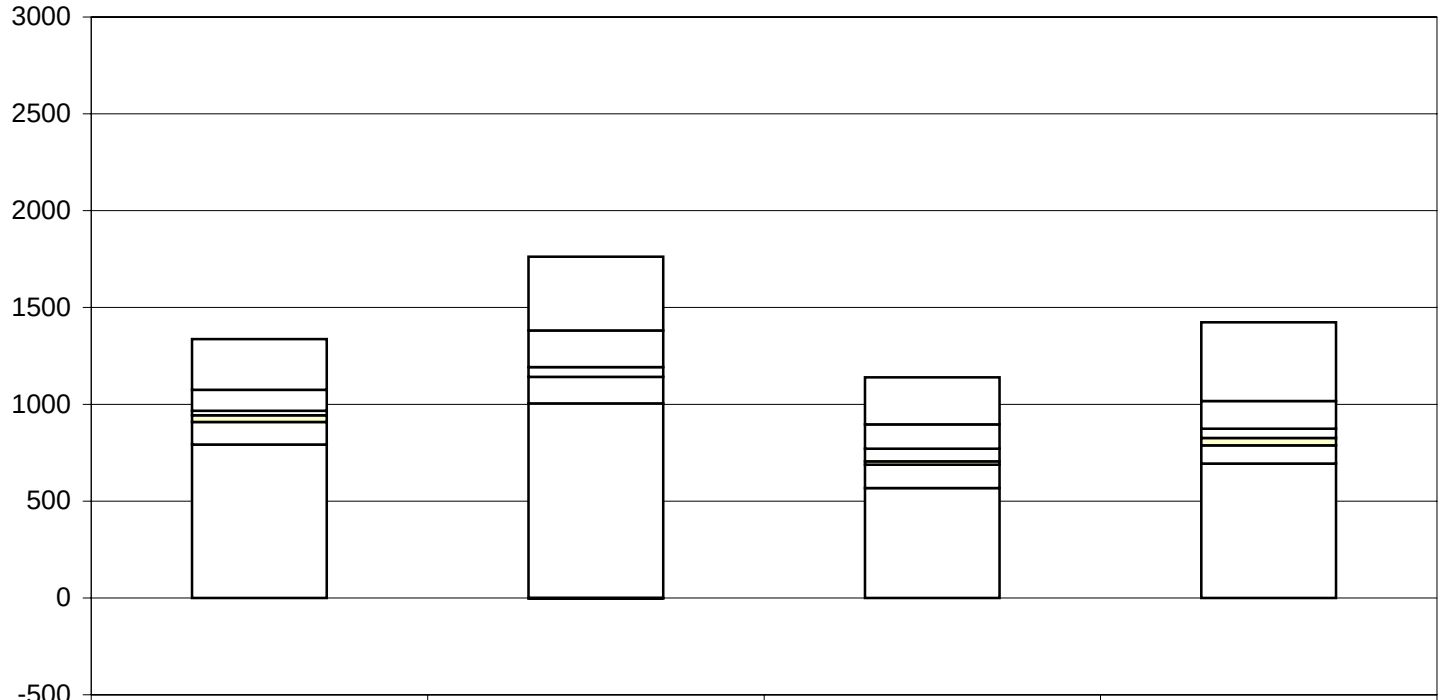


	Minnedosa	Neepawa	Rossburn	Birtle	Carberry	Erickson	Hamiota	Riverdale (Rivers)	Russell	Shoal Lake
Support Services	277	198	359	341	306	255	255	221	244	288
Administration Services	123	91	236	211	139	87	249	137	152	294
Diagnostic & Therapeutic Services	22	31	45	75	45	29	1	9	35	51
Inpatient Services-Other	(143)	(25)	3	28	13	15	12	5	20	4
Inpatient Services-Supplies	290	180	159	118	126	58	119	115	104	83
Inpatient Services-Compensation	803	629	1,017	966	721	587	788	640	698	956

Figure 21: Components of Average Cost Per Weighted Case
Nor-Man RHA
1997/98

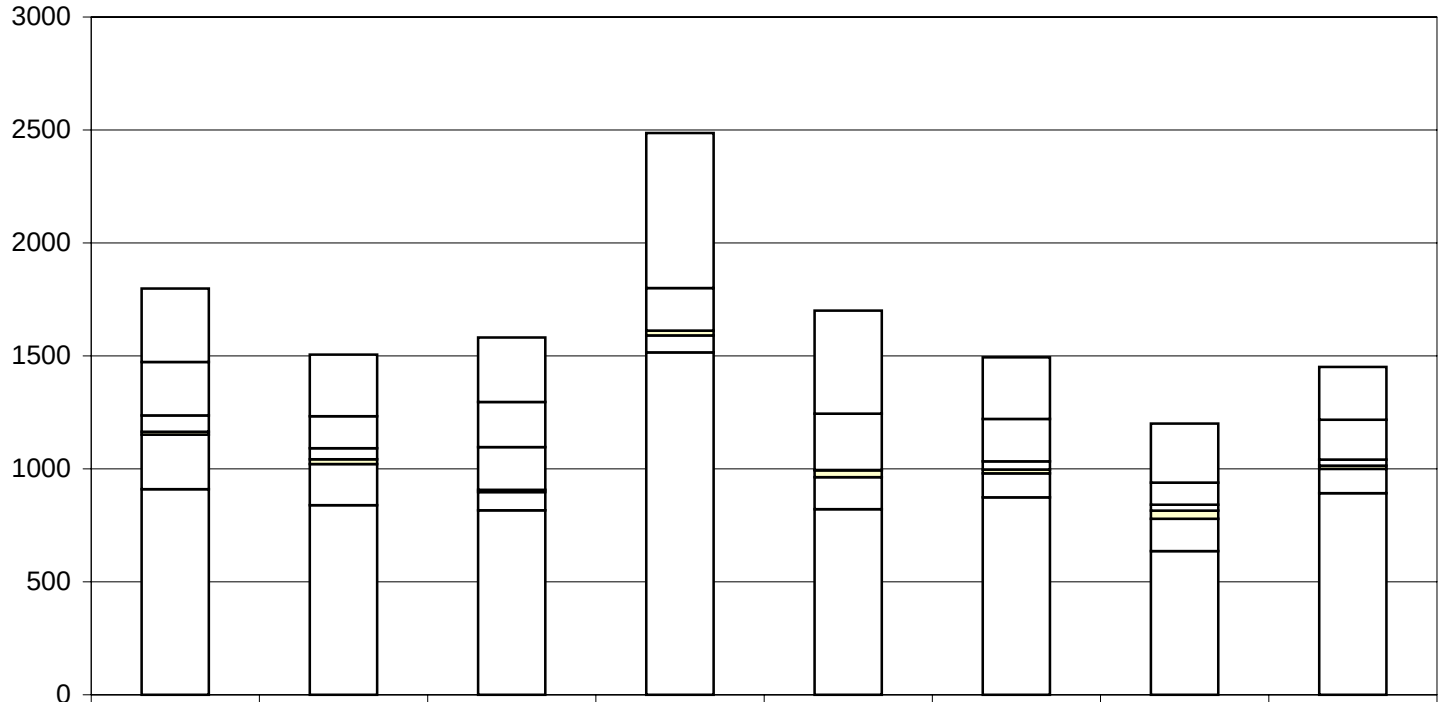
	Flin Flon	The Pas	Snow Lake
Support Services	156	273	3,846
Administration Services	123	196	1,806
Diagnostic & Therapeutic Services	180	281	1,002
Inpatient Services-Other	(0)	13	3
Inpatient Services-Supplies	64	159	368
Inpatient Services-Compensation	853	1,337	6,246

Figure 22: Components of Average Cost Per Weighted Case
North Eastman RHA
1997/98



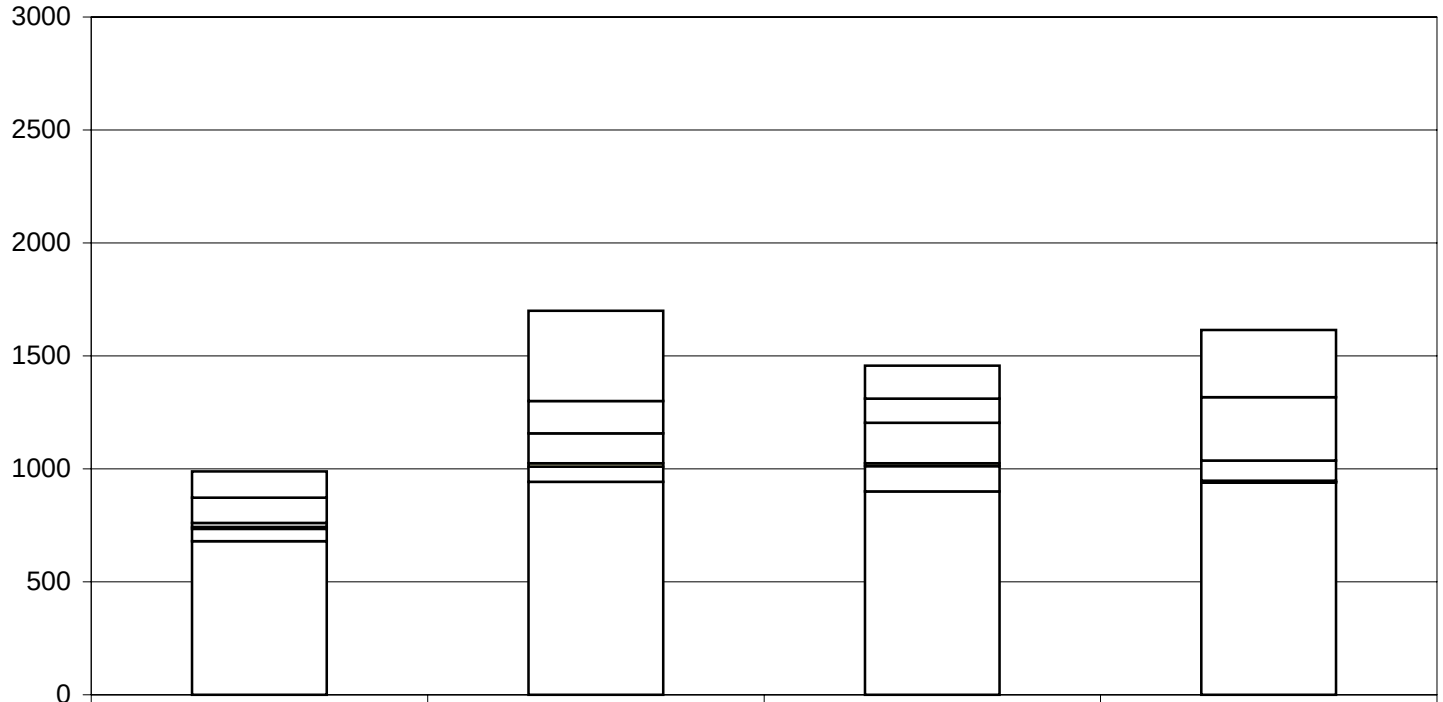
	Beausejour	Whitemouth	Pine Falls	Pinawa
Support Services	262	381	243	406
Administration Services	109	189	125	143
Diagnostic & Therapeutic Services	24	51	65	48
Inpatient Services-Other	35	(2)	18	37
Inpatient Services-Supplies	116	137	121	94
Inpatient Services-Compensation	792	1,004	567	694

Figure 23: Components of Average Cost Per Weighted Case
Parkland RHA
1997/98



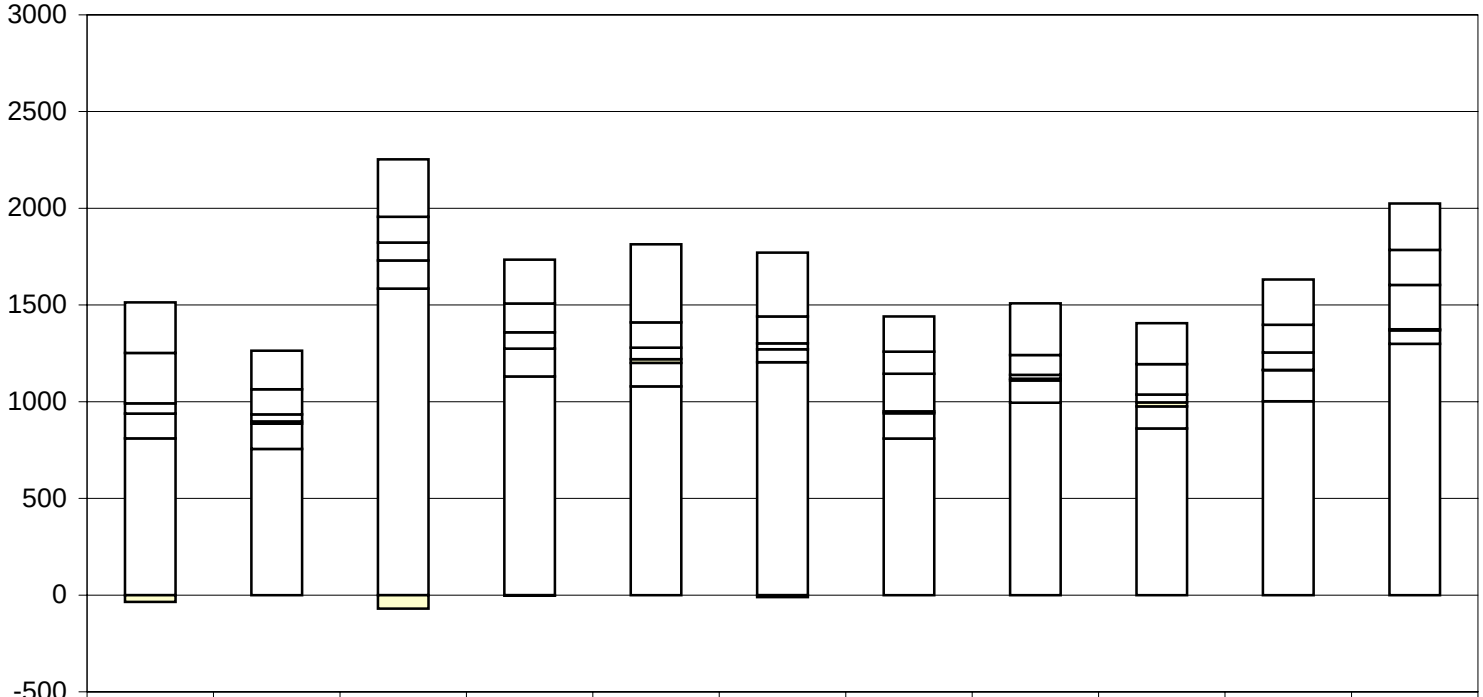
	Ste Rose	Dauphin	Swan River	Benito	Grandview	McCreary	Roblin	Winnipegosis
Support Services	325	273	285	687	456	273	262	234
Administration Services	237	142	200	188	249	188	98	176
Diagnostic & Therapeutic Services	72	48	189	-	1	36	26	27
Inpatient Services-Other	13	22	9	21	31	17	36	14
Inpatient Services-Supplies	242	182	81	75	142	106	143	107
Inpatient Services-Compensation	910	839	817	1,516	821	874	636	893

Figure 24: Components of Average Cost Per Weighted Case
South Eastman RHA
1997/98



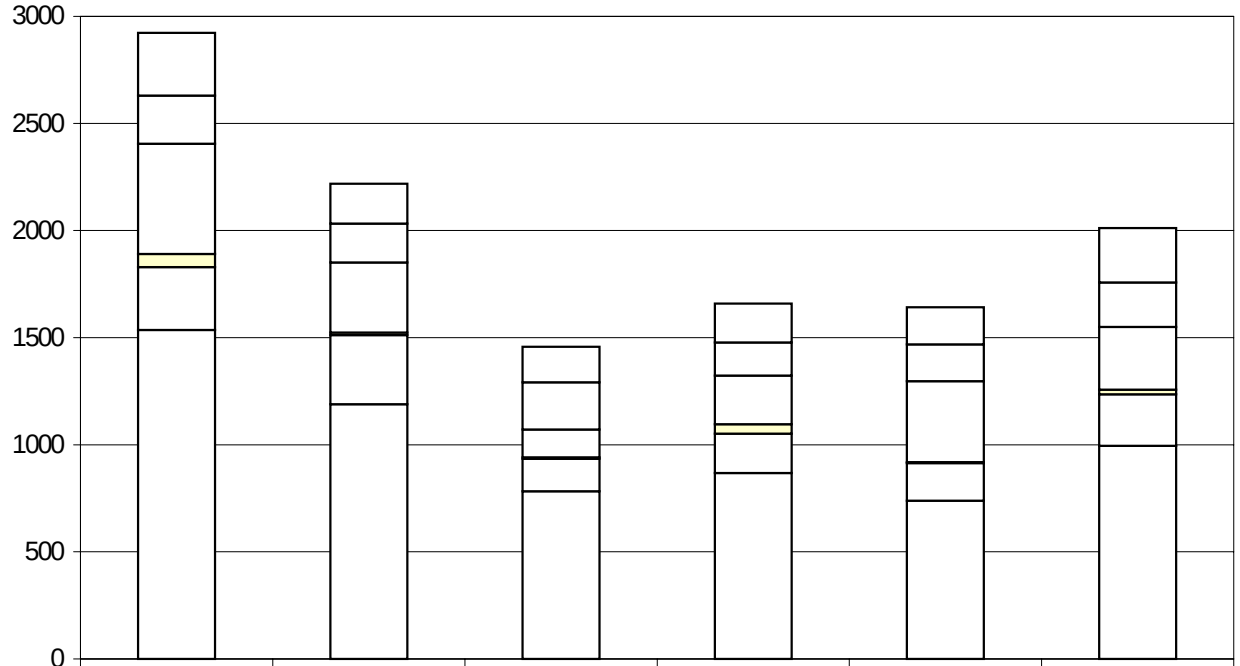
	Bethesda (Steinbach)	Desalaberry (St Pierre-Jolys)	Ste Anne	Vita
Support Services	116	399	146	298
Administration Services	112	142	107	280
Diagnostic & Therapeutic Services	18	133	179	89
Inpatient Services-Other	8	15	13	7
Inpatient Services-Supplies	55	67	112	1
Inpatient Services-Compensation	680	943	900	940

Figure 25: Components of Average Cost Per Weighted Case
South Westman RHA
1997/98



	Souris	Virden	Reston	Baldur	Boissevain	Deloraine	Glenboro	Melita	Tiger Hills (Treherne)	Tri-Lake (Killarney)	Wawanesa
Support Services	261	199	297	226	404	330	181	268	212	235	240
Administration Services	261	131	133	149	131	139	115	102	157	142	181
Diagnostic & Therapeutic Services	53	36	93	84	59	31	194	20	41	90	229
Inpatient Services-Other	(35)	11	(70)	(3)	19	(11)	10	9	20	1	6
Inpatient Services-Supplies	128	131	146	145	122	67	131	115	114	161	70
Inpatient Services-Compensation	811	755	1,584	1,130	1,079	1,204	810	995	862	1,002	1,299

Figure 26: Components of Average Cost Per Weighted Case
Winnipeg RHA
1997/98



	Health Sciences Centre	St Boniface	Concordia	Salvation Army Grace	Seven Oaks	Victoria
Support Services	293	185	165	182	173	254
Administration Services	225	181	221	155	172	208
Diagnostic & Therapeutic Services	515	327	130	227	378	293
Inpatient Services-Other	61	12	7	44	4	21
Inpatient Services-Supplies	294	323	152	184	175	240
Inpatient Services-Compensation	1,536	1,189	783	868	739	995

APPENDIX F-3

Proportional Distribution of Expenses by Type of Hospital

To assist in determining areas for further review by hospital or RHA administrators and managers, charts were prepared to reflect the distribution of all costs within each hospital. The components of these areas (called functional centres) are listed in Appendix C.

In reviewing these charts, the readers should note major deviations from the pattern. On average, inpatient services costs are the highest, followed by diagnostic and therapeutic services, then by support services, administrative services and ambulatory care services. Undistributed operating costs and "other" costs are the smallest proportion. See Figure 1 for the distribution of costs for all Manitoba hospitals.

The teaching hospitals follow the pattern, primarily because they contribute the most costs to the health care system. The high consistency of proportion of expenditures indicates that resources are being applied in a similar way between these two hospitals.

The urban community hospitals show a similar pattern, although the difference in costs between Diagnostic and Therapeutic services and Ambulatory Care services is not as great as at the teaching hospitals. As a result of the preliminary review of these tables that was conducted by administrators at two of the urban community facilities, reclassification of employee benefits was necessary, resulting in substantial changes to the initial presentation of these data. There is reasonable consistency in the distribution of expenses for the hospitals in this group.

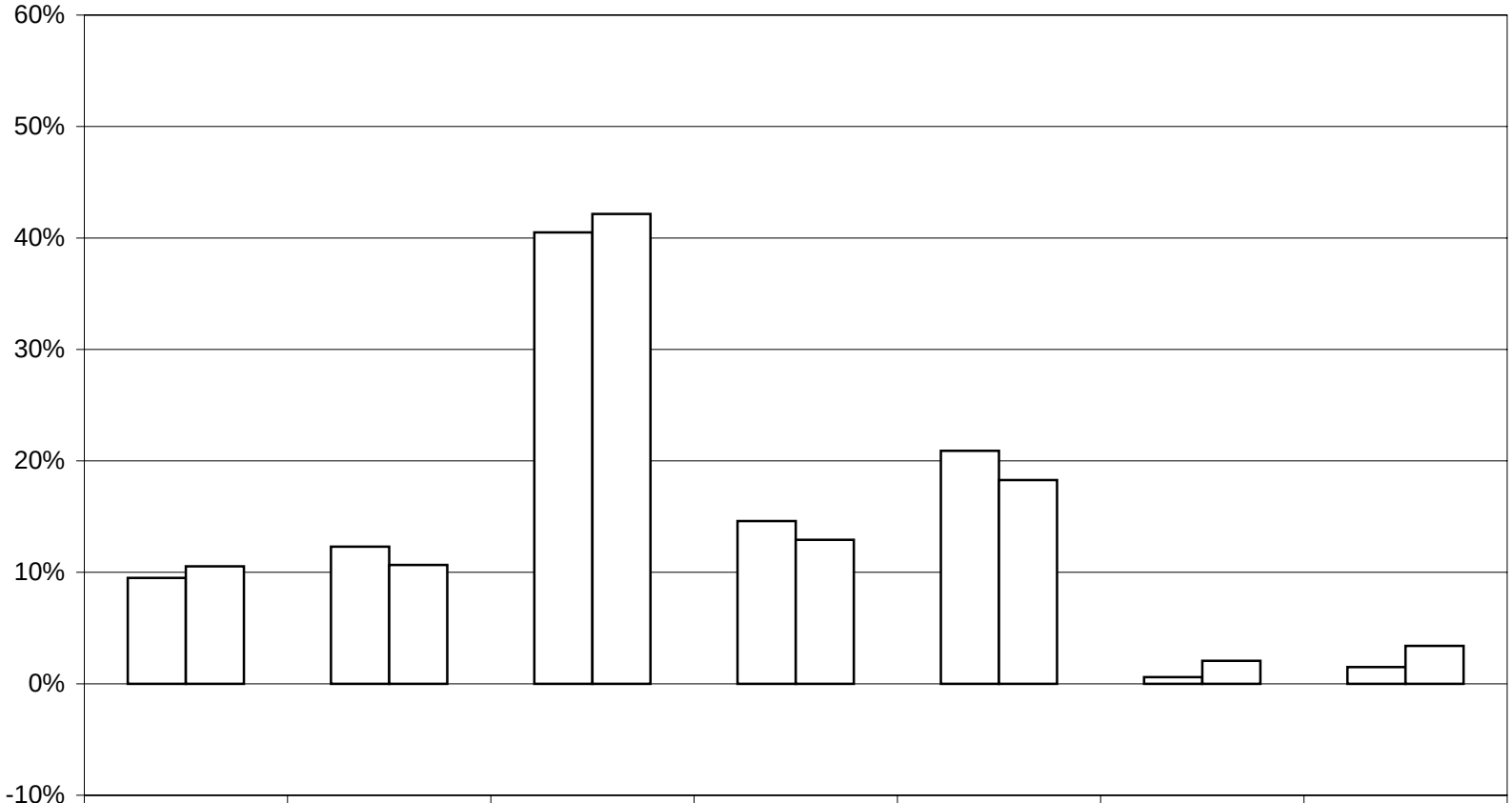
More variability appears in the data for major rural hospitals. Thompson General Hospital, as was previously mentioned, reports costs for the northern transportation program within the Support Services functional centre. This relatively high cost results in lower proportional costs in other functional centres. The most notable feature of the major rural hospitals is the high proportion of costs in the "Undistributed-Operating"

functional centre. Costs in this area had not been distributed to the functional centres in which the costs were incurred. This may have been because the costs were shared by multiple areas. All hospitals should be encouraged to minimize the use of this functional centre.

As with the major rural hospitals, the use of the "Undistributed-Operating" functional centre by the intermediate rural hospitals presents difficulty in interpretation of the data. As well, most facilities report a relatively small proportion of Ambulatory Care Services costs. These costs are likely reported under the inpatient services functional centre. The relatively high Administrative Services costs for Churchill and Souris should receive further review.

The smaller the hospital, the fewer are costs reported in the Ambulatory Care functional centre. Almost all of the smaller hospitals (Pine Falls, Hunter and Leaf Rapids hospitals being the exceptions) and the small multi-use hospitals report very few outpatient services, likely reflecting the integration of inpatient and outpatient care services in these facilities, with the costs being reported as inpatient care costs. Diagnostic and Therapeutic services costs are also reported less frequently at smaller hospitals. This may result from services being provided by a separately funded agency (e.g., Laboratory and Imaging Services and/or Community Therapy Services). As was indicated earlier, the use of the "Undistributed-Operating" functional centre should be discouraged. Within these groups, only EM Crowe and Lakeshore Hospitals appear to have not used this functional centre extensively.

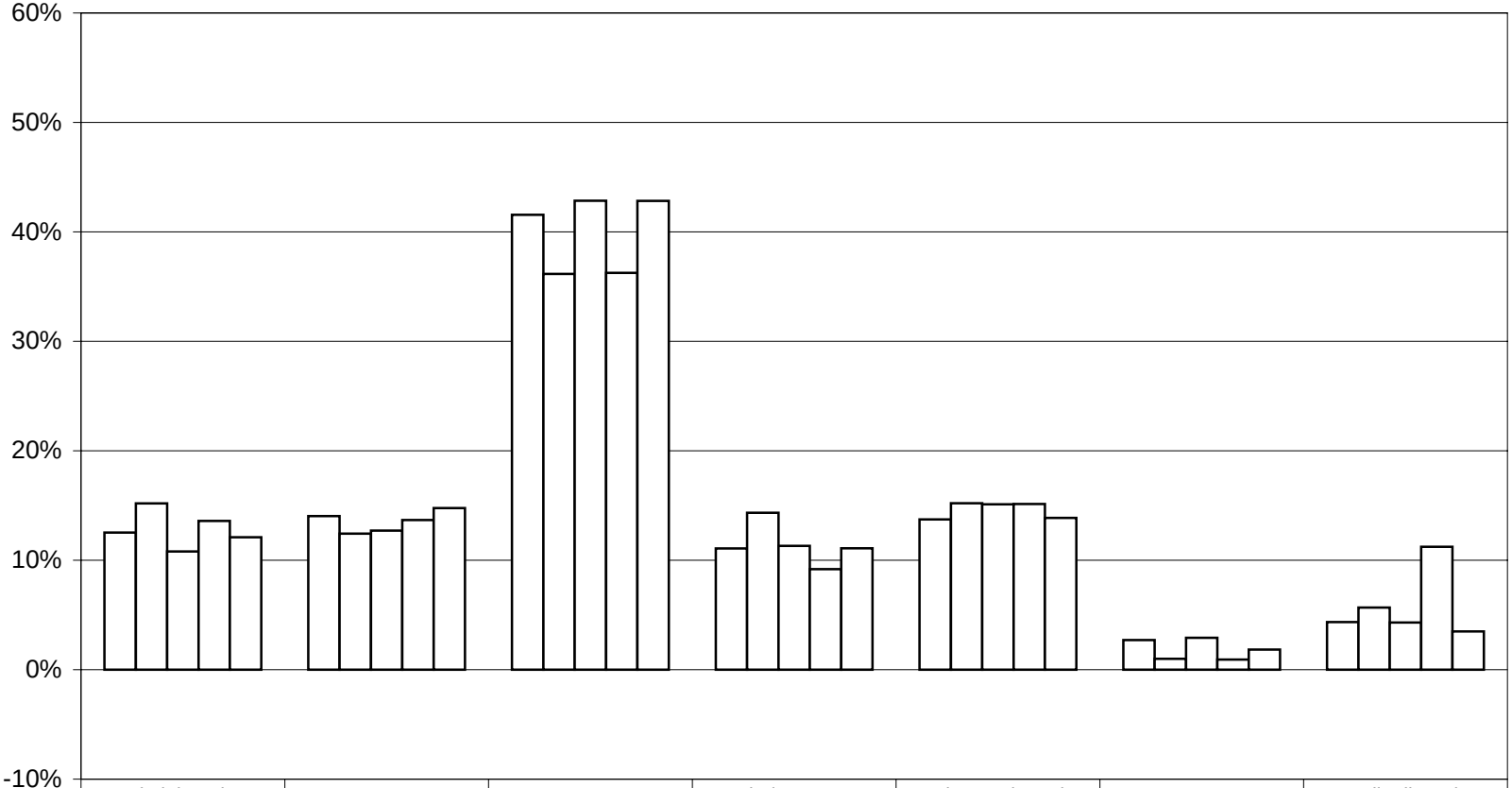
Figure 27: Distribution of Total Expenses
Teaching Hospitals
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Health Sciences Centre	9.5%	12.3%	40.5%	14.6%	20.9%	0.6%	1.5%
St Boniface	10.5%	10.7%	42.2%	12.9%	18.3%	2.1%	3.4%

Rows may not total 100% due to rounding

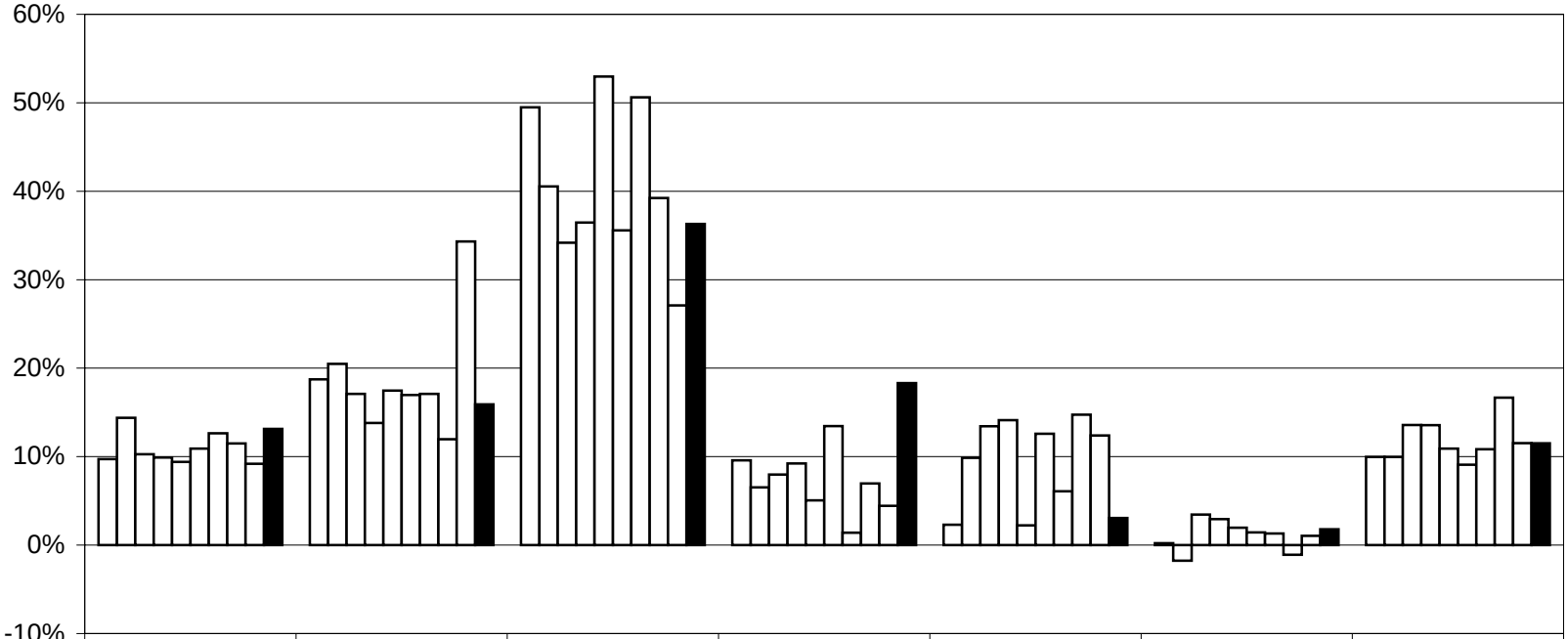
Figure 28: Distribution of Total Expenses
Urban Community Hospitals
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Brandon	12.5%	14.0%	41.6%	11.1%	13.7%	2.7%	4.4%
Concordia	15.2%	12.4%	36.2%	14.3%	15.2%	1.0%	5.7%
Salvation Army Grace	10.8%	12.7%	42.8%	11.3%	15.1%	2.9%	4.3%
Seven Oaks	13.6%	13.7%	36.3%	9.2%	15.1%	0.9%	11.2%
Victoria	12.1%	14.8%	42.8%	11.1%	13.9%	1.8%	3.5%

Rows may not total 100% due to rounding

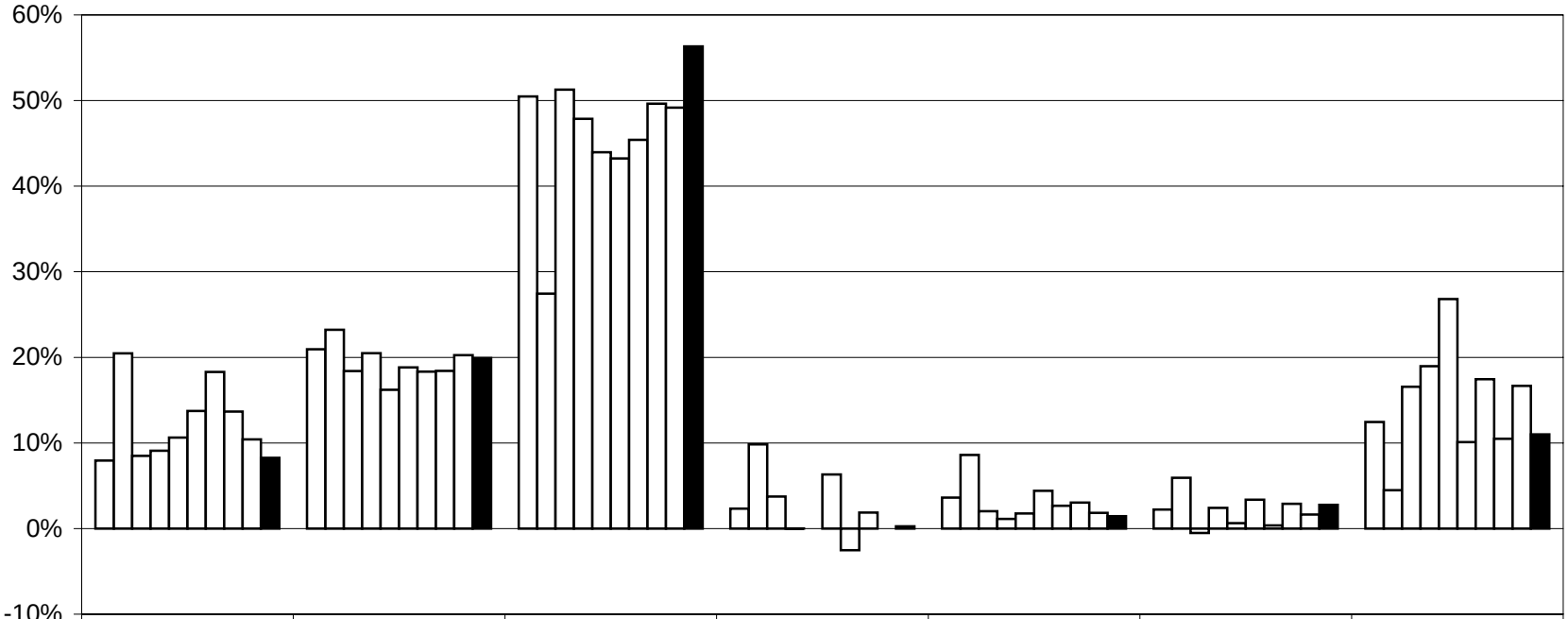
Figure 29: Distribution of Total Expenses
Major Rural Hospitals
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Dauphin	9.7%	18.7%	49.5%	9.6%	2.3%	0.2%	10.0%
Swan River	14.4%	20.5%	40.5%	6.5%	9.9%	-1.8%	10.0%
Flin Flon	10.3%	17.1%	34.2%	8.0%	13.4%	3.5%	13.6%
The Pas	9.9%	13.8%	36.5%	9.2%	14.1%	2.9%	13.6%
Portage	9.4%	17.5%	53.0%	5.1%	2.2%	2.0%	10.9%
Morden	10.9%	17.0%	35.6%	13.4%	12.6%	1.4%	9.1%
Bethel (Winkler)	12.6%	17.1%	50.6%	1.4%	6.1%	1.3%	10.8%
Bethesda (Steinbach)	11.5%	12.0%	39.2%	7.0%	14.7%	-1.1%	16.7%
Thompson	9.2%	34.3%	27.1%	4.4%	12.4%	1.1%	11.5%
Selkirk	13.1%	15.9%	36.3%	18.3%	3.1%	1.8%	11.5%

Rows may not total 100% due to rounding

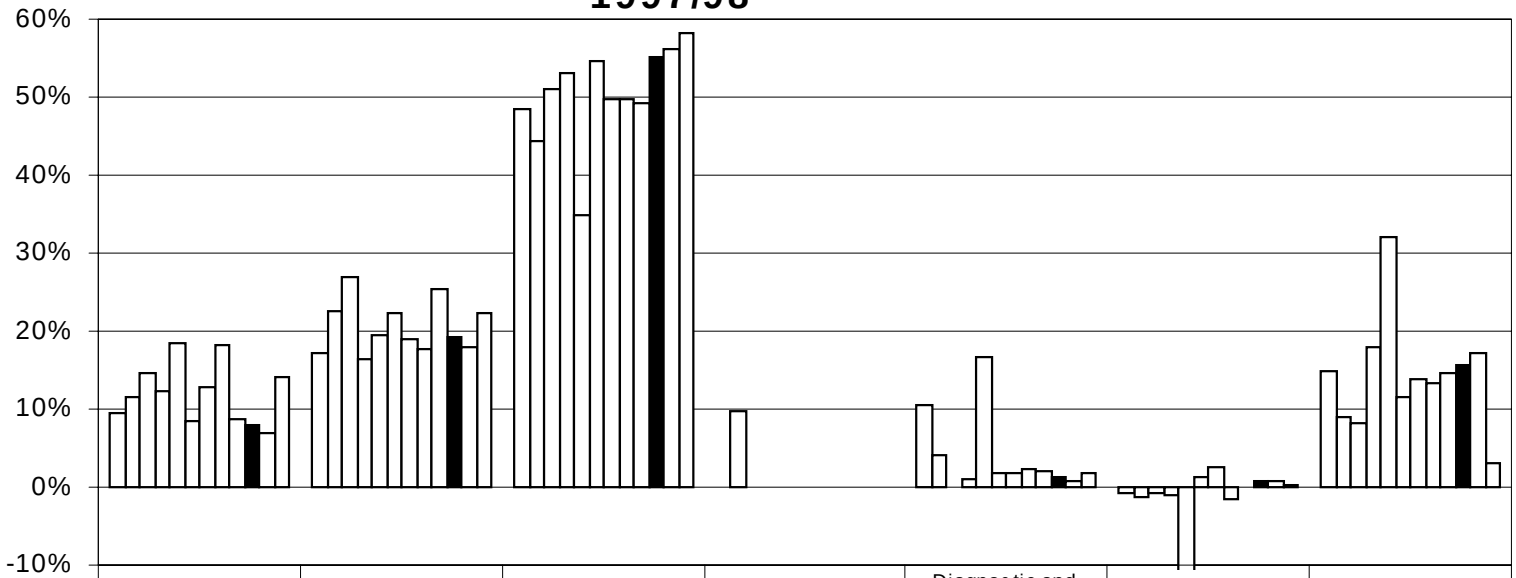
Figure 30: Distribution of Total Expenses
Intermediate Rural Hospitals
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
☐ Johnson (Gimli)	7.9%	20.9%	50.5%	2.3%	3.6%	2.2%	12.4%
☐ Churchill	20.5%	23.2%	27.4%	9.8%	8.6%	5.9%	4.5%
☐ Neepawa	8.5%	18.4%	51.3%	3.7%	2.0%	-0.5%	16.6%
☐ Minnedosa	9.1%	20.5%	47.9%	0.0%	1.1%	2.4%	19.0%
☐ Virden	10.6%	16.2%	44.0%	0.0%	1.8%	0.6%	26.8%
☐ Ste Rose	13.7%	18.8%	43.2%	6.3%	4.4%	3.4%	10.1%
☐ Souris	18.3%	18.3%	45.4%	-2.5%	2.7%	0.4%	17.4%
☐ Carman	13.7%	18.4%	49.6%	1.9%	3.0%	2.9%	10.5%
☐ Altona	10.4%	20.3%	49.2%	0.0%	1.8%	1.6%	16.7%
■ Beausejour	8.3%	19.9%	56.3%	0.3%	1.4%	2.8%	11.0%

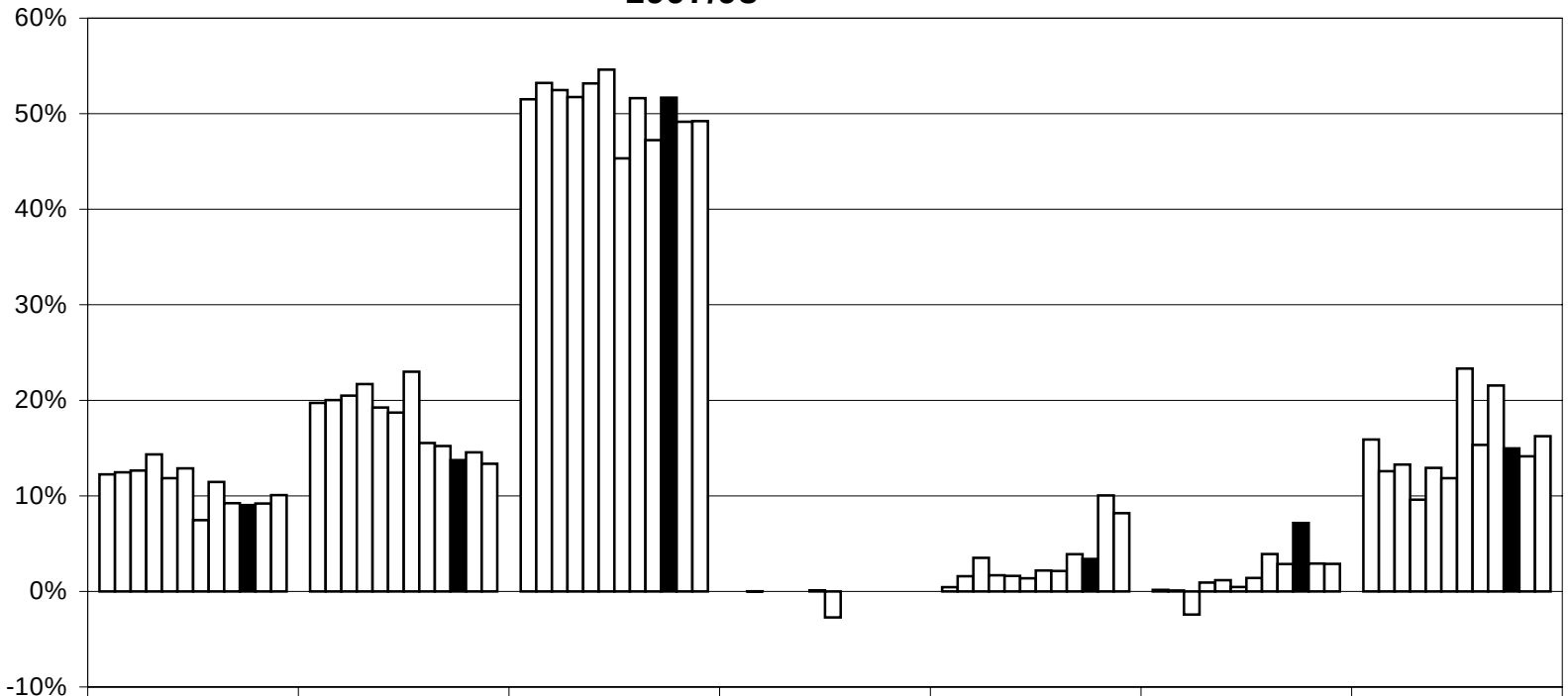
Rows may not total 100% due to rounding

Figure 31: Distribution of Total Expenses
Small Rural Hospitals - Page 1
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Arborg	9.6%	17.1%	48.5%	0.1%	10.6%	-0.9%	15.0%
Pine Falls	11.7%	22.6%	44.2%	9.7%	4.1%	-1.4%	9.1%
Grandview	14.7%	26.8%	51.0%	0.0%	0.1%	-0.8%	8.3%
Winnipegosis	12.4%	16.4%	53.1%	0.0%	1.1%	-1.1%	18.1%
Vita	18.4%	19.5%	34.9%	0.0%	16.7%	-21.5%	32.0%
Roblin	8.3%	22.3%	54.7%	0.0%	1.8%	1.3%	11.6%
Hamiota	12.9%	18.9%	49.9%	0.0%	1.9%	2.6%	13.8%
Shoal Lake	18.1%	17.7%	49.8%	0.1%	2.4%	-1.5%	13.3%
Ericksdon	8.7%	25.5%	49.1%	0.0%	2.2%	-0.1%	14.6%
Deloraine	8.0%	19.1%	55.1%	0.0%	1.4%	0.9%	15.5%
Melita	6.9%	18.0%	56.2%	0.0%	0.8%	0.9%	17.3%
EM Crowe (Eriksdale)	14.2%	22.4%	58.1%	0.0%	1.8%	0.3%	3.2%

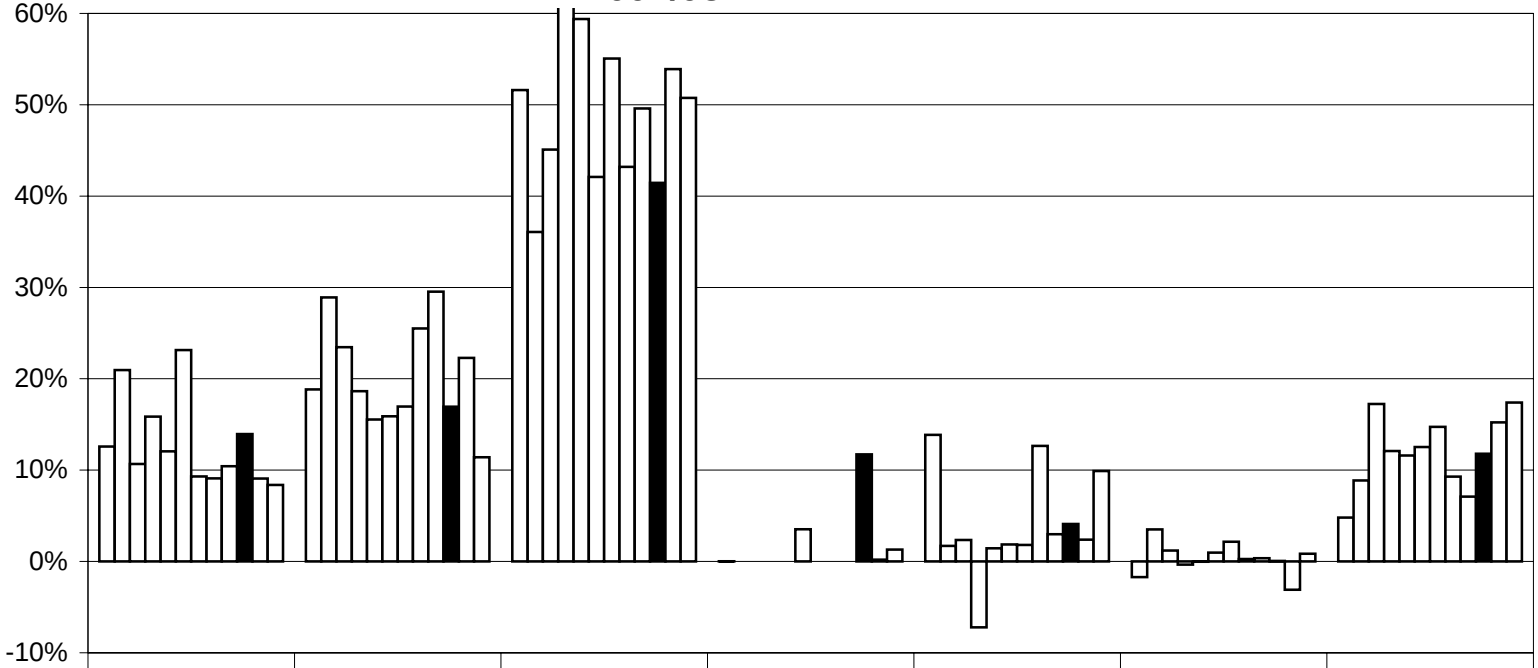
Figure 31: Distribution of Total Expenses
Small Rural Hospitals - Page 2
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
☐ Riverdale (Rivers)	12.3%	19.7%	51.5%	0.0%	0.5%	0.2%	15.9%
☐ Russell	12.5%	20.0%	53.2%	0.0%	1.6%	0.1%	12.6%
☐ Birtle	12.7%	20.5%	52.5%	0.0%	3.5%	-2.4%	13.3%
☐ Lorne (Swan Lake)	14.3%	21.7%	51.7%	0.0%	1.7%	0.9%	9.6%
☐ Rock Lake (Crystal City)	11.9%	19.2%	53.2%	0.0%	1.6%	1.2%	12.9%
☐ McCreary	12.9%	18.7%	54.6%	0.1%	1.4%	0.5%	11.9%
☐ Boissevain	7.5%	23.0%	45.3%	-2.7%	2.2%	1.4%	23.3%
☐ Tiger Hills (Treherne)	11.5%	15.5%	51.6%	0.0%	2.1%	3.9%	15.3%
☐ Tri-Lake (Killarney)	9.2%	15.2%	47.2%	0.0%	3.9%	2.9%	21.6%
■ Baldur	9.0%	13.7%	51.7%	0.0%	3.4%	7.2%	15.0%
☐ Glenboro	9.2%	14.6%	49.2%	0.0%	10.0%	2.9%	14.1%
☐ Wawanesa	10.1%	13.4%	49.2%	0.0%	8.2%	2.9%	16.2%

Rows may not total 100% due to rounding

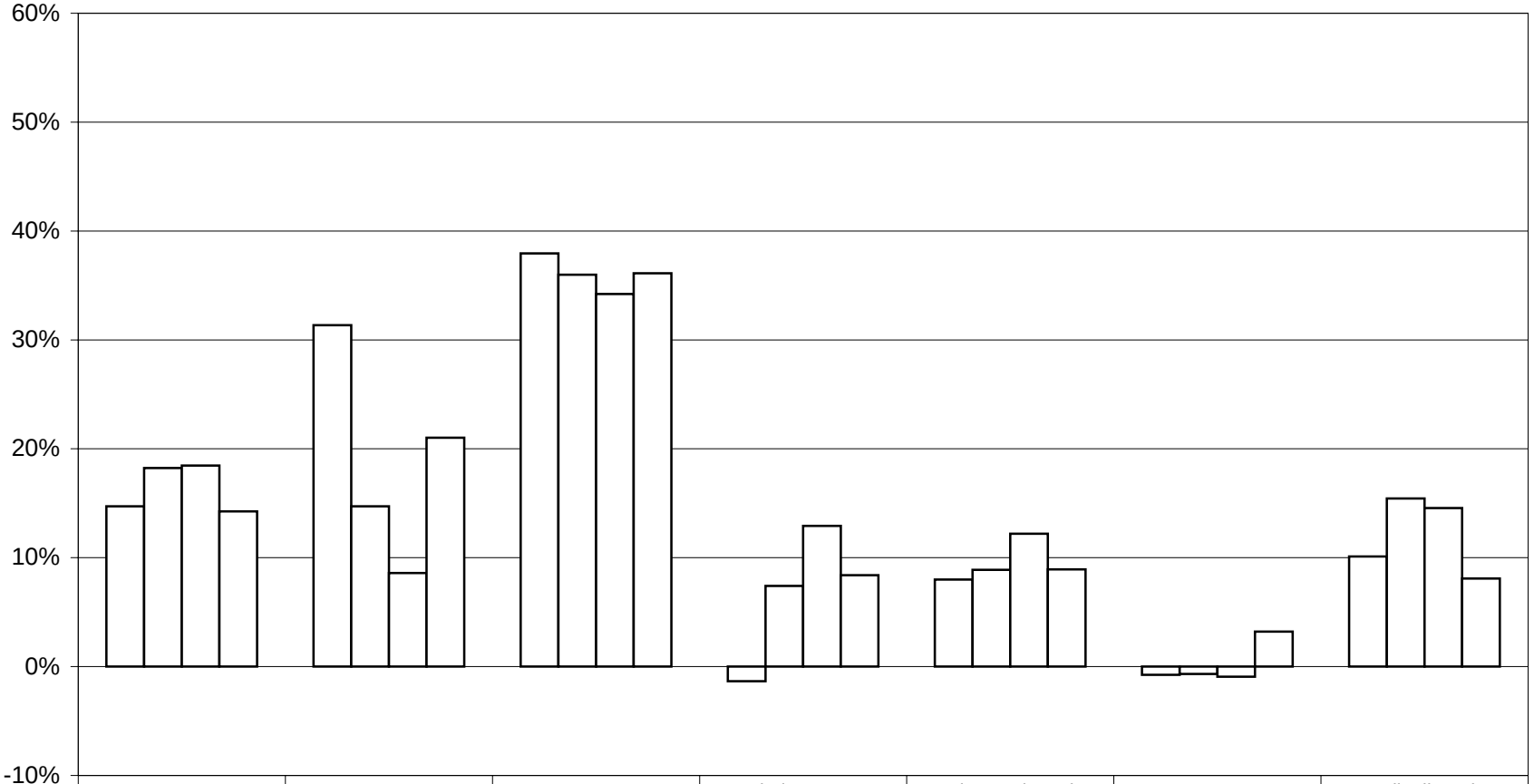
Figure 31: Distribution of Total Expenses
Small Rural Hospitals - Page 3
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
☐ Lakeshore (Ashern)	12.6%	18.8%	51.6%	0.0%	13.9%	-1.7%	4.8%
☐ Seven Regions (Gladstone)	21.0%	28.9%	36.1%	0.0%	1.7%	3.5%	8.9%
☐ Carberry	10.7%	23.5%	45.1%	0.0%	2.4%	1.2%	17.2%
☐ Notre Dame	15.9%	18.6%	61.0%	0.0%	-7.2%	-0.3%	12.1%
☐ St Claude	12.1%	15.5%	59.4%	0.0%	1.4%	0.0%	11.6%
☐ Morris	23.1%	15.9%	42.1%	3.5%	1.9%	1.0%	12.5%
☐ Emerson	9.3%	17.0%	55.1%	0.0%	1.8%	2.2%	14.7%
☐ Desalaberry (St Pierre-Jolys)	9.1%	25.5%	43.2%	0.0%	12.7%	0.3%	9.3%
☐ Pinawa	10.4%	29.5%	49.6%	0.0%	3.0%	0.3%	7.1%
■ Hunter (Teulon)	14.0%	16.9%	41.4%	11.7%	4.1%	0.0%	11.8%
☐ Stonewall	9.1%	22.3%	53.9%	0.2%	2.4%	-3.1%	15.2%
☐ Ste Anne	8.4%	11.4%	50.8%	1.3%	9.9%	0.9%	17.4%

Rows may not total 100% due to rounding

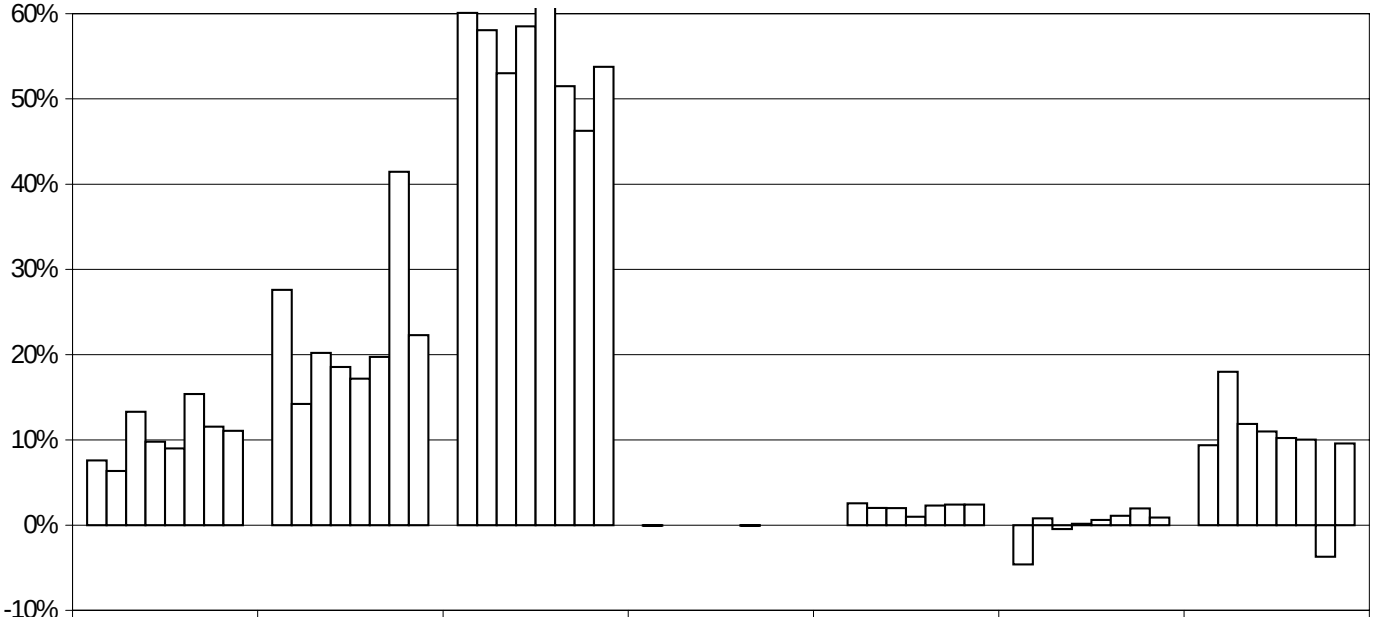
Figure 32: Distribution of Total Expenses
Northern Isolated Hospitals
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Snow Lake	14.7%	31.3%	37.9%	-1.3%	8.0%	-0.8%	10.1%
Lynn Lake	18.2%	14.7%	36.0%	7.4%	8.9%	-0.7%	15.4%
Leaf Rapids	18.5%	8.6%	34.2%	12.9%	12.2%	-0.9%	14.6%
Gillam	14.3%	21.0%	36.1%	8.4%	8.9%	3.2%	8.1%

Rows may not total 100% due to rounding

Figure 33: Distribution of Total Expenses
Small Multi-Use Facilities
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Benito	7.6%	27.6%	60.1%	-0.1%	0.0%	-4.6%	9.4%
Reston	6.4%	14.2%	58.1%	0.0%	2.6%	0.8%	18.0%
Rossburn	13.3%	20.2%	53.0%	0.0%	2.0%	-0.5%	11.9%
Pembina Manitou	9.8%	18.6%	58.5%	0.0%	2.0%	0.2%	11.0%
Hartney	9.0%	17.2%	62.0%	0.0%	1.0%	0.6%	10.2%
Cartwright	15.4%	19.7%	51.5%	-0.1%	2.3%	1.1%	10.0%
MacGregor	11.6%	41.5%	46.3%	0.0%	2.4%	2.0%	-3.7%
Whitemouth	11.1%	22.3%	53.8%	0.0%	2.4%	0.9%	9.6%

Rows may not total 100% due to rounding

Table 7: Proportion of Total Expenses by Functional Centre, 1997/98*

	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Teaching Hospitals							
Health Sciences Centre	9.5%	12.3%	40.5%	14.6%	20.9%	0.6%	1.5%
St Boniface	10.5%	10.7%	42.2%	12.9%	18.3%	2.1%	3.4%
Urban Community Hospitals							
Brandon	12.5%	14.0%	41.6%	11.1%	13.7%	2.7%	4.4%
Concordia	15.2%	12.4%	36.2%	14.3%	15.2%	1.0%	5.7%
Salvation Army Grace	10.8%	12.7%	42.8%	11.3%	15.1%	2.9%	4.3%
Seven Oaks	13.6%	13.7%	36.3%	9.2%	15.1%	0.9%	11.2%
Victoria	12.1%	14.8%	42.8%	11.1%	13.9%	1.8%	3.5%
Major Rural Hospitals							
Bethel (Winkler)	12.7%	17.1%	50.6%	1.4%	6.1%	1.3%	10.8%
Bethesda (Steinbach)	11.5%	12.0%	39.2%	7.0%	14.8%	-1.1%	16.7%
Dauphin	9.7%	18.7%	49.5%	9.6%	2.3%	0.2%	10.0%
Flin Flon	10.3%	17.1%	34.2%	8.0%	13.4%	3.5%	13.6%
Morden	10.9%	17.0%	35.6%	13.5%	12.6%	1.4%	9.1%
Portage	9.4%	17.5%	53.0%	5.1%	2.2%	2.0%	10.9%
Selkirk	13.1%	15.9%	36.3%	18.3%	3.1%	1.8%	11.5%
Swan River	14.4%	20.5%	40.5%	6.5%	9.9%	-1.8%	10.0%
The Pas	9.9%	13.8%	36.5%	9.2%	14.1%	2.9%	13.6%
Thompson	9.2%	34.3%	27.1%	4.4%	12.4%	1.1%	11.5%
Intermediate Rural Hospitals							
Altona	10.4%	20.3%	49.2%	0.0%	1.8%	1.7%	16.7%
Beausejour	8.3%	19.9%	56.3%	0.3%	1.5%	2.8%	11.0%
Carman	13.7%	18.4%	49.6%	1.9%	3.0%	2.9%	10.5%
Churchill	20.5%	23.2%	27.5%	9.8%	8.6%	5.9%	4.5%
Johnson (Gimli)	8.0%	21.0%	50.5%	2.3%	3.6%	2.2%	12.5%
Minnedosa	9.1%	20.5%	47.9%	0.0%	1.1%	2.4%	19.0%
Neepawa	8.5%	18.4%	51.3%	3.8%	2.0%	-0.5%	16.6%
Souris	18.3%	18.3%	45.4%	-2.5%	2.7%	0.4%	17.4%
Ste Rose	13.7%	18.8%	43.2%	6.3%	4.4%	3.4%	10.1%
Virden	10.6%	16.2%	44.0%	0.0%	1.8%	0.6%	26.8%
Small Rural Hospitals							
Arborg	9.6%	17.1%	48.5%	0.1%	10.6%	-0.9%	15.0%
Baldur	9.0%	13.8%	51.7%	0.0%	3.4%	7.2%	15.0%
Birtle	12.7%	20.5%	52.5%	0.0%	3.5%	-2.4%	13.3%
Boissevain	7.5%	23.0%	45.3%	-2.7%	2.2%	1.4%	23.3%
Carberry	10.7%	23.5%	45.1%	0.0%	2.4%	1.2%	17.2%
Deloraine	8.0%	19.1%	55.1%	0.0%	1.4%	0.9%	15.5%

*Rows may not total 100% due to rounding

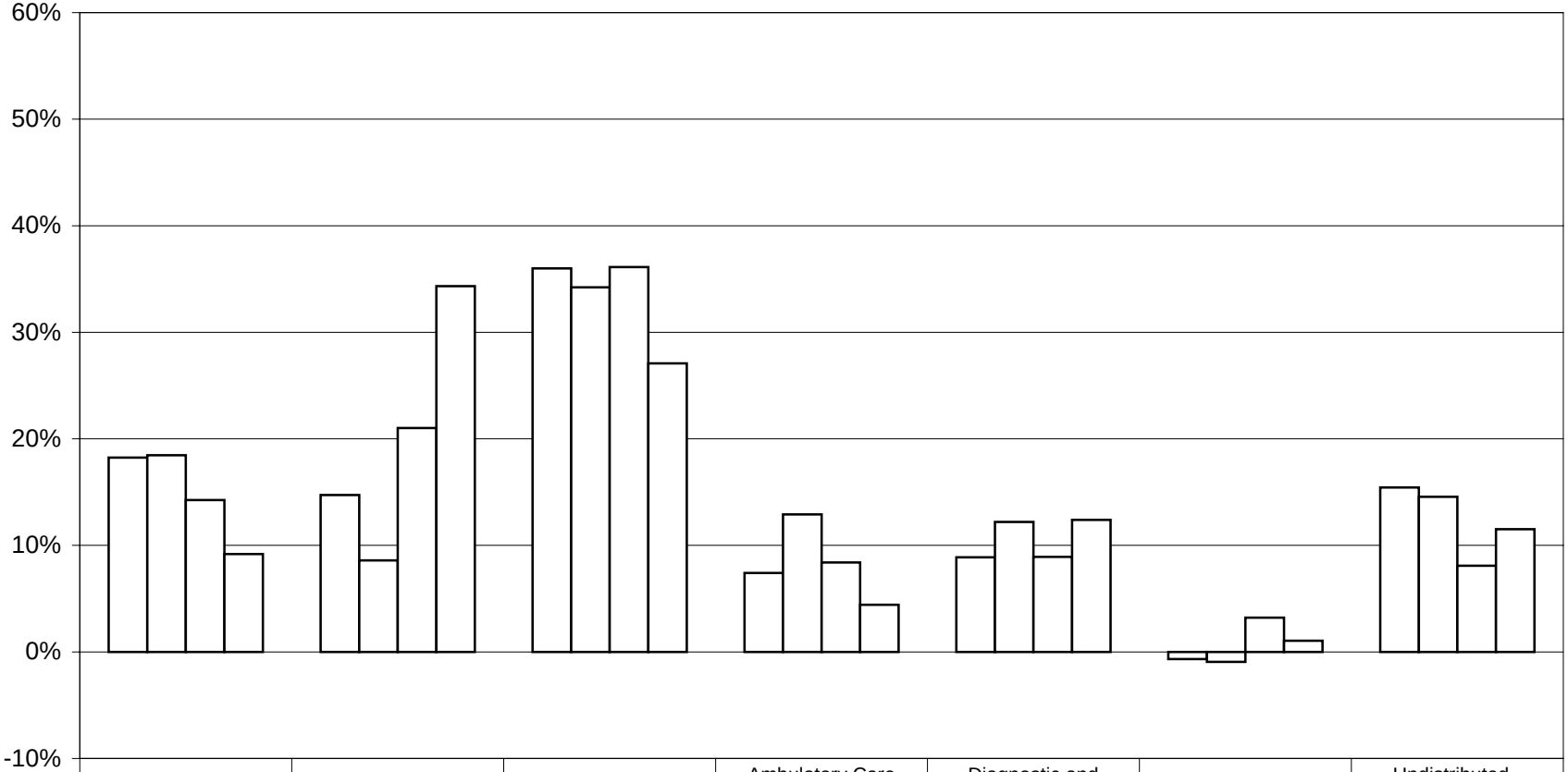
	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Desalaberry (St Pierre-Jolys)	9.1%	25.5%	43.2%	0.0%	12.7%	0.3%	9.3%
EM Crowe (Eriksdale)	14.2%	22.4%	58.1%	0.0%	1.8%	0.3%	3.2%
Emerson	9.3%	17.0%	55.1%	0.0%	1.8%	2.2%	14.7%
Erickson	8.7%	25.5%	49.1%	0.0%	2.2%	-0.1%	14.6%
Glenboro	9.2%	14.6%	49.2%	0.0%	10.0%	2.9%	14.1%
Grandview	14.7%	26.8%	51.0%	0.0%	0.1%	-0.9%	8.3%
Hamiota	12.9%	18.9%	49.9%	0.0%	1.9%	2.6%	13.8%
Hunter (Teulon)	14.0%	16.9%	41.4%	11.7%	4.1%	0.1%	11.8%
Lakeshore (Ashern)	12.6%	18.8%	51.6%	0.0%	13.9%	-1.7%	4.8%
Lorne (Swan Lake)	14.3%	21.7%	51.8%	0.0%	1.7%	0.9%	9.6%
McCreary	12.9%	18.7%	54.6%	0.1%	1.4%	0.5%	11.9%
Melita	6.9%	18.0%	56.2%	0.0%	0.8%	0.9%	17.3%
Morris	23.1%	15.9%	42.1%	3.5%	1.9%	1.0%	12.5%
Notre Dame	15.9%	18.6%	61.0%	0.0%	-7.2%	-0.3%	12.1%
Pinawa	10.4%	29.6%	49.6%	0.0%	3.0%	0.4%	7.1%
Pine Falls	11.7%	22.6%	44.2%	9.7%	4.1%	-1.4%	9.1%
Riverdale (Rivers)	12.3%	19.7%	51.5%	0.0%	0.5%	0.2%	15.9%
Roblin	8.4%	22.3%	54.7%	0.0%	1.8%	1.3%	11.6%
Rock Lake (Crystal City)	11.9%	19.2%	53.2%	0.0%	1.6%	1.2%	12.9%
Russell	12.5%	20.0%	53.2%	0.0%	1.6%	0.1%	12.6%
Seven Regions (Gladstone)	21.0%	28.9%	36.1%	0.0%	1.7%	3.5%	8.9%
Shoal Lake	18.1%	17.7%	49.8%	0.1%	2.4%	-1.5%	13.3%
St Claude	12.1%	15.6%	59.4%	0.0%	1.4%	0.0%	11.6%
Ste Anne	8.4%	11.4%	50.8%	1.3%	9.9%	0.9%	17.4%
Stonewall	9.1%	22.3%	53.9%	0.2%	2.4%	-3.1%	15.2%
Tiger Hills (Treherne)	11.5%	15.5%	51.6%	0.0%	2.1%	3.9%	15.3%
Tri-Lake (Killarney)	9.2%	15.2%	47.2%	0.0%	3.9%	2.9%	21.6%
Vita	18.4%	19.5%	35.0%	0.0%	16.7%	-21.5%	32.0%
Wawanesa	10.1%	13.4%	49.2%	0.0%	8.2%	2.9%	16.3%
Winnipegosis	12.4%	16.4%	53.1%	0.0%	1.1%	-1.1%	18.1%
Northern Isolated Hospitals							
Gillam	14.3%	21.0%	36.1%	8.4%	8.9%	3.2%	8.1%
Leaf Rapids	18.5%	8.6%	34.2%	12.9%	12.2%	-0.9%	14.6%
Lynn Lake	18.2%	14.7%	36.0%	7.4%	8.9%	-0.7%	15.4%
Snow Lake	14.7%	31.4%	38.0%	-1.4%	8.0%	-0.8%	10.1%
Small Multi-use Facilities							
Benito	7.6%	27.6%	60.1%	-0.1%	0.0%	-4.6%	9.4%
MacGregor	11.6%	41.5%	46.3%	0.0%	2.4%	2.0%	-3.7%
Pembina Manitou	9.8%	18.6%	58.5%	0.0%	2.0%	0.2%	11.0%
Reston	6.4%	14.2%	58.1%	0.0%	2.6%	0.8%	18.0%
Rossburn	13.3%	20.2%	53.0%	0.0%	2.0%	-0.5%	11.9%
Whitemouth	11.1%	22.3%	53.8%	0.0%	2.4%	0.9%	9.6%

APPENDIX F-4

Proportional Distribution of Expenses by Regional Health Authority

In this appendix, hospitals are grouped according to the Regional Health Authority in which they are located, rather than by type of facility as appeared in Appendix F-3. The comments that were made at the start of Appendix F-3 continue to be relevant here, and will not be repeated. This appendix will allow administrators and managers in the RHAs to review the hospitals in their region, and for the hospital administrators and managers to see how they compare with the facilities in neighboring communities.

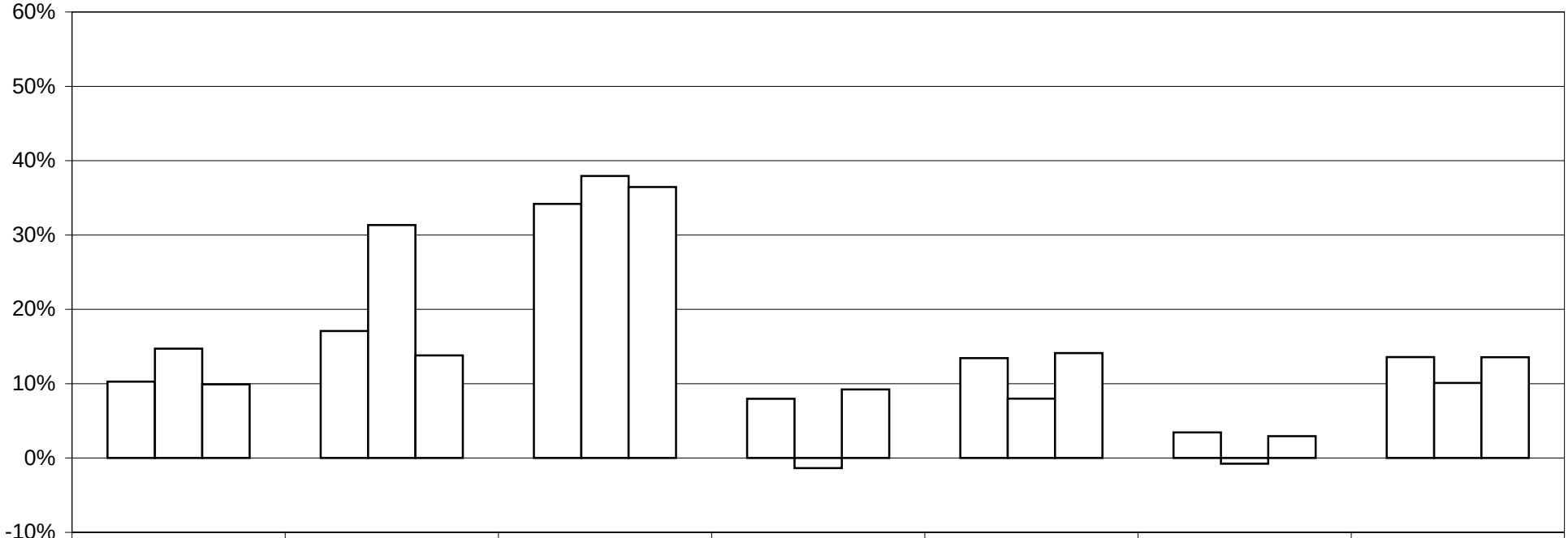
Figure 34: Distribution of Total Expenses
Burntwood RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Lynn Lake	0.182361441	0.147246753	0.359925361	0.074059482	0.088825534	-0.006760176	0.154341606
Leaf Rapids	0.184590963	0.085867411	0.34212234	0.129140489	0.122020579	-0.009339471	0.145597688
Gillam	0.142517757	0.210114222	0.361162907	0.08393968	0.089278924	0.032141934	0.080844576
Thompson	0.0919291	0.343254373	0.270873079	0.04431426	0.123959784	0.010506345	0.115163059

Rows may not total 100% due to rounding

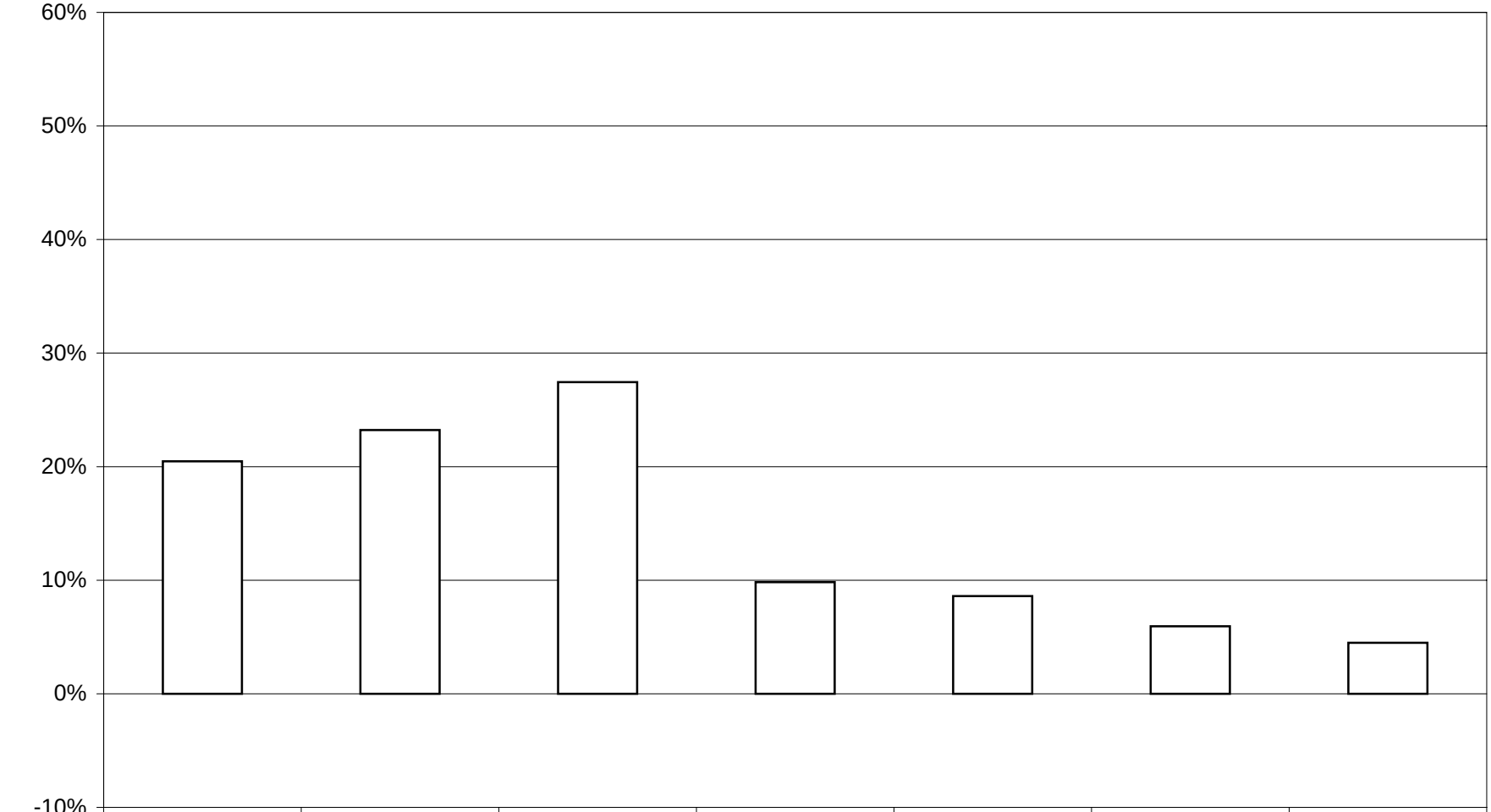
Figure 35: Distribution of Total Expenses
Nor-Man RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Flin Flon	10.3%	17.1%	34.2%	8.0%	13.4%	3.5%	13.6%
Snow Lake	14.7%	31.3%	37.9%	-1.3%	8.0%	-0.8%	10.1%
The Pas	9.9%	13.8%	36.5%	9.2%	14.1%	2.9%	13.6%

Rows may not total 100% due to rounding

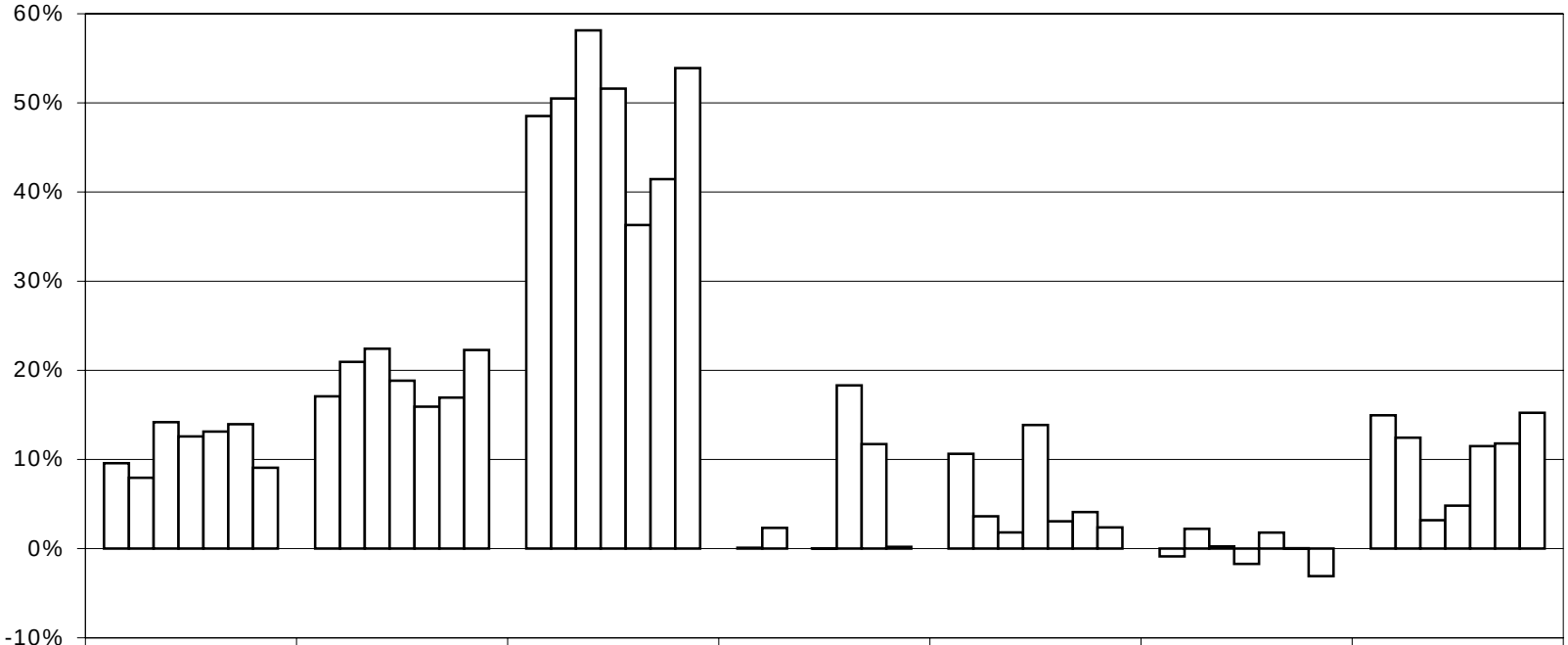
Figure 36: Distribution of Total Expenses
Churchill RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Churchill	20.5%	23.2%	27.4%	9.8%	8.6%	5.9%	4.5%

Rows may not total 100% due to rounding

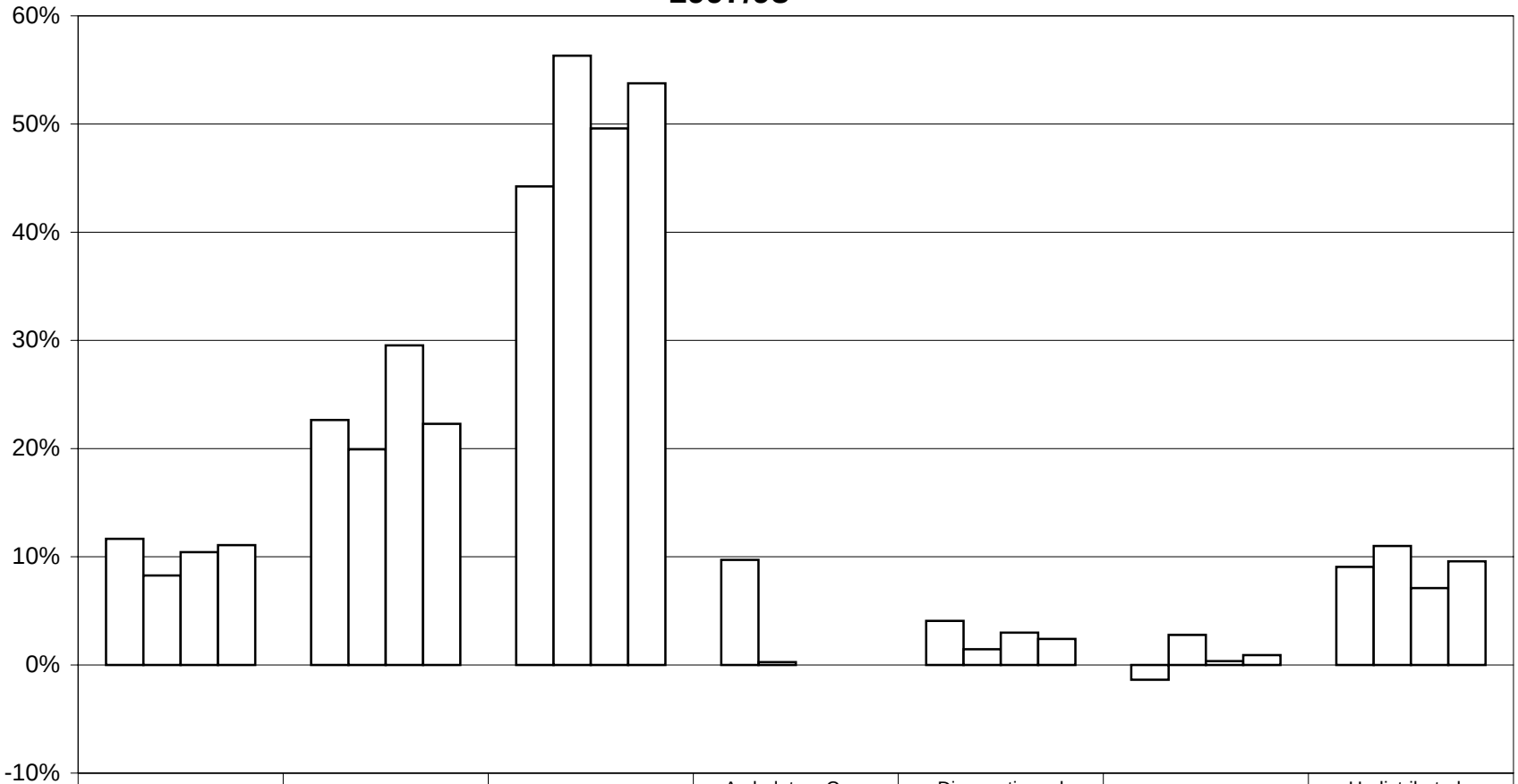
Figure 37: Distribution of Total Expenses
Interlake RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Arborg	9.6%	17.1%	48.5%	0.1%	10.6%	-0.9%	15.0%
Johnson (Gimli)	7.9%	20.9%	50.5%	2.3%	3.6%	2.2%	12.4%
EM Crowe (Eriksdale)	14.2%	22.4%	58.1%	0.0%	1.8%	0.3%	3.2%
Lakeshore (Ashern)	12.6%	18.8%	51.6%	0.0%	13.9%	-1.7%	4.8%
Selkirk	13.1%	15.9%	36.3%	18.3%	3.1%	1.8%	11.5%
Hunter (Teulon)	14.0%	16.9%	41.4%	11.7%	4.1%	0.0%	11.8%
Stonewall	9.1%	22.3%	53.9%	0.2%	2.4%	-3.1%	15.2%

Rows may not total 100% due to rounding

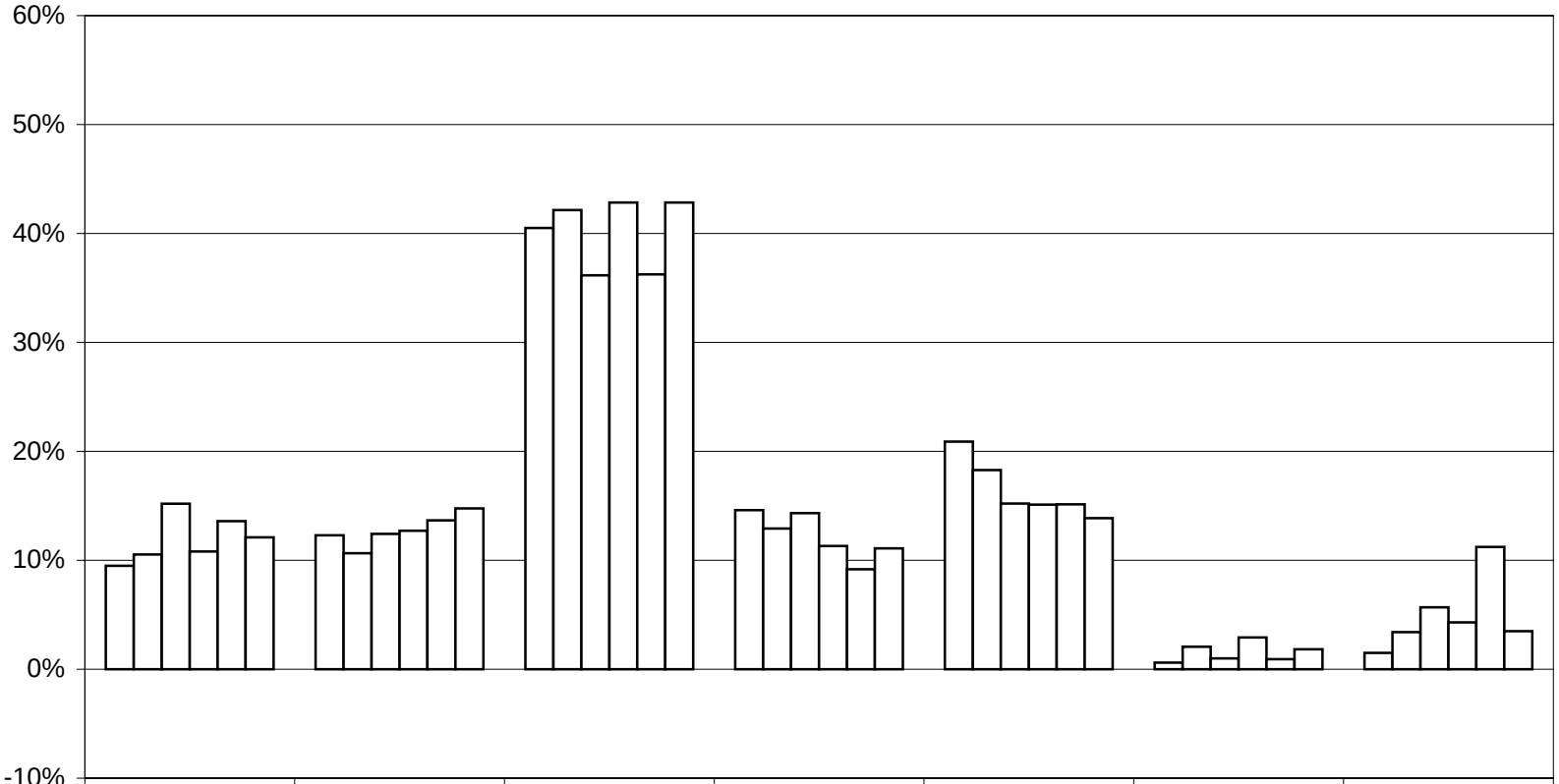
Figure 38: Distribution of Total Expenses
North Eastman RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Pine Falls	0.116537553	0.226400619	0.44231039	0.097060582	0.040757803	-0.013687322	0.090620376
Beausejour	0.082645109	0.199290068	0.56326482	0.00263813	0.014475563	0.027686061	0.110000249
Pinawa	0.10419596	0.295450565	0.495980377	0	0.029844189	0.003478703	0.071050206
Whitemouth	0.110704157	0.222817002	0.537607817	0	0.0240291	0.009013521	0.095828403

Rows may not total 100% due to rounding

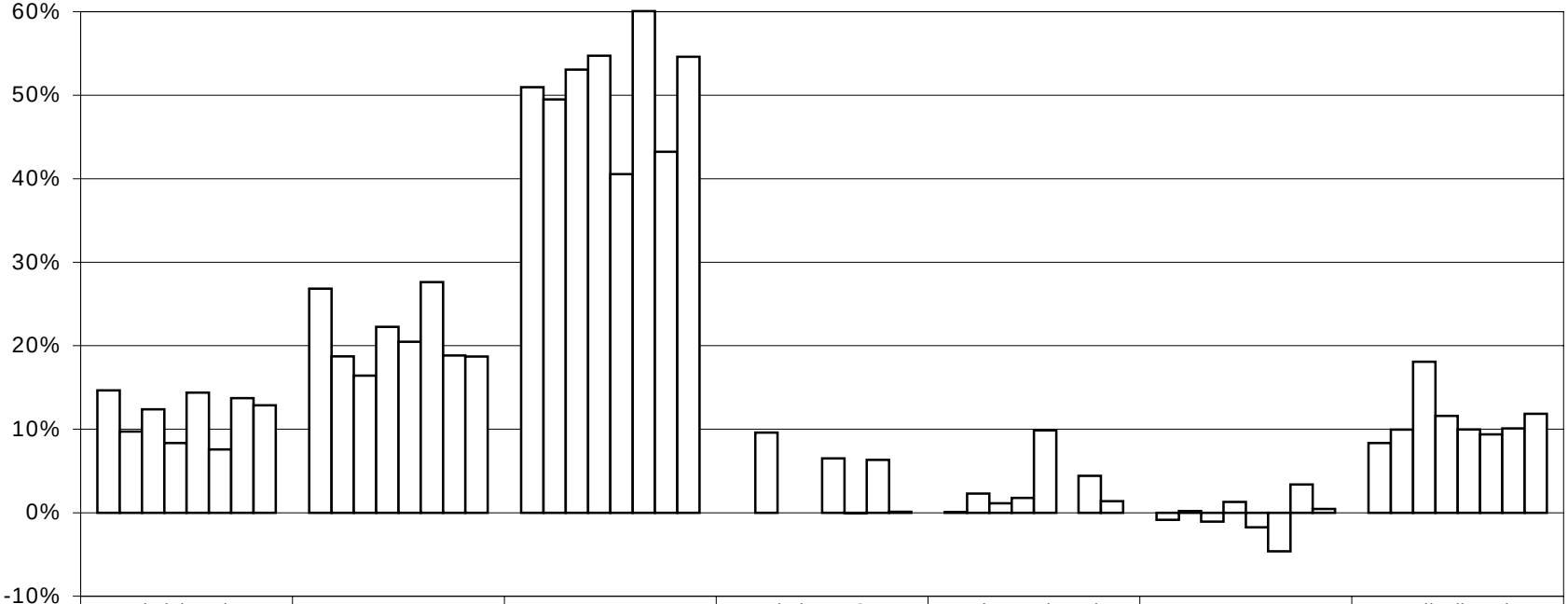
Figure 39: Distribution of Total Expenses
Winnipeg RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Health Sciences Centre	9.5%	12.3%	40.5%	14.6%	20.9%	0.6%	1.5%
St Boniface	10.5%	10.7%	42.2%	12.9%	18.3%	2.1%	3.4%
Concordia	15.2%	12.4%	36.2%	14.3%	15.2%	1.0%	5.7%
Salvation Army Grace	10.8%	12.7%	42.8%	11.3%	15.1%	2.9%	4.3%
Seven Oaks	13.6%	13.7%	36.3%	9.2%	15.1%	0.9%	11.2%
Victoria	12.1%	14.8%	42.8%	11.1%	13.9%	1.8%	3.5%

Rows may not total 100% due to rounding

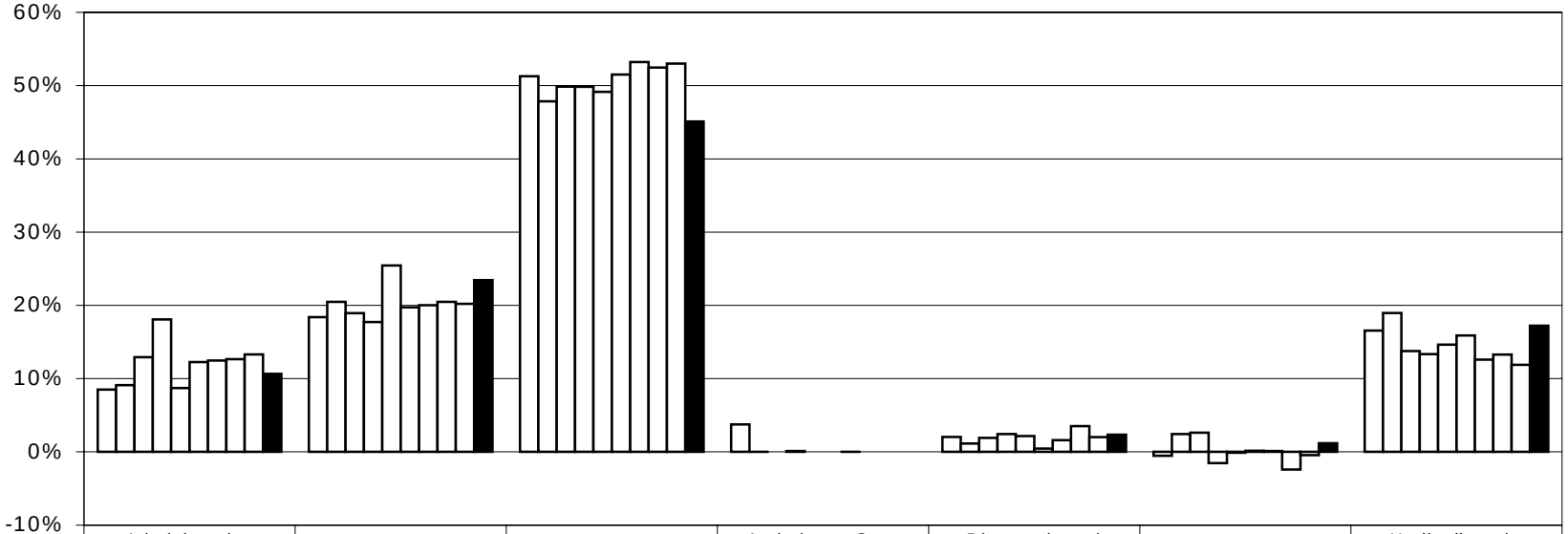
Figure 40: Distribution of Total Expenses
Parkland RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Grandview	14.7%	26.8%	51.0%	0.0%	0.1%	-0.8%	8.3%
Dauphin	9.7%	18.7%	49.5%	9.6%	2.3%	0.2%	10.0%
Winnipegosis	12.4%	16.4%	53.1%	0.0%	1.1%	-1.1%	18.1%
Roblin	8.3%	22.3%	54.7%	0.0%	1.8%	1.3%	11.6%
Swan River	14.4%	20.5%	40.5%	6.5%	9.9%	-1.8%	10.0%
Benito	7.6%	27.6%	60.1%	-0.1%	0.0%	-4.6%	9.4%
Ste Rose	13.7%	18.8%	43.2%	6.3%	4.4%	3.4%	10.1%
McCreary	12.9%	18.7%	54.6%	0.1%	1.4%	0.5%	11.9%

Rows may not total 100% due to rounding

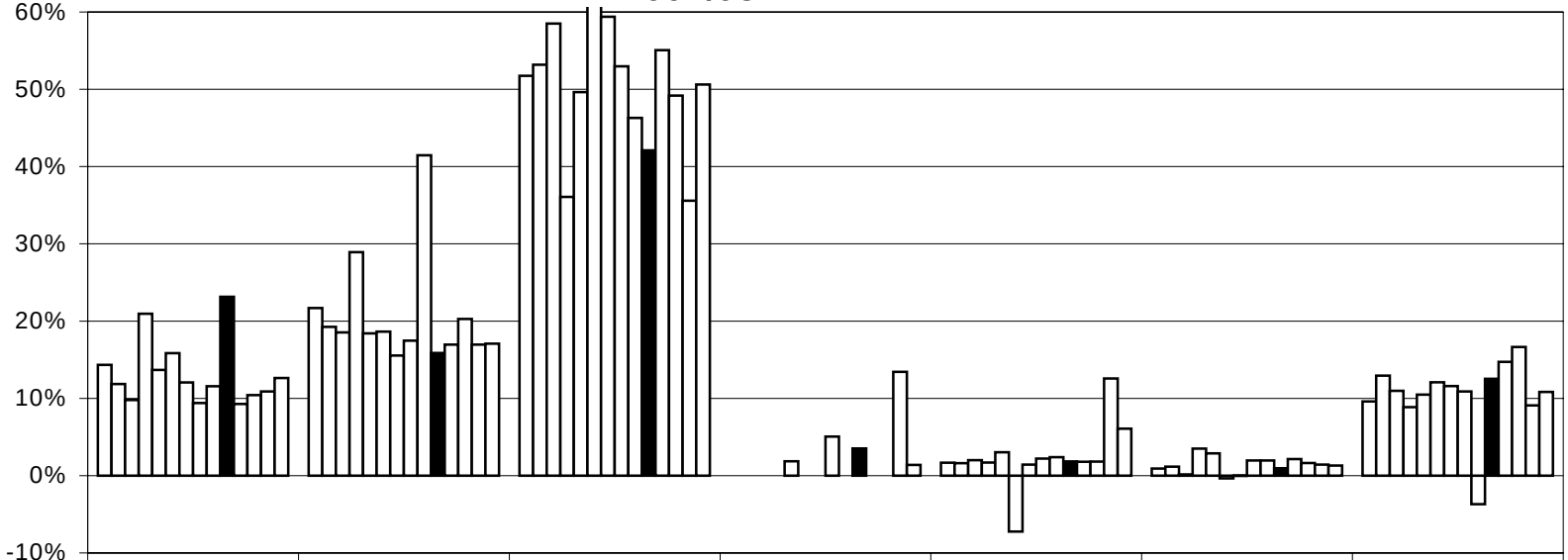
Figure 41: Distribution of Total Expenses
Marquette RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Neepawa	8.5%	18.4%	51.3%	3.7%	2.0%	-0.5%	16.6%
Minnedosa	9.1%	20.5%	47.9%	0.0%	1.1%	2.4%	19.0%
Hamiota	12.9%	18.9%	49.9%	0.0%	1.9%	2.6%	13.8%
Shoal Lake	18.1%	17.7%	49.8%	0.1%	2.4%	-1.5%	13.3%
Erickson	8.7%	25.5%	49.1%	0.0%	2.2%	-0.1%	14.6%
Riverdale (Rivers)	12.3%	19.7%	51.5%	0.0%	0.5%	0.2%	15.9%
Russell	12.5%	20.0%	53.2%	0.0%	1.6%	0.1%	12.6%
Birtle	12.7%	20.5%	52.5%	0.0%	3.5%	-2.4%	13.3%
Rossburn	13.3%	20.2%	53.0%	0.0%	2.0%	-0.5%	11.9%
Carberry	10.7%	23.5%	45.1%	0.0%	2.4%	1.2%	17.2%

Rows may not total 100% due to rounding

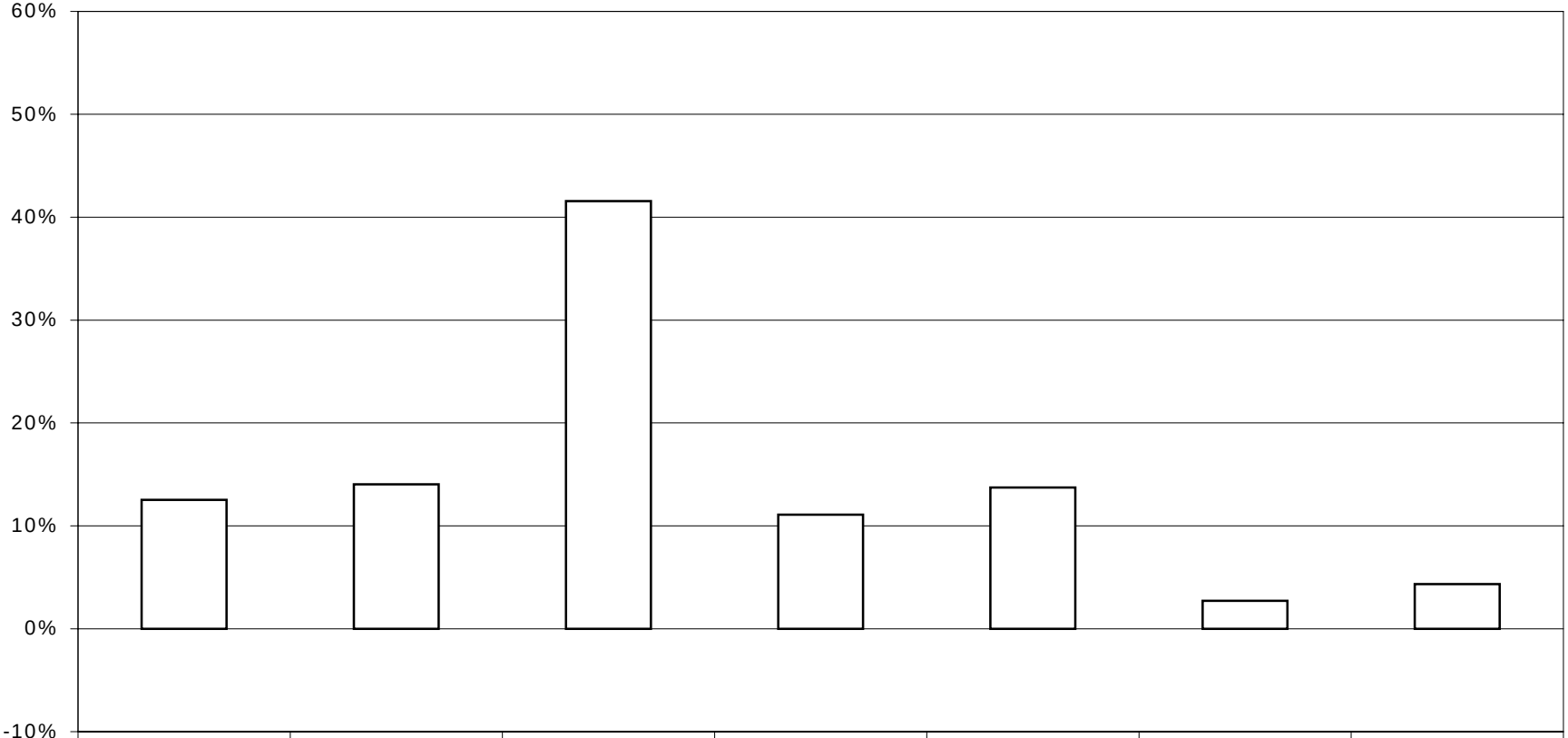
Figure 42: Distribution of Total Expenses
Central RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Lorne (Swan Lake)	14.3%	21.7%	51.7%	0.0%	1.7%	0.9%	9.6%
Rock Lake (Crystal City)	11.9%	19.2%	53.2%	0.0%	1.6%	1.2%	12.9%
Pembina Manitou	9.8%	18.6%	58.5%	0.0%	2.0%	0.2%	11.0%
Seven Regions (Gladstone)	21.0%	28.9%	36.1%	0.0%	1.7%	3.5%	8.9%
Carman	13.7%	18.4%	49.6%	1.9%	3.0%	2.9%	10.5%
Notre Dame	15.9%	18.6%	61.0%	0.0%	-7.2%	-0.3%	12.1%
St Claude	12.1%	15.5%	59.4%	0.0%	1.4%	0.0%	11.6%
Portage	9.4%	17.5%	53.0%	5.1%	2.2%	2.0%	10.9%
MacGregor	11.6%	41.5%	46.3%	0.0%	2.4%	2.0%	-3.7%
Morris	23.1%	15.9%	42.1%	3.5%	1.9%	1.0%	12.5%
Emerson	9.3%	17.0%	55.1%	0.0%	1.8%	2.2%	14.7%
Altona	10.4%	20.3%	49.2%	0.0%	1.8%	1.6%	16.7%
Morden	10.9%	17.0%	35.6%	13.4%	12.6%	1.4%	9.1%
Bethel (Winkler)	12.6%	17.1%	50.6%	1.4%	6.1%	1.3%	10.8%

Rows may not total 100% due to rounding

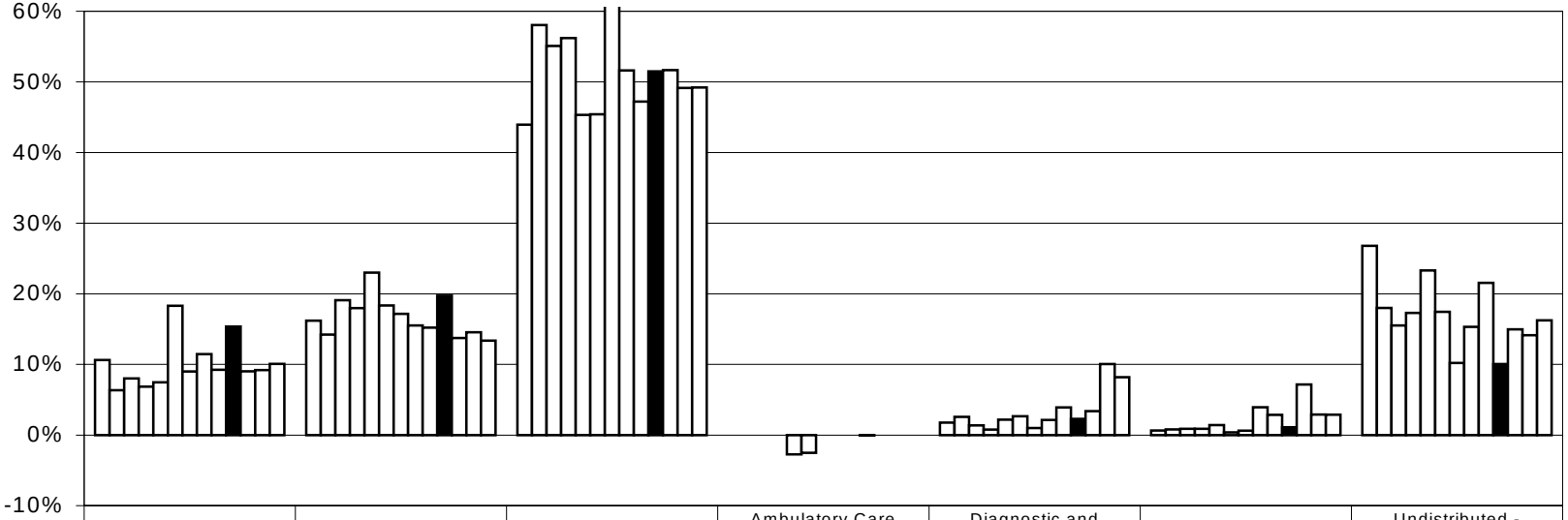
Figure 43: Distribution of Total Expenses
Brandon RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Brandon	12.5%	14.0%	41.6%	11.1%	13.7%	2.7%	4.4%

Rows may not total 100% due to rounding

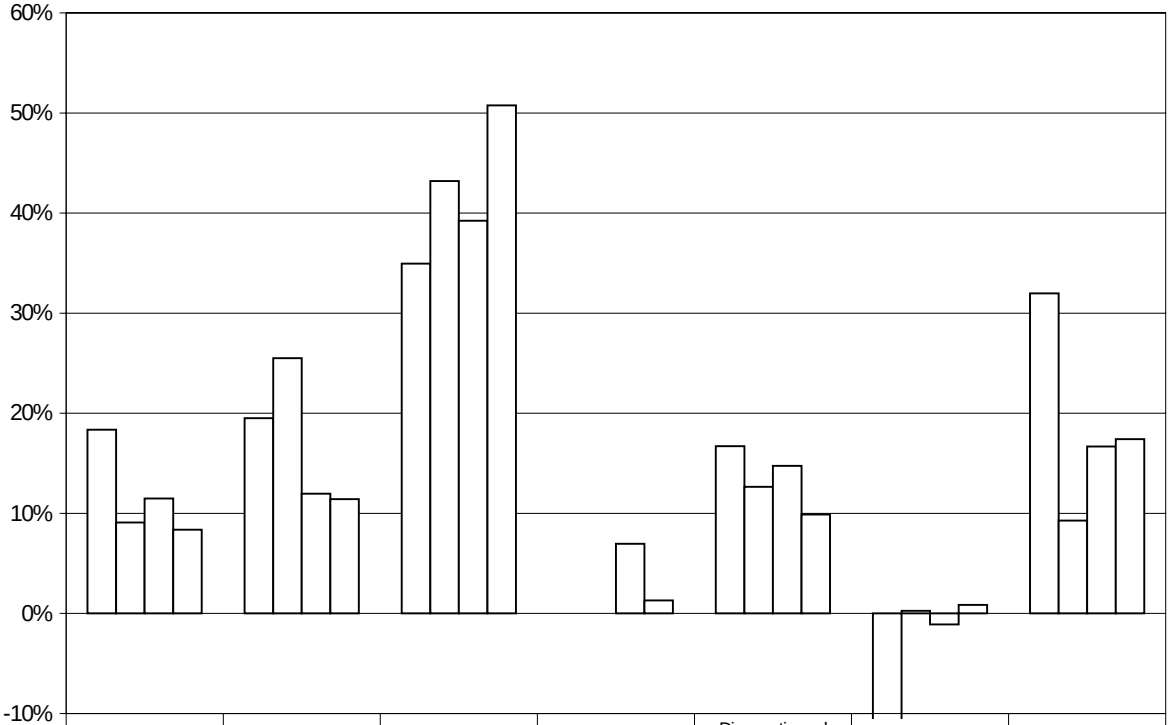
Figure 44: Distribution of Total Expenses
South Westman RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Virden	10.6%	16.2%	44.0%	0.0%	1.8%	0.6%	26.8%
Reston	6.4%	14.2%	58.1%	0.0%	2.6%	0.8%	18.0%
Deloraine	8.0%	19.1%	55.1%	0.0%	1.4%	0.9%	15.5%
Melita	6.9%	18.0%	56.2%	0.0%	0.8%	0.9%	17.3%
Boissevain	7.5%	23.0%	45.3%	-2.7%	2.2%	1.4%	23.3%
Souris	18.3%	18.3%	45.4%	-2.5%	2.7%	0.4%	17.4%
Hartney	9.0%	17.2%	62.0%	0.0%	1.0%	0.6%	10.2%
Tiger Hills (Treherne)	11.5%	15.5%	51.6%	0.0%	2.1%	3.9%	15.3%
Tri-Lake (Killarney)	9.2%	15.2%	47.2%	0.0%	3.9%	2.9%	21.6%
Cartwright	15.4%	19.7%	51.5%	-0.1%	2.3%	1.1%	10.0%
Baldur	9.0%	13.7%	51.7%	0.0%	3.4%	7.2%	15.0%
Glenboro	9.2%	14.6%	49.2%	0.0%	10.0%	2.9%	14.1%
Wawanesa	10.1%	13.4%	49.2%	0.0%	8.2%	2.9%	16.2%

Rows may not total 100% due to rounding

Figure 45: Distribution of Total Expenses
South Eastman RHA
1997/98



	Administrative Services	Support Services	Inpatient Services	Ambulatory Care Services	Diagnostic and Therapeutic Services	Other	Undistributed - Operating
Vita	18.4%	19.5%	34.9%	0.0%	16.7%	-21.5%	32.0%
Desalaberry (St Pierre-Jolys)	9.1%	25.5%	43.2%	0.0%	12.7%	0.3%	9.3%
Bethesda (Steinbach)	11.5%	12.0%	39.2%	7.0%	14.7%	-1.1%	16.7%
Ste Anne	8.4%	11.4%	50.8%	1.3%	9.9%	0.9%	17.4%

Rows may not total 100% due to rounding

APPENDIX F-5

Cost Per Weighted Case and Other Financial Ratios

Table 8 provides the "direct" average cost per weighted case and the direct and indirect average cost per weighted case and the quintile ranking for these measures. The direct cost includes only those costs that are reported in the Inpatient Services functional centre. The direct and indirect cost includes the direct costs plus the inpatient share of diagnostic and therapeutic services, administrative services and support services. Note that as indicated earlier, these costs exclude all physician remuneration costs (fee-for-service, salary, sessional or other contract payments) and capital costs, as well as pre-retirement leave and other termination benefits.

Table 9 has other financial ratios that can be calculated for most hospitals in Manitoba, although the items marked as "N/A" could not be calculated using the available data.

Variability in these data (or in some cases the lack of data) should assist RHA and facility administrators in identifying areas for reporting and/or operational change. It is encouraging to see the relative consistency in the "benefit cost as a percent of total labour cost" (except for a few outliers), as this shows that clearly defined items are being recorded consistently. As was indicated earlier, Ambulatory Care expenses are frequently reported within the Inpatient Care functional centre at smaller hospitals (and also at larger hospitals in the case of day surgery). Food services cost per meal day has more variability than would be expected—this is an area that should receive further review. The "salaries and benefits as a percent of total expenses" indicator is one that would be expected to show a high level of consistency. Instead, there is a nearly 10% range at the largest hospitals (teaching, urban community and major rural [excluding Thompson General Hospital that reports a large cost for the northern transportation program]), and a 24% range for the other hospitals.

Table 10 reports ratios that can be reported only for the teaching and urban community hospitals. Other hospitals do not report the data necessary to make these calculations. There is a high level of consistency between hospitals for worked salaries and wages as a percent of total salaries and wages. The difference between worked salaries and wages and total salaries and wages is that the total amount includes costs such as vacation pay and sick leave. There is less consistency in the total emergency worked hours per emergency visit, with a difference of 3.3 hours between the lowest and the highest rate. The Winnipeg Regional Health Authority should consider reviewing the most current year of data to see if these inconsistencies still exist.

Table 11 has been provided to show the variability that can occur when using a measure that does not take into account all of the influences on the measure. See the footnote for the limitations on these results. Further analysis would be required to determine which factors contribute to this variability.

Table 8: Selected Average Costs Per Weighted Case, 1997/98

	Total Adjusted Weighted Case	Direct Cost per Weighted Case	Quintile	Direct & Indirect Cost per Weighted Case	Quintile
Teaching Hospitals					
Health Sciences Centre	$50,974	$1,859	1	$2,892	1
St Boniface	35,828	1,700	1	2,484	1
Urban Community Hospitals					
Brandon	13,857	1,259	2	1,910	2
Concordia	8,586	941	4	1,450	4
Salvation Army Grace	16,769	1,096	3	1,660	3
Seven Oaks	14,368	919	4	1,642	3
Victoria	12,236	1,257	2	2,011	2
Major Rural Hospitals					
Bethel (Winkler)	2,354	953	4	1,399	4
Bethesda (Steinbach)	3,435	743	5	989	5
Dauphin	4,223	1,043	3	1,506	3
Flin Flon	2,972	916	4	1,442	4
Morden	2,418	830	5	1,292	5
Portage	4,595	1,047	3	1,473	4
Selkirk	2,803	908	4	1,335	5
Swan River	2,635	907	4	1,582	3
The Pas	2,013	1,509	1	2,259	1
Thompson	2,997	1,255	2	2,313	1
Intermediate Rural Hospitals					
Altona	912	986	3	1,460	4
Beausejour	1,294	943	4	1,337	5
Carman	1,205	835	5	1,266	5
Churchill	760	1,475	1	2,732	1
Johnson (Gimli)	1,169	838	5	1,200	5
Minnedosa	1,026	950	4	1,381	4
Neepawa	1,690	784	5	1,116	5
Souris	853	903	4	1,509	3
Ste Rose	1,116	1,164	2	1,798	2
Virden	928	898	4	1,277	5
Small Rural Hospitals					
Arborg	418	1,270	2	2,014	2
Baldur	339	1,272	2	1,755	2
Birtle	432	1,112	2	1,775	2

	Total Adjusted Weighted Case	Direct Cost per Weighted Case	Quintile	Direct & Indirect Cost per Weighted Case	Quintile
Boissevain	367	1,220	2	1,840	2
Carberry	615	861	5	1,375	4
Deloraine	441	1,260	2	1,773	2
Desalaberry (St Pierre-Jolys)	413	1,025	3	1,699	3
EM Crowe (Eriksdale)	530	987	3	1,604	3
Emerson	270	1,293	2	1,811	2
Erickson	601	659	5	1,045	5
Glenboro	484	950	4	1,501	4
Grandview	508	994	3	1,702	3
Hamiota	739	919	4	1,398	4
Hunter (Teulon)	812	765	5	1,216	5
Lakeshore (Ashern)	648	841	5	1,504	3
Lorne (Swan Lake)	805	779	5	1,254	5
McCreary	451	997	3	1,494	4
Melita	461	1,119	2	1,509	3
Morris	707	1,003	3	1,718	2
Notre Dame	291	1,496	1	2,011	2
Pinawa	600	826	5	1,424	4
Pine Falls	1,246	706	5	1,173	5
Riverdale (Rivers)	643	760	5	1,127	5
Roblin	921	815	5	1,213	5
Rock Lake (Crystal City)	449	1,061	3	1,587	3
Russell	1,312	821	5	1,251	5
Seven Regions (Gladstone)	496	975	4	2,032	2
Shoal Lake	469	1,042	3	1,703	3
St Claude	250	1,610	1	2,277	1
Ste Anne	879	1,025	3	1,457	4
Stonewall	694	975	4	1,473	4
Tiger Hills (Treherne)	478	996	3	1,421	4
Tri-Lake (Killarney)	642	1,165	2	1,632	3
Vita	388	948	4	1,615	3
Wawanesa	307	1,375	1	2,095	2
Winnipegosis	507	1,014	3	1,451	4
Northern Isolated Hospitals					
Gillam	187	2,535	1	4,056	1
Leaf Rapids	122	3,856	1	5,860	1
Lynn Lake	358	1,374	1	2,133	1

	Total Adjusted Weighted Case	Direct Cost per Weighted Case	Quintile	Direct & Indirect Cost per Weighted Case	Quintile
Snow Lake	38	6,618	1	13,292	1
Small Multi-use Facilities					
Benito	159	1,612	1	2,487	1
MacGregor	194	1,154	2	2,581	1
Pembina Manitou	204	1,760	1	2,540	1
Reston	280	1,660	1	2,183	1
Rossburn	280	1,179	2	1,841	2
Whitemouth	226	1,139	2	1,786	2

Table 9: Selected Financial Ratios, 1997/98

	Salaries and benefits as a percent of total expenses	Benefit Cost as a percent of total labour cost	Ambulatory care expense as a percent of direct patient care expense	Food services cost per inpatient meal day
Teaching Hospitals				
Health Sciences Centre	78.2%	10.7%	26.5%	19.03
St Boniface	73.5%	12.8%	23.4%	19.84
Urban Community Hospitals				
Brandon	73.2%	11.1%	21.0%	16.96
Concordia	72.8%	10.3%	28.4%	14.70
Salvation Army Grace	76.5%	11.8%	20.9%	14.83
Seven Oaks	75.5%	11.2%	20.2%	14.69
Victoria	71.8%	11.8%	20.6%	18.01
Major Rural Hospitals				
Bethel (Winkler)	80.0%	11.1%	2.7%	16.90
Bethesda (Steinbach)	78.0%	12.1%	15.1%	N/A
Dauphin	78.5%	10.9%	16.2%	13.68
Flin Flon	79.9%	11.0%	18.9%	18.45
Morden	82.7%	11.0%	27.4%	15.89
Portage	85.2%	10.9%	8.7%	17.20
Selkirk	73.8%	11.0%	33.5%	17.60
Swan River	80.1%	11.4%	13.9%	23.91
The Pas	85.3%	11.1%	20.2%	16.75
Thompson	59.0%	11.6%	14.1%	22.70
Intermediate Rural Hospitals				
Altona	80.0%	11.1%	N/A	12.16
Beausejour	82.6%	11.2%	0.5%	15.99
Carman	79.4%	10.8%	3.6%	13.71
Churchill	67.0%	9.8%	26.4%	21.61
Johnson (Gimli)	75.1%	11.3%	4.4%	14.99
Minnedosa	84.8%	10.6%	0.0%	15.16
Neepawa	75.6%	11.5%	6.8%	11.35
Souris	81.9%	10.2%	-5.9%	13.34
Ste Rose	74.5%	11.5%	12.7%	20.66
Virden	73.7%	9.9%	N/A	N/A
Small Rural Hospitals				
Arborg	89.2%	10.5%	0.2%	13.79
Baldur	80.4%	9.8%	N/A	8.54
Birtle	86.5%	11.1%	N/A	14.83
Boissevain	82.6%	15.6%	-6.4%	13.55
Carberry	83.2%	14.4%	N/A	12.45
Deloraine	85.9%	8.6%	N/A	15.12
Desalaberry (St Pierre-Jolys)	84.6%	10.4%	N/A	15.38
EM Crowe (Eriksdale)	86.7%	9.0%	N/A	14.53
Emerson	95.1%	11.1%	N/A	11.92

	Salaries and benefits as a percent of total expenses	Benefit Cost as a percent of total labour cost	Ambulatory care expense as a percent of direct patient care expense	Food services cost per inpatient meal day
Erickson	81.6%	11.4%	N/A	13.31
Glenboro	83.4%	9.3%	N/A	13.06
Grandview	73.4%	11.3%	0.0%	20.92
Hamiota	85.4%	11.1%	N/A	12.21
Hunter (Teulon)	78.7%	11.6%	22.1%	12.54
Lakeshore (Ashern)	95.2%	8.4%	0.0%	14.08
Lorne (Swan Lake)	79.5%	11.4%	N/A	17.92
McCreary	80.5%	12.1%	0.2%	11.74
Melita	81.0%	9.3%	N/A	12.49
Morris	94.9%	10.8%	7.7%	11.91
Notre Dame	106.3%	10.5%	N/A	40.14
Pinawa	73.5%	10.8%	N/A	21.68
Pine Falls	79.6%	11.1%	18.0%	12.26
Riverdale (Rivers)	82.2%	11.6%	N/A	12.23
Roblin	71.6%	13.9%	N/A	15.11
Rock Lake (Crystal City)	73.8%	10.7%	N/A	15.71
Russell	78.0%	11.0%	0.0%	14.41
Seven Regions (Gladstone)	79.4%	9.7%	N/A	21.92
Shoal Lake	79.0%	11.4%	0.2%	12.98
St Claude	81.8%	12.0%	N/A	10.60
Ste Anne	79.5%	11.3%	2.5%	0.15
Stonewall	77.8%	11.7%	0.4%	16.01
Tiger Hills (Treherne)	82.1%	10.4%	N/A	14.17
Tri-Lake (Killarney)	68.7%	16.3%	N/A	14.49
Vita	87.7%	8.8%	N/A	N/A
Wawanesa	88.9%	9.0%	N/A	12.15
Winnipegosis	77.3%	11.3%	N/A	N/A[18]
Northern Isolated Hospitals				
Gillam	82.3%	11.2%	18.9%	28.91
Leaf Rapids	80.3%	11.2%	27.4%	12.13
Lynn Lake	77.7%	12.3%	17.1%	N/A
Snow Lake	83.6%	9.8%	-3.7%	13.83
Small Multi-use Facilities				
Benito	82.1%	11.3%	-0.1%	35.64
MacGregor	78.1%	11.5%	N/A	59.51
Pembina Manitou	82.9%	11.1%	N/A	8.35
Reston	87.8%	9.7%	N/A	13.73
Rossburn	87.5%	10.7%	N/A	13.13
Whitemouth	95.7%	10.0%	N/A	13.14

[18] Winnipegosis General Hospital reports that the cost per inpatient meal day is $20.33

Table 10: Financial Ratios Applicable to Urban Hospitals

1997/98

	Worked salaries and wages as a percent of total salaries and wages	Total emergency worked hours per emergency visit
Health Sciences Centre	83.5%	2.5
St Boniface	83.6%	4.2
Brandon	83.5%	1.9
Concordia	83.5%	2.9
Salvation Army Grace	83.4%	5.2
Seven Oaks	85.9%	2.4
Victoria	84.7%	3.2

Table 11: Administrative and Support Services Costs Per Inpatient Day, Teaching and Urban Community Hospitals[19]

1997/98

	Administrative and support services cost per inpatient day
Health Sciences Centre	$202
St Boniface	163
Brandon	145
Concordia	125
Salvation Army Grace	104
Seven Oaks	109
Victoria	132

[19] The authors received a request to produce this analysis. Readers are cautioned that a number of factors should be considered when interpreting these data. In particular, administrative and support services functional centres incur their costs as a result of providing services to all areas in a hospital. Because the denominator in the analysis presented here includes only inpatient days, the calculation assumes that all administrative and support services costs are incurred in providing inpatient care.

As in all other analyses, all physician remuneration and building capital costs have been excluded.

REFERENCES

Canadian Institute for Health Information. DAD Resource Indicators for Use with Complexity 1998. Ottawa; 1998.

Finlayson G, Nowicki D, Roos N, Shanahan M, and Black CD. *Hospital Case-Mix Costing Project: Using the Manitoba Management Information System-a first step*. Winnipeg: Manitoba Centre for Health Policy and Evaluation. University of Manitoba; July, 1999.

HayGroup. Benchmarking Comparisons of Canadian Teaching Hospitals 1998.

Helyar C, Flett, J, Hundert M, Fallon G, Mosher G, and Crawford R. *Benchmarking Comparisons of the Efficiency and Quality of Care of Canadian Teaching Hospitals*. Hospital Quarterly; Spring 1998.

Jacobs P and Hall E. *Key Operating and Financial Ratios for Alberta Hospitals*. Healthcare Management Forum. 7(1), Spring 1994.

Manitoba Health. *Manitoba Facility Reporting System User Guide*. Manitoba Health. 1997

Pink G, McKillop I, Schraa E, Chaudhry M, Macdonald S. *Measures of Financial Performance and condition:* In *Hospital Report '98--A System-wide Review of Ontario's Hospitals*. Toronto: Ontario Hospital Association; 1998.

Shanahan M, Steinbach C, Burchill CA, Friesen D, and Black CD. *A Project to Investigate Provincial Expenditures on Health Care to Manitobans: A POPULIS Project*. Winnipeg: Manitoba Centre for Health Policy and Evaluation. University of Manitoba; June, 1997.

Stewart DK, Black CD, Martens PD, Peterson S and Friesen D. *Assessing the Performance of Rural and Northern Hospitals in Manitoba: A First Look.*

Winnipeg: Manitoba Centre for Health Policy and Evaluation. University of Manitoba; July 2000.

Williams JI and Young W. *Inventory of Studies on the Accuracy of Canadian Health Administration Databases*. North York: The Institute for Clinical Evaluative Sciences. ICES Publications; 1996.

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