Drug Purchasing and Inventory Control

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Drug Costs

Total spending on drugs in Canada increased by 11% in 2005 to $24.8 billion according to the Canadian Institute for Health Information's (CIHI) annual drug expenditures report. This represented 17.5% of total health care spending in 2005.[1] Drug expenditure growth was higher in 2005 than the 10.9% increase reported in 2004 and the 9.1% increase in 2003. CIHI has identified a wide range of factors contributing to the increase, including:

- the advent of new drug therapies for once untreatable or under-treated diseases, or for disorders once treated by surgery,
- changes in prescription and dispensing practices,
- direct to consumer advertising by industry;
- demographic changes, ranging from the growth and aging of the population to epidemics or emerging new diseases.(1)

In a publication by Benefits Canada it is suggested that future increases in drug utilization will be impacted by pandemics, pharmacogenomics, biotech therapies, sharpened diagnostic capabilities and, perhaps, litigation costs.[2]

In a 2006 study of drug expenditures in BC, it was reported that growth in drug expenditures was primarily driven by the selection of more costly drugs per course of treatment and increases in the number of concomitant treatments per patient.[3] Expenditure per capita grew most rapidly among residents aged 45 to 64 years. The author suggested that the aging of this demographic group may threaten the financial viability of age-based drug benefit programs.[3]

In the Unites States, the rate of increase in prescription drug expenditures in 2004 (8.7%) and 2005 (8.1%) was slower than in Canada, but remained higher than the total projected growth of health care expenditures, including hospitals and physicians, keeping drug costs at the forefront of national health policy discussions.[4] The slowdown in the rate of drug expenditure increases in the US is suggested to be due to a continued trend toward higher prescription drug cost sharing for insured consumers, a decrease in the release of new "blockbuster" drugs in recent years, and the growing availability of generic drugs. Similarly, in 2006 it is anticipated that there will be fewer costly new drugs reaching the market and that an increased concern over product safety will also play a role in slowing the rate of drug expenditure increases.[4]

Perhaps partly as a result of the re-organization and integration of acute care, community-based care, and home care services that has been occurring across Canada, there has been little consistency between provincial jurisdictions, with respect to how drugs are expensed. This is particularly true of certain drugs that are administered in hospital outpatient settings, such as oncology treatments that may be expensed to individual hospitals, a provincial cancer agency, private third party payers, or a public third party payer (e.g. provincial Pharmacare programs). This, coupled with a change in the way that we have classified teaching versus non-teaching hospitals in the 2005/06 Hospital Pharmacy in Canada survey, necessitates that caution be taken when comparing 2005/06 drug expenditure data with that from earlier Hospital Pharmacy in Canada surveys, or when comparing data from different parts of the country.

- The average annual drug costs reported by our respondents in the 2005/06 survey was $9,229,221(Table E-1), which was $1.27 million higher than the average of $7,963,681 reported in 2003/04. This represents a 15.9% increase over the two-year period between surveys.

- Increases in the average annual drug costs were reported for all hospital sizes and types, except 100-200 bed facilities.

- The average acute care inpatient drug costs in the 2005/06 survey were reported to have increased by 17.3% per acute patient day and 16.2% per acute care admission when compared to the 2003/04 survey results. An increase in drug costs per acute patient day was reported for all hospital sizes and types with the most marked change reported in teaching hospitals, where reported costs rose 31.6%, from $40.35 in 2003/04 to $53.11 in 2005/06. This upward shift is most likely attributed to the change in the definition for teaching hospitals in the 2005/06 survey. In 2003/04, 56 sites self-identified themselves as teaching hospitals whereas in the 2005/06 report only 37 sites met the new "teaching hospital" definition, based on the facility's membership in the Association of Canadian Academic Health Care Organizations (ACAHCO).

- The average drug costs per acute care admission increased 16% from 2003/04, which represents an acceleration of the upward trend that has been documented in the past 4 surveys.

- The average drug costs per non-acute patient day reported in the 2005/06 survey were slightly lower at $9.12, compared to $9.30 in 2003/04. However, the average drug costs per non-acute admission increased 20.6% to $1,509 in 2005/06 from $1,251 in 2003/04. The increase was most significant in organizations with 100-200 beds, where the average increased from $889 per non-acute admission in 2003/04 to $1,758 in 2005/06, a 98% increase. This may be linked to increased lengths of stay due to scarce community resources for alternate levels of care (i.e. long-term care facilities and alternative residences) and increased pressure from large acute care sites to transfer low-acuity patients to local community hospitals in an effort to address emergency room congestion and long surgical wait lists.

- The average clinical/medical day unit drug costs per visit were reported at $30.89 in 2005/06, down from $53.83 in the 2003/04, a 46% decrease from the last survey. However, as noted above, the lack of consistency in how drugs are expensed across the country makes it difficult to draw any conclusions between survey years. The decrease in drug costs per visit might be related in some way to the 23% increase in the number of visits reported since the 2003/04 survey.

- The average emergency room drug costs per visit continue to increase from survey to survey, from $4.22 per visit in 1999/2000 to $6.48 in 2001/2002 to $8.01 in 2003/04 to $ 8.33 in 2005/06.

Table E-1 Inventory and Drug Costs 2005/06

	All	Bed Size			Teaching	
		100- 200	201- 500	>500	Teaching	Non-Teaching
Hospitals (n=)	**(142)**	**(27)**	**(78)**	**(37)**	**(37)**	**(105)**
Inventory Turnover Rate	10.9 124	7.0 23	11.6 66	12.2 35	12.4 35	10.3 89
Drug Expenses by Patient Care Area						
Total Drug Costs	$9,229,221 122	$1,896,809 20	$6,009,208 68	$19,982,432 34	$20,161,626 35	$4,831,127 87
Inpatient Acute Care	$4,442,880 91	$1,127,562 17	$3,263,786 47	$8,582,802 27	$9,056,544 29	$2,284,876 62
Inpatient Long-Term Care	$359,084 65	$142,134 12	$221,710 34	$741,931 19	$552,229 15	$301,140 50
Clinical/Medical Day Unit	$2,898,046 77	$393,986 13	$2,397,456 42	$5,333,389 22	$4,975,159 24	$1,957,466 53
Emergency Room	$474,176 84	$284,288 15	$383,216 44	$748,201 25	$599,004 27	$415,048 57
Ambulatory (Take Home)	$1,529,655 43	$34,282 3	$421,487 21	$2,990,584 19	$3,332,622 17	$350,793 26
Ambulatory (Retail Pharmacy)	$4,019,623 14	$501,570 1	$682,883 6	$7,382,265 7	$5,843,979 9	$735,782 5
Acute Care Inpatient Costs:						
Drug Costs/ Acute Patient Day	$36.68 85	$28.97 17	$34.14 43	$46.30 25	$53.11 28	$28.62 57
Drug Costs/ Acute Admission	$267 88	$196 17	$250 45	$345 26	$395 28	$208 60
Non-Acute Care Costs						
Drug Costs/ Non-acute Patient Day	$9.12 56	$9.94 11	$8.49 30	$9.80 15	$8.84 12	$9.20 44
Drug Costs/ Non-acute Admission	$1,509 59	$1,759 10	$1,576 32	$1,237 17	$1,709 14	$1,447 45
Other Drug Costs						
Clinic Medical Day Unit Costs / Outpatient Visit (Clinic and Day Unit)	$30.89 73	$16.28 13	$33.43 39	$35.22 21	$16.98 23	$37.29 50
Emergency Room Costs / Emergency Visit	$8.33 82	$8.41 15	$7.92 43	$9.03 24	$8.38 27	$8.31 55

Inventory

- The average reported inventory turnover rate for 2005/06 was 10.9, up from 10.3 in 2003/04. The most significant improvement was seen in sites with 201-500 beds, increasing from 10.8 in 2003/04 to 11.6 in 2005/06.

Changes in Drug Costs

- The number of respondents (n=30) reporting an increase in total drug costs in the one year period from 2004/05 to 2005/06 (Table E-2) was lower than the number reporting an increase in 2003/04 (n=59). However, the average reported percentage increase in total drug costs of 11.8% in 2005/06 was very similar to previous surveys, which reported an increase of 12.9% in 2003/04 and 13.4% in 2001/02. It is interesting to note that the average percentage increase in total drug costs of 11.8% reported in the 2005/06 survey very closely mirrors the 11% increase reported for total spending on drugs in Canada in 2005 by CIHI.

- The number of respondents (n=7) who provided information on the extent of the decrease in total drug costs in 2005/06 was the same as the 2003/04 and 2001/02 surveys. However the average reported decrease in total drug costs in 2005/06 was lower at 3.9%, compared to the 10.1% decrease reported in 2003/04, but similar to the 3.8% decrease reported in 2001/02. This wide variation from survey to survey is most likely due to the small sample size reporting data on drug cost decreases.

Table E-2 Changes in Drug Expenses by Patient Care Area - Percent Change Between Fiscal 2004/05 and 2005/06

	All	Bed Size			Teaching	
		100- 200	201- 500	>500	Teaching	Non-Teaching
Hospitals (n=)	(142)	(27)	(78)	(37)	(37)	(105)
Inpatient Acute Care, increase	9.3%	12.7%	9.0%	7.7%	8.2%	9.9%
	52	9	31	12	17	35
Inpatient Acute Care, decrease	5.3%	2.0%	5.0%	7.5%	6.8%	4.5%
	17	3	8	6	6	11
Inpatient Non-acute Care, increase	12.0%	20.7%	11.3%	6.7%	5.8%	14.9%
	31	7	14	10	10	21
Inpatient Non-acute Care, decrease	11.9%	21.7%	11.0%	11.7%	17.1%	10.6%
	16	1	11	4	3	13
Clinical/Medical Day Unit, increase	22.8%	32.2%	26.4%	10.2%	11.3%	28.3%
	49	8	27	14	16	33
Clinical/Medical Day Unit, decrease	5.2%	3.1%	5.3%	7.1%	7.2%	4.4%
	7	2	3	2	2	5
Emergency Room, increase	15.0%	19.1%	13.7%	14.0%	10.5%	17.7%
	37	8	15	14	14	23
Emergency Room, decrease	11.9%	11.8%	12.4%	8.6%	7.6%	13.0%
	24	3	18	3	5	19
Ambulatory (Take Home), increase	29.8%	.	40.3%	12.9%	8.2%	33.7%
	13	0	8	5	2	11
Ambulatory (Take Home), decrease	16.2%	35.0%	11.0%	15.0%	15.1%	16.9%
	13	2	6	5	5	8
Ambulatory (Retail Pharmacy), increase	7.8%	2.0%	10.0%	8.6%	7.8%	8.0%
	7	1	1	5	6	1
Ambulatory (Retail Pharmacy), decrease	15.3%	.	15.3%	.	.	15.3%
	1	0	1	0	0	1
Total Drug Costs, increase	11.8%	11.6%	13.7%	7.5%	8.1%	13.4%
	30	6	17	7	9	21
Total Drug Costs, decrease	3.9%	3.0%	3.6%	6.0%	2.6%	4.1%
	7	1	5	1	1	6

Drug Expenses

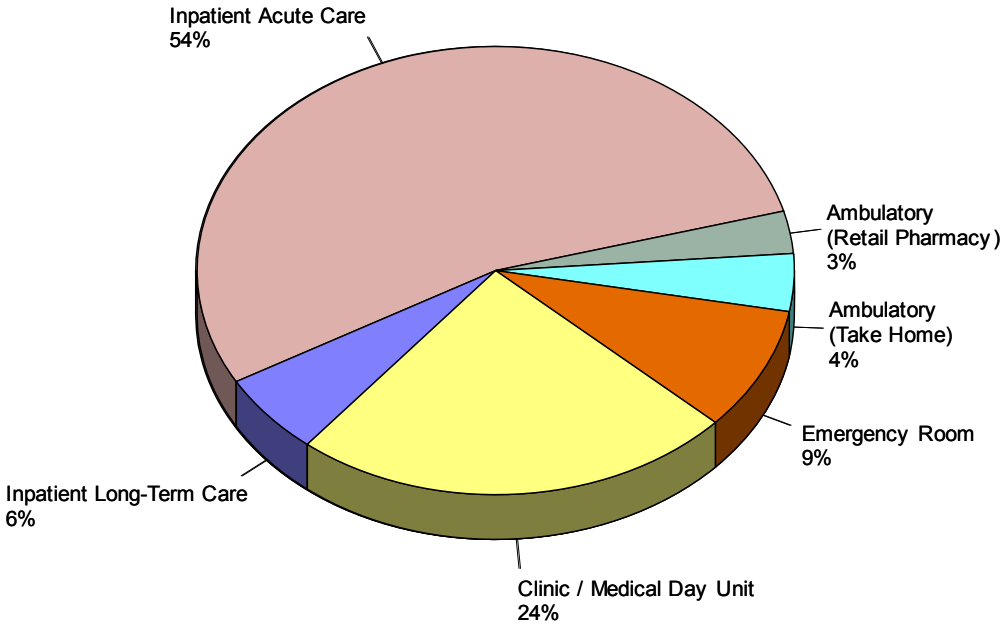
- The average drug expenses for inpatient acute care, as a percentage of the facility's total drug costs, (Table E-3) continued the downward trend that has been reported over the last six year period, from 65% of total drug expenses in 1999/2000, to 53.6% in 2005/06.

- Clinical/Medical Day Unit drug expenses experienced a marked increase between 1999/2000 and 2003/04 surveys, growing from 13% of total drug expenditures in 1999/2000 to 25% in 2003/04. In 2005/06, Clinical/Medical Day Unit drug expenses were 24.4% of total drug expenditures, similar to the 2003/04 results. It should be noted that provincial financing for some clinic/medical day unit drugs (i.e. oncology, nephrology, etc.) varies across provinces and commencing with the 2003/04 survey respondents have been directed to ensure these drug costs were included and reported, even if they are charged out to other payers, to enhance comparability across survey reports. However, some respondents are unable to provide costs for some drugs as the procurement is handled centrally by the province/cancer agency/etc, and the drugs are shipped to the hospitals at no charge.

- The average percentage of emergency room drug expenses was reported at 8.5% of total drug expenses in the 2005/06 survey, up from 7.6% in 2003/04 and 6% in 1999/2000. The adoption of pathways/protocols to support enhanced standards of care and patient safety, coupled with new novel drugs released in the last 6 years may contribute to the continued increase in this area.

- The average percentage of drug expenses for ambulatory (take home) drugs was the only other area, other than emergency room, with a noteworthy increase over the 2003/04 survey results. The average percentage of drug expenses for ambulatory (take home) drugs reported for 2005/06 was 3.6% compared to 2.4% reported in 2003/04.

Figure E-1 Percentage of Drug Expenses by Patient Care Area 2005/06



Base: All respondents who provided relevant drug cost information (91)

Table E-3 Percentage of Drug Expenses by Patient Care Area 2005/06

	All	Bed Size			Teaching	
		100- 200	201- 500	>500	Teaching	Non-Teaching
Hospitals (n=)	(142)	(27)	(78)	(37)	(37)	(105)
Inpatient Acute Care (n=91)	53.6%	60.5%	53.4%	49.7%	55.6%	52.7%
Inpatient Long-Term Care (n=91)	5.7%	7.9%	4.3%	6.8%	3.0%	7.0%
Clinical/Medical Day Unit (n=91)	24.4%	13.1%	29.0%	22.7%	21.4%	25.5%
Emergency Room (n=91)	8.5%	15.6%	7.3%	5.6%	3.3%	10.7%
Ambulatory (Take home) (n=91)	3.6%	0.3%	2.3%	8.2%	7.9%	1.6%
Ambulatory (Retail Pharmacy) (n=91)	2.5%	1.0%	1.7%	4.8%	4.8%	1.4%

1 Drug Expenditures in Canada 1985 - 2005. Canadian Institute for Health Information. Ottawa: May 10, 2006. http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=PG_570_E&cw_topic=570&cw_rel=AR_80_E. Accessed 2006 December 16.

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3 Morgan, Steven G. Prescription drug expenditures and population demographics. Health Services Research. 2006 Apr; 41(2):411-28. ProQuest document ID: 1159980301 http://proquest.umi.com/pqdweb?did=1159980301&sid=1&Fmt=2&clientId=48310&RQT=309&VName=PQD. Accessed 2006 December 16.

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