

# I – CSHP 2015

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CSHP 2015 is a quality initiative of the Canadian Society of Hospital Pharmacists that describes a preferred vision for pharmacy practice in the hospital setting by the year 2015. CSHP 2015 has 6 goals and related to each goal are a number of specific objectives with measurable targets for achieving pharmacy practice excellence. By achieving those goals and objectives, hospital pharmacy's contribution to the safe, effective, and evidence-based use of medications and its contribution to the overall health of the public, would be significantly enhanced.

(see [www.cshp.ca/programs/cshp2015/index\\_e.asp](http://www.cshp.ca/programs/cshp2015/index_e.asp)).

The results of this year's survey provide information on the progress that Canadian hospitals have made in achieving the CSHP 2015 targets, compared to the baseline data that was presented in the 2007/08 report.

### GOAL 1: INCREASE THE EXTENT TO WHICH PHARMACISTS IN HOSPITALS AND RELATED HEALTHCARE SETTINGS HELP INDIVIDUAL HOSPITAL INPATIENTS ACHIEVE THE BEST USE OF MEDICATIONS.

**Objective 1.1:** *In 100% of hospitals and related healthcare settings, pharmacists will ensure that medication reconciliation occurs during transitions across the continuum of care (admission, transfer and discharge).*

- Medication reconciliation during transitions across the continuum of care (admission, transfer and discharge) is a new CSHP 2015 objective that was not included in the 2007/2008 report. The 2009/10 results therefore represent the baseline data for this objective. Respondents indicated that medication reconciliation occurred more often upon hospital admission (69%, 109/157) than upon transfer between levels of care (41%, 64/156) or discharge (36%, 57/157).
- Medication reconciliation upon admission was highest in hospitals of 50 to 200 beds (79%, 26/33) and in teaching hospitals (74%, 31/42). Medication reconciliation upon transfer between levels of care was highest in hospitals with more than 500 beds (48%, 15/3). Hospitals with more than 500 beds also reported the highest rate of medication reconciliation upon discharge (52%, 16/31). Teaching hospitals also reported high rates upon transfer between levels of care (46%, 19/41) and upon discharge (50%, 21/42).
- Regionally, the highest level of medication reconciliation activity was reported in Ontario (ON) (admission: 88%, 44/50, transfer: 70%, 35/50; and discharge: 56%, 28/50) and the lowest rates were reported in BC (admission: 25%, 6/24; transfer: 17%, 4/24; and discharge: 4%, 1/24). The responses for medication reconciliation in this Chapter are higher than the responses in Chapter E, Medication Safety, where the question asked if medication reconciliation was provided for "all" patients or "specific groups of patients".

*Medication reconciliation across the continuum of care is still far from the CSHP target.*

**Objective 1.2:** *The medication therapy of 100% of hospital inpatients with complex and high-risk medication regimens will be monitored by a pharmacist.*

- Only 5% (8/157) of respondents reported that 100% of their inpatients with complex and high-risk medication regimens had their medication therapy monitored by a pharmacist. This falls far short of the goal of having all hospitals provide this service to 100% of the targeted population. However, in the 2007/08 report, only 18% (29/156) of respondents provided this service to 75% or more of their inpatients with complex and high-risk medication regimens, compared to 33% (52/157) of respondents in this report. This suggests that some progress is being made towards the CSHP 2015 objective. The results varied little between hospitals of different bed size, and were only slightly higher in teaching hospitals (41%, 17/42) than in non-teaching hospitals (30%, 35/115) when comparing the answer range of 75 to 100% of inpatients. The highest response rate for providing this service to 75% or more of inpatients was from ON (58%, 29/50) and the lowest was from QC (11%, 4/35).

**Objective 1.3:** *In 90% of hospitals, pharmacists manage medication therapy for inpatients with complex and high-risk medication regimens in collaboration with other members of the healthcare team.*

- In the 2009/10 survey respondents were asked if pharmacists “were managing medication therapy for inpatients with complex and high-risk medication regimens” while in the 2007/08 survey they were asked if their pharmacists had “organizational authority to manage medication therapy”. This revision of the wording unfortunately means that it is not possible to compare the 2009/10 survey results with those from 2007/08. The 2009/10 results are the new baseline. The majority of 2009/10 respondents (87%, 136/157) reported that pharmacists were managing medication therapy in collaboration with other members of the healthcare team. The above data show that the target of having 90% or more of hospitals providing this service is within reach. Teaching hospitals (100%, 42/42) and hospitals in BC (92%, 22/24) were most likely to report that they were providing this service. Hospitals with 50 to 200 beds (76%, 25/33) and hospitals in the Atlantic Provinces (76%, 13/17) were least likely to report that they were providing this service.

*The CSHP 2015 target for having pharmacists involved in the medication management of inpatients with high-risk medication regimens is within reach.*

**Objective 1.4:** *75% of hospital inpatients discharged with complex and high-risk medication regimens will receive medication counselling managed by a pharmacist.*

- Only 2% (3/157) of respondents indicated that they met the target of providing discharge counselling, managed by a pharmacist to 75% or more of inpatients with complex and high-risk medication regimens. Regardless of bed size, teaching status or region, 74% to 94% of respondents indicated that this service was provided to less than 50% of their inpatients. In Chapter E, Medication Safety, 75% (118/158) of respondents reported that they provided a pharmacist’s consultation at the time of discharge, but for “selected groups of patients only.”

*Medication counselling by a pharmacist for inpatients with complex and high-risk medication regimens on discharge is practically non-existent.*

**Objective 1.5:** *50% of recently hospitalized patients or their caregivers (family members for example) will recall speaking with a pharmacist while in the hospital.*

- Of the 112 respondents who reported conducting client satisfaction surveys, only 25% (27/112) reported that a question about speaking to a pharmacist while in hospital was included in the survey. All of those 27 respondents indicated that less than 50% of patients recalled speaking to a pharmacist while in the hospital. No hospital met the CSHP target of having 50% of recently hospitalized patients, or their caregivers (family members for example) recall speaking with a pharmacist while in the hospital.

*No hospital met the CSHP 2015 target for patients recalling that they had spoken to a pharmacist during a recent hospitalization.*

Overall these results suggest that considerable work is needed to realize the CSHP targets in the areas of medication reconciliation across the continuum of care, which is an Accreditation Canada Required Organizational Practice, and discharge counseling by a pharmacist for patients with complex and high-risk medication regimens. Are these shortcomings the result of inadequate resources in the pharmacy department or are these activities not being given a high priority by pharmacy departments? If hospitals improve their compliance with providing medication reconciliation across the continuum of care, will the pharmacist be part of the process? Will more patients then recall speaking to a pharmacist while in hospital?

TABLE I-1. Results for Goal 1 - 2009/10

Goal 1: Increase the extent to which pharmacists help individual hospital inpatients achieve the best use of medications.											
Objective	CSHP 2015 target	% achievement 2010	% achievement 2008	2009/10 Hospital pharmacy in Canada responses							
				(n=)	yes						no
1.1 In 100% of hospitals and related healthcare settings, pharmacists will ensure that medication reconciliation occurs during transitions across the continuum of care (admission, transfer and discharge).											
	admission	100%	69%	n/a	(157)	69%					31%
	transfer	100%	41%	n/a	(156)	41%					59%
	discharge	100%	36%	n/a	(157)	36%					64%
1.2 The medication therapy of 100% of hospital inpatients with complex and high-risk medication regimens will be monitored by a pharmacist.	100%	5%	≤18%	(157)		100%	75- 99%	50- 74%	25- 49%	0- 24%	
						5%	28%	23%	23%	21%	
1.3 In 90% of hospitals, pharmacists manage medication therapy for inpatients with complex and high-risk medication regimens in collaboration with other members of the healthcare team.	90%	87%		(158)	87%						13%
1.4 75% of hospital inpatients discharged with complex and high-risk medication regimens will receive medication counselling managed by a pharmacist.	75%	2%	3%	(157)		75-100%	50- 74%	25- 49%	0- 24%		
						2%	11%	25%	61%		
1.5 50% of recently hospitalized patients or their caregivers (family members for example) will recall speaking with a pharmacist while in the hospital.	50%	<50%	11%	(27)		50-100%		25- 49%	0- 24%		
						0%		15%	85%		

■ CSHP 2015 target achieved

■ CSHP target not achieved

## GOAL 2: INCREASE THE EXTENT TO WHICH PHARMACISTS HELP INDIVIDUAL NON-HOSPITALIZED PATIENTS ACHIEVE THE BEST USE OF MEDICATIONS.

**Objective 2.1:** *In 70% of ambulatory and specialized care clinics providing clinic care, pharmacists will manage medication therapy for clinic patients with complex and high-risk medication regimens, in collaboration with other members of the healthcare team.*

- Objective 2.1 was revised since the previous survey. In the 2009/10 survey respondents were asked if pharmacists in ambulatory and specialized care clinics were “managing medication therapy” while in the 2007/08 survey they were asked if their pharmacists had “organizational authority to manage medication therapy”. The 2009/10 results are the new baseline. Ninety-one percent of respondents (133/146) reported having ambulatory and specialized clinics with pharmacist involvement. This is an increase from 78% (125/161) of respondents in the previous report. The percentage of respondents who reported having ambulatory clinics with pharmacist involvement was similar, regardless of teaching status or hospital size. Of the respondents with pharmacist involvement in clinics, only 11%

*The involvement of hospital pharmacists in the medication management of ambulatory clinic patients with complex and high-risk medication regimens falls far short of the CSHP 2015*

(14/133) indicated that pharmacists were managing medication therapy for patients with complex and high-risk medication regimens in 70% or more of these clinics. The percentage of respondents who achieved the 70% target was highest in hospitals of 201 to 500 beds (13%, 11/83), non-teaching hospitals (12%, 11/93) and ON hospitals (16%, 7/45).

**Objective 2.2:** *In 95% of ambulatory and specialized care clinics, pharmacists will counsel clinic patients with complex and high-risk medication regimens.*

- Only 12% (16/134) of respondents overall met the objective. Even when looking at respondents who provided this service to just 50% or more of ambulatory care clinics, only 29% (39/134) of respondents reported that they achieved this in their hospital, compared to 53% (63/118) in the previous report. Forty percent (16/40) of teaching hospitals provided this service to 50% of their clinics, compared to 25% (23/94) of non-teaching hospitals. Regionally, QC (51%, 16/31) respondents were more likely to report that they provided this service to 50% or more of their clinics.

**TABLE I-2. Results for Goal 2 - 2009/10**

Goal 2: Increase the extent to which pharmacists help individual non-hospitalized patients achieve the best use of medications.										
Objective	CSHP 2015 target	% achieve ment 2010	% achieve ment 2008	2009/10 Hospital pharmacy in Canada responses						
				(n=)	yes	70-100%	50-69%	25-49%	0-24%	no
2.1 In 70% of ambulatory and specialized care clinics providing clinic care, pharmacists will manage medication therapy for clinic patients with complex and high-risk medication regimens, in collaboration with other members of the healthcare team.	70%	11%	n/a	(133)		70-100%	50-69%	25-49%	0-24%	
						11%	13%	15%	62%	
2.2 In 95% of ambulatory and specialized care clinics, pharmacists will counsel clinic patients with complex and high-risk medication regimens.	95%	12%	≤41%	(134)		95-100%	50-94%	25-49%	0-24%	
						12%	17%	11%	60%	
2.3 In 85% of home care services, pharmacists will manage medication therapy for patients with complex and high-risk medication regimens, in collaboration with other members of the healthcare team.	85%	48%	n/a	(40)	48%					52%

 CSHP 2015 target achieved       CSHP target not achieved

**Objective 2.3:** *In 85% of home care services, pharmacists will manage medication therapy for patients with complex and high-risk medication regimens, in collaboration with other members of the healthcare team.*

- Objective 2.3 was revised from the previous survey. In the 2009/10 survey respondents were asked if pharmacists who were providing home care services were “managing medication therapy” while in the 2007/08 survey they were asked if their pharmacists had “organizational authority to manage medication therapy”. The 2009/10 results are the new baseline. Thirty-eight percent (59/156) of respondents indicated that their hospital provided home care services. Of those respondents, 48% (19/40) indicated that pharmacists were managing medication therapy for home care

*In almost 50% of hospitals with a home care program, pharmacists participated in the medication management of patients with complex or high-risk medication regimens.*

patients with complex and high-risk regimens, in collaboration with other members of the healthcare team. The provision of this service was highest in teaching hospitals (53%, 8/15) and in ON (88%, 7/8). The provision of this service was lower in hospitals with 50 to 200 beds (25%, 1/4) and in QC (11%, 1/9).

The increase in pharmacist involvement in ambulatory and specialized care clinics is encouraging. However the pharmacist's role in managing medication therapy is very limited in this practice setting and the provision of medication counselling to clinic patients by pharmacists has decreased from the previous report. Perhaps in this rapidly expanding area of patient care, the role of the hospital pharmacist in providing services to ambulatory clinic patients is still being defined. Legislative changes in many provinces are expanding the scope of practice for pharmacists, which should lead to an increased role for pharmacists in managing this patient population. However, it is unclear if that will occur within, and/or outside, the hospital setting. As home care services expand, perhaps so will the role that pharmacists play, but again it is unclear if this will be the responsibility of hospital pharmacists or pharmacists in the community setting.

### GOAL 3: INCREASE THE EXTENT TO WHICH HOSPITAL AND RELATED HEALTHCARE SETTING PHARMACISTS ACTIVELY APPLY EVIDENCE-BASED METHODS TO THE IMPROVEMENT OF MEDICATION THERAPY.

**Objective 3.1:** *In 100% of hospitals and related healthcare settings, pharmacists will be actively involved in providing care to individual patients that is based on evidence, such as the use of quality drug information resources, published clinical studies or guidelines, and expert consensus advice.*

- This objective was revised from the 2007/08 survey, where respondents were asked if pharmacists were “actively involved in ensuring patients receive evidence-based medication therapy”. In the 2009/10 survey the question asked if “pharmacists are actively involved in providing care to individual patients that is based on evidence”. The 2009/10 results are the new baseline. Ninety percent of respondents (142/157) reported that pharmacists were actively involved in providing this type of service. All teaching hospitals reported that they provided this service. In hospitals with 50 to 200 beds, 82% (27/33) reported that they provided this service.

**Objective 3.2:** *In 100% of hospitals and related healthcare settings, pharmacists will be actively involved in the development and implementation of evidence-based drug therapy protocols and/or order sets.*

- This objective was modified slightly from the 2007/08 survey. The previous question “In your hospital are pharmacists actively involved in the development and implementation of evidence-based *therapeutic protocols involving medication use*” was changed to “...evidence-based *drug therapy protocols and/or order sets*”. Eighty-five percent of respondents (133/157) reported that they were involved in this activity. This result approaches CSHP 2015's target of having 100% of all hospitals involved in this activity. This is slightly less than the previous report response of 91% (145/160). Responses did not vary significantly with bed size, but teaching hospitals (98%, 41/42) reported higher rates than non-teaching hospitals (80%, 92/115). ON respondents reported 100% achievement of this objective, while 43% (15/35) of QC respondents indicated they were not involved with this activity.

**Objective 3.3:** *90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive angiotensin-converting enzyme inhibitors or angiotensin receptor blockers at discharge*

**Objective 3.4:** *90% of hospital pharmacies will participate in ensuring that patients hospitalized for congestive heart failure will receive angiotensin-converting enzyme inhibitors or angiotensin receptor blockers at discharge.*

**Objective 3.5:** *90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive beta-blockers at discharge.*

**Objective 3.6:** *90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive aspirin at discharge.*

**Objective 3.7:** *90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive lipid-lowering therapy at discharge.*

- Of the respondents whose patient population included adults with acute myocardial infarction and/or congestive heart failure (91%, 142/156), more than half of those respondents reported that pharmacists were involved in insuring that patients hospitalized for acute myocardial infarction received, on discharge, either an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker (59%, 83/141), a beta-blocker (59%, 83/140), aspirin (59%, 83/141) and lipid-lowering therapy (59%, 83/140). For patients with congestive heart failure, 54% (76/141) of respondents indicated that pharmacists actively participated in ensuring that they received either an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker. Teaching hospitals reported higher participation in these activities (range 81% to 94%) compared to non-teaching hospitals (range 46% to 50%). Hospitals with 50 to 200 beds reported participation rates ranging from 30 to 37%. The Prairie respondents reported 71% to 81% involvement, while 45% (9/20) of BC respondents reported involvement in these activities. QC also reported low levels of involvement (range 32% to 40%).

*Pharmacist involvement in insuring that MI patients receive appropriate, evidence-based therapy on discharge was significant but falls short of the CSHP 2015 target.*

**TABLE I-3. Results for Goal 3 - 2009/10**

<b>Goal 3: Increase the extent to which hospital and related healthcare setting pharmacists actively apply evidence-based methods to the improvement of medication therapy.</b>							
Objective		CSHP 2015 target	% achievement 2010	% achievement 2008	2009/10 Hospital pharmacy in Canada responses		
					(n=)	yes	no
3.1	In 100% of hospitals and related healthcare settings, pharmacists will be actively involved in providing care to individual patients that is based on evidence, such as the use of quality drug information resources, published clinical studies or guidelines, and expert consensus advice.	100%	90%	n/a	(157)	90%	10%
3.2	In 100% of hospitals and related healthcare settings, pharmacists will be actively involved in the development and implementation of evidence-based drug therapy protocols and/or order sets.	100%	85%	n/a	(157)	85%	15%
3.3	90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive angiotensin-converting enzyme inhibitors or angiotensin receptor blockers at discharge.	90%	59%	53%	(141)	59%	41%
3.4	90% of hospital pharmacies will participate in ensuring that patients hospitalized for congestive heart failure will receive angiotensin-converting enzyme inhibitors or angiotensin receptor blockers at discharge.	90%	54%	50%	(141)	54%	46%
3.5	90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive beta-blockers at discharge.	90%	59%	52%	(140)	59%	41%
3.6	90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive aspirin at discharge.	90%	59%	52%	(141)	59%	41%
3.7	90% of hospital pharmacies will participate in ensuring that patients hospitalized for an acute myocardial infarction will receive lipid-lowering therapy at discharge.	90%	59%	51%	(140)	59%	41%
3.8	In 90% of hospitals and related healthcare settings providing clinic care, pharmacists will participate in ensuring that non-hospitalized patients who are receiving medications to decrease blood glucose levels will be assessed at least annually with a HbA1c test.	90%	28%	23%	(58)	28%	72%
3.9	In 70% of hospitals and related healthcare settings, pharmacists will be actively involved in medication- and vaccination-related infection control programs.	70%	45%	n/a	(155)	45%	55%

 CSHP 2015 target achieved

 CSHP target not achieved

**Objective 3.8:** *In 90% of hospitals and related healthcare settings providing clinic care, pharmacists will participate in ensuring that non-hospitalized patients who are receiving medications to decrease blood glucose levels will be assessed at least annually with a HbA1c test.*

- In those hospitals that provide outpatient care to diabetes patients (74%, 116/157), only 50% (58/116) have a pharmacist involved in the diabetes clinic. Of those respondents 72% (42/58) indicated that it was not current practice for pharmacists to ensure that diabetes patients have an HbA1C test performed at least annually. This was independent of teaching status, bed size or region.

**Objective 3.9:** *In 70% of hospitals and related healthcare settings, pharmacists will be actively involved in medication- and vaccination-related infection control programs.*

- Pharmacist involvement in medication- and vaccination-related infection control programs was a new objective in this survey. While 71% (112/157) of respondents indicated that their pharmacists are actively involved in *medication-related* infection control programs, only 45% (71/157) reported having a pharmacist actively involved in *vaccination-related* infection control programs. When asked about pharmacist participation in both programs, the response was 45% (69/155). Teaching hospitals (79%, 33/42) surpassed the CSHP 2015 target of 70% compared to non-teaching hospitals at only 32% (36/133). Involvement in providing these services was lowest in BC (21%, 5/24).

The data indicates that pharmacists are actively involved in providing care that is evidence-based, and in the development and implementation of evidence-based drug therapy protocols and/or order sets. The CSHP 2015 targets for these two objectives are within reach! However it appears pharmacists are less involved in ensuring compliance with the described drug therapy objectives. Could it be that once the drug therapy protocols are developed, other healthcare professionals become responsible for their use? Could this be due to a lack of pharmacist resources to take on that responsibility? Could the lack of pharmacist involvement in smaller and non-teaching hospitals again be due to limited pharmacist resources?

#### GOAL 4: INCREASE THE EXTENT TO WHICH PHARMACY DEPARTMENTS IN HOSPITALS AND RELATED HEALTHCARE SETTINGS HAVE A SIGNIFICANT ROLE IN IMPROVING THE SAFETY OF MEDICATION USE.

**Objective 4.1:** *90% of hospitals and related healthcare settings will have an organizational program, with appropriate pharmacy involvement, to achieve significant annual, documented improvement in the safety of all steps in medication use.*

- The 2009/10 survey data indicate that 62% (98/157) of respondents have such a medication safety quality improvement program in place. This is essentially unchanged from the previous report. Teaching hospitals (71%, 30/42) and respondents from BC (71%, 17/24) and ON (68%, 34/50) were most likely to have such a program in place.

*An annual assessment of the quality of the sterile products service is conducted by less than a third of all respondents, far short of the CSHP 2015 target of 80%.*

**Objective 4.2:** *80% of pharmacies in hospitals and related healthcare settings will conduct an annual assessment of the processes used for compounding sterile medications, consistent with established standards and best practices.*

- Only 29% (45/156) of respondents indicated that they conduct such an annual sterile products quality improvement process, with no notable differences based on teaching status, bed size or region. This is a small improvement on the baseline of 24% (39/161) in 2007/08.

**Objective 4.3:** *80% of hospitals have at least 95% of routine medication orders reviewed for appropriateness by a pharmacist before administration of the first dose.*

- Nearly 40% (61/157) of respondents indicated that they did not achieve this performance target for the review of routine medication orders. This is similar to the baseline data from 2007/08. Teaching hospitals (79%, 33/42) were more likely to achieve this target than non-teaching hospitals (55%, 63/115), as were larger hospitals (more than 500 beds: 74%, 23/31; 201 to 500 beds: 63%, 59/93; 50 to 200 beds: 42%, 14/33). Regionally, a notably lower percentage of respondents from BC (46%, 11/24) and a higher

percentage from QC (80%, 28/35) reported that they met the CSHP 2015 target. In Chapter C, Drug Distribution, when this same question was asked but included the proviso “during the hours that the Pharmacy is open” the response was 94% (149/158).

**Objective 4.4:** *100% of medication orders in a hospital’s emergency department will be reviewed by hospital pharmacists within 24 hours.*

*Before administration to the patient, a pharmacist’s review occurs for at least 95% of all routine medication orders... except when the pharmacy is closed.*

- Review by a pharmacist, within 24 hours, of some or all of the medication orders written in the emergency department, was reported by 67% (105/156) of all respondents. Respondents with 50 to 200 beds (59%, 19/32), those from the Prairies (55%, 17/31), and those from the Atlantic Provinces (53%, 9/17) were least likely to report that this was their practice. In comparison, 77% (24/31) of hospitals with more than 500 beds and 97% (33/34) of QC respondents indicated that this practice was in place. Seventy-seven percent (84/109) of respondents who reported that medication orders written in the emergency department were reviewed by pharmacists within 24 hours specified that they did so for 75% to 100% of the orders. This is an improvement on the 2007/08 baseline data of 59% (61/103). The CSHP 2015 target is that 100% of medication orders written in the emergency department are reviewed within 24 hours by pharmacists. Only 27% (29/109) of respondents achieved the target, but in QC 48% (16/33) of respondents achieved the target.

**Objective 4.5:** *90% of hospital pharmacies will participate in ensuring that patients receiving antibiotics as prophylaxis for surgical infections will have their prophylactic antibiotic therapy discontinued within 24 hours after the surgery end time.*

- Forty-five percent (70/156) of respondents indicated that this practice was in place, compared to CSHP 2015’s target of 90%. The 2009/10 result is an increase from the 2007/08 baseline data of 39% (62/159). Teaching hospitals were more likely to report that they had this practice in place (64%, 27/42), compared to non-teaching hospitals (38%, 43/114). Sixty percent (30/50) of ON respondents reported having this in place.

*After many years of slow progress, over 75% of survey respondents utilize a unit-dose system for 90% or more of their total beds.*

**Objective 4.6:** *85% of pharmacy technicians in hospitals and related healthcare settings will be certified by a clearly identifiable and recognized training program.*

- Sixty-three percent (98/155) of respondents reported that 85% or more of their pharmacy technician workforce had either completed a provincial certification program or a college training program. This is a small increase compared to the 2007/08 baseline data of 59% (94/159). Seventy-seven percent (24/31) of respondents from the Prairies met the 85% target but only 25% (4/16) of Atlantic region respondents did so.

**Objective 4.7:** *75% of pharmacies in hospitals utilize a unit-dose system for drug distribution for 90% or more of their total beds.*

- Seventy-six percent (119/157) of all respondents indicated that they had achieved this objective. This surpasses the CSHP 2015 target of 75%. Higher rates were reported in hospitals with 201 to 500 beds (84%, 78/93), in teaching hospitals (86%, 36/42), in ON hospitals (86%, 43/50) and in QC hospitals (83%, 29/35). The lowest percentages of respondents that achieved the target were reported by hospitals with 50 to 200 beds (52%, 17/33) and respondents in the BC region (46%, 11/24). These responses are similar to Chapter C, Drug Distribution where 71% (111/158) reported centralized unit dose systems and 8% (13/158) reported decentralized unit dose systems that met the target of servicing 90% or more of their total beds.

**Objective 4.8:** *100% of new pharmacists entering hospital and related healthcare setting practice will have completed a Canadian Hospital Pharmacy Residency Board (CHPRB)-accredited residency.*

- A new CSHP 2015 objective is that 100% of all newly hired pharmacists will have completed a Canadian Hospital Pharmacy Residency Board (CHPRB) accredited residency program. Of those respondents who hired pharmacists in the 12 months preceding the survey, 29% (37/128) hired only pharmacists who had completed accredited residency programs. The target was reached by 40% (16/40) of teaching hospital respondents and 86% (25/29) of QC respondents.

Despite modest increases from baseline data it is concerning that the results continue to show a lack of well-developed organizational programs to review safe medication use and sterile compounding. The revised standards in USP General Chapter <797> Pharmaceutical Compounding - Sterile Preparations<sup>1,2</sup>, do not appear to have had a significant impact on the compliance of Canadian hospital pharmacies with the objective relating to the annual assessment of sterile compounding processes. It is disappointing that such a low percentage of hospitals met the targets for pharmacist review of routine medication orders prior to administration of first doses, pharmacist review of orders written in the emergency department within 24 hours, and pharmacist participation in discontinuation of post-surgical prophylactic antibiotic therapy. Could the absence of significant improvement be due to a lack of resources or limited hours of operation? The ability to hire only pharmacists who have completed an accredited hospital pharmacy residency program will continue to be a challenge as long as we have more pharmacist vacancies to fill than residency program positions available. It is encouraging that QC had such a high success rate with this new CSHP 2015 target.

**TABLE I- 4. Results for Goal 4 - 2009/10**

<b>Goal 4: Increase the extent to which pharmacy departments in hospitals and related healthcare settings have a significant role in improving the safety of medication use.</b>												
Objective		CSHP 2015 target	% achievement 2010	% achievement 2008	2009/10 Hospital pharmacy in Canada responses							
					(n=)	yes						no
4.1	90% of hospitals and related healthcare settings will have an organizational program, with appropriate pharmacy involvement, to achieve significant annual, documented improvement in the safety of all steps in medication use.	90%	62%	64%	(157)	62%						38%
4.2	80% of pharmacies in hospitals and related healthcare settings will conduct an annual assessment of the processes used for compounding sterile medications, consistent with established standards and best practices.	80%	29%	24%	(156)	29%						71%
4.3	80% of hospitals have at least 95% of routine medication orders reviewed for appropriateness by a pharmacist before administration of the first dose.	80%	61%	59%	(157)	61%						39%
4.4	100% of medication orders in a hospital's emergency department will be reviewed by hospital pharmacists within 24 hours.	100%	27%	≤59%	(109)		100%	75-99%	50-74%	25-49%	0-24%	
							27%	50%	11%	7%	5%	
4.5	90% of hospital pharmacies will participate in ensuring that patients receiving antibiotics as prophylaxis for surgical infections will have their prophylactic antibiotic therapy discontinued within 24 hours after the surgery end time.	90%	45%	39%	(156)	45%						55%
4.6	85% of pharmacy technicians in hospitals and related healthcare settings will be certified by a clearly identifiable and recognized training program.	85%	63%	≤59%	(155)		85-100%	50-84%	25-49%	0-24%		
							63%	16%	3%	18%		
4.7	75% of pharmacies in hospitals utilize a unit-dose system for drug distribution for 90% or more of their total beds.	75%	76%	62%	(157)	76%						34%
4.8	100% of new pharmacists entering hospital and related healthcare setting practice will have completed a Canadian Hospital Pharmacy Residency Board (CHPRB)-accredited residency.	100%	29%	n/a	(128)		100%	75-99%	50-74%	25-49%	0-24%	
							29%	8%	5%	11%	47%	

■ CSHP 2015 target achieved

■ CSHP target not achieved

**GOAL 5: INCREASE THE EXTENT TO WHICH HOSPITALS AND RELATED HEALTHCARE SETTINGS APPLY TECHNOLOGY EFFECTIVELY TO IMPROVE THE SAFETY OF MEDICATION USE.**

**Objective 5.1:** *75% of hospitals will use machine-readable coding to verify medications before dispensing*

- Only 17% (27/157) of respondents reported that they routinely used machine-readable coding in the inpatient pharmacy to verify medications before dispensing, with no difference between teaching and nonteaching hospitals. This is a modest increase from the baseline data of 13% (20/158).

**Objective 5.2:** *75% of hospitals will use machine-readable coding to verify all medications before administration to a patient.*

- Machine-readable coding to verify the identity of the patient and the accuracy of medication administration at the point-of-care was reported by only 5% (8/157) of respondents.

**Objective 5.3:** *For routine medication prescribing for inpatients, 75% of hospitals will use computerized prescriber order entry systems that include clinical decision support.*

- Only 6% (10/157) of respondents indicated that a CPOE system with clinical decision support was in place at their facility. Higher implementation rates were reported in teaching hospitals (19%, 8/42) and the Atlantic Provinces (18%, 3/17). None of the small hospitals (50 to 200 beds), BC hospitals, or QC hospitals reported having a CPOE system.

The adoption of bar-code systems for the positive identification of medications, patients, and caregivers is proceeding very slowly.

**Objective 5.4:** *100% of hospital pharmacists will use computerized pharmacy order entry systems that include clinical decision support.*

- The results indicate that 77% of respondents (120/155) have this in place. This is an increase from the 2007/08 baseline of 69%. In the Prairies only 53% (16/30) of respondents reported using such a system. Of note, in Chapter F, Technology the response to this question was similar at 80% (125/156).

**Objective 5.5:** *In 75% of hospitals and related healthcare settings, pharmacists will use medication-relevant portions of patients' electronic medical records for managing patients' medication therapy.*

- Of the 52% (81/156) of respondents who reported that their hospital had an electronic medical record (EMR), 89% (71/80) indicated that pharmacists used the medication-relevant portions of the record to manage patients' medication therapy. The CSHP target of 75% has been surpassed. Both the availability of the EMR and the use of the EMR by pharmacists have increased since the last report.

**Objective 5.6:** *In 75% of hospitals and related healthcare settings, pharmacists will be able to electronically access pertinent patient information and communicate across settings of care (e.g. hospitals, clinics, home care operations, and chronic care operations) to ensure continuity of pharmaceutical care for patients with complex and high-risk medication regimens.*

- Thirty-seven percent (57/156) of respondents indicated that their pharmacists had this capability compared to the CSHP 2015 target of 75%.

In general, adoption of technology remains slow within the hospital setting but it is growing. Chapter F, Technology reported that 49% (78/160) of respondents use bar coding in their medication use system. The use of computerized

In those hospitals with electronic medical records (EMR), the pharmacists' use of the EMR surpassed the CSHP 2015 target.

prescriber order entry systems with clinical decision support has increased over the 2007/08 baseline. The EMR has expanded into more hospitals and it is well utilized by pharmacists.

**TABLE I-5. Results for Goal 5 - 2009/10**

<b>Goal 5: Increase the extent to which hospitals and related healthcare settings apply technology effectively to improve the safety of medication use.</b>							
Objective		CSHP 2015 target	% achievement 2010	% achievement 2008	2009/10 Hospital pharmacy in Canada responses		
					(n=)	yes	no
5.1	75% of hospitals will use machine-readable coding to verify medications before dispensing.	75%	17%	13%	(157)	17%	83%
5.2	75% of hospitals will use machine-readable coding to verify all medications before administration to a patient.	75%	5%	1%	(157)	5%	95%
5.3	For routine medication prescribing for inpatients, 75% of hospitals will use computerized prescriber order entry systems that include clinical decision support.	75%	6%	7%	(157)	6%	94%
5.4	100% of hospital pharmacists will use computerized pharmacy order entry systems that include clinical decision support.	100%	77%	69%	(155)	77%	23%
5.5	In 75% of hospitals and related healthcare settings, pharmacists will use medication-relevant portions of patients' electronic medical records for managing patients' medication therapy.	75%	89%	81%	(80)	89%	11%
5.6	In 75% of hospitals and related healthcare settings, pharmacists will be able to electronically access pertinent patient information and communicate across settings of care (e.g. hospitals, clinics, home care operations, and chronic care operations) to ensure continuity of pharmaceutical care for patients with complex and high-risk medication regimens <sup>3</sup> .	75%	37%	39%	(156)	37%	63%

■ CSHP 2015 target achieved      ■ CSHP target not achieved

## GOAL 6: INCREASE THE EXTENT TO WHICH PHARMACY DEPARTMENTS IN HOSPITALS AND RELATED HEALTHCARE SETTINGS ENGAGE IN PUBLIC HEALTH INITIATIVES ON BEHALF OF THEIR COMMUNITIES.

**Objective 6.1:** *60% of pharmacies in hospitals and related healthcare settings will have specific ongoing initiatives that target community health.*

- Seventeen percent (26/154) of respondents reported that their pharmacy had specific ongoing initiatives that target community health.

**Objective 6.2:** *85% of hospital pharmacies will participate in ensuring that high risk patients in hospitals and related healthcare settings receive vaccinations for influenza and pneumococcus.*

- Thirty percent (47/155) of respondents indicated that they had a process in place for both vaccinations, compared to the 2007/08 baseline of 23% (36/159). The reported performance for influenza vaccination alone was slightly higher (42%, 65/156), especially in teaching hospitals (55%, 23/42) and within ON hospitals (55%, 27/49). For pneumococcal vaccination alone 31% (49/156) of all respondents reported pharmacy involvement.

**Objective 6.3:** *80% of hospital pharmacies will participate in ensuring that hospitalized patients who smoke receive smoking-cessation counselling.*

Only 22% (35/157) of respondents reported having a process in place for ensuring that hospitalized patients who smoke receive smoking cessation counselling. This was independent of teaching status or bed size. This is only marginally better than the 2007/08 baseline of 19% (30/160). Respondents from the Atlantic region reported greater participation of pharmacy departments in this process (35%, 6/17). For pharmacy departments that did not participate in the process, 59% (72/122) of respondents indicated that a smoking cessation program was provided by another healthcare professional in their hospital. When the 22% of respondents who have pharmacists involved in their smoking cessation program is combined with the 59% of respondents who have

other healthcare providers delivering the smoking cessation program the total (81% of respondents) indicates that most hospitals have smoking cessation programs in place.

**Objective 6.4:** *90% of pharmacy departments in hospitals and related healthcare settings will have formal up-to-date emergency preparedness programs integrated with their hospitals and related healthcare settings' and their communities' emergency preparedness and response programs.*

Although pharmacist participation in smoking cessation counselling is far short of the CSHP 2015 target, a combined 81% of respondents provide this program for their patients by either a pharmacist or other health care professional.

- Seventy-eight percent (121/155) of respondents indicated that they had such a program in place. This is a substantial increase over the 2007/08 baseline of 54% (86/160) and close to the CSHP 2015 target of 90%. There was no notable difference between hospitals of different bed sizes and teaching hospitals reported only slightly better results (85%, 35/41) than non-teaching hospitals (75%, 86/114). The Atlantic Provinces and ON reported the highest rates with 100% (17/17) and 88% (44/50) of respondents, respectively, reporting that they had such a program QC reported the lowest rate at 45% (15/33).

There was a substantial increase in the percentage of respondents who reported having an emergency-preparedness program in place.

It is encouraging to see that hospital pharmacies in certain regions (e.g., Atlantic Provinces and ON) have made strides in the implementation of initiatives that target community health. Participation of hospital pharmacists in vaccination and smoking cessation programs has increased modestly. Smoking cessation programs appear to be provided by other healthcare disciplines within the hospital setting. The increase in the number of respondents indicating availability of an integrated emergency preparedness program could be related to the H1N1 influenza pandemic of 2009/10. The CSHP 2015 target of 90% for this latter objective is within reach!

**TABLE I-6. Results for Goal 6 - 2009/10**

<b>Goal 6: Increase the extent to which pharmacy departments in hospitals and related healthcare settings engage in public health initiatives on behalf of their communities.</b>							
Objective		CSHP 2015 target	% achievement 2010	% achievement 2008	2009/10 Hospital pharmacy in Canada responses		
					(n=)	yes	no
6.1	60% of pharmacies in hospitals and related healthcare settings will have specific ongoing initiatives that target community health.	60%	17%	21%	(154)	17%	83%
6.2	85% of hospital pharmacies will participate in ensuring that high risk patients in hospitals and related healthcare settings receive vaccinations for influenza and pneumococcus.	85%	30%	23%	(155)	30%	70%
6.3	80% of hospital pharmacies will participate in ensuring that hospitalized patients who smoke receive smoking-cessation counselling.	80%	22%	19%	(157)	22%	78%
6.4	90% of pharmacy departments in hospitals and related healthcare settings will have formal up-to-date emergency preparedness programs integrated with their hospitals and related healthcare settings' and their communities' emergency preparedness and response programs.	90%	78%	54%	(155)	78%	22%

 CSHP 2015 target achieved

 CSHP target not achieved

<sup>1</sup> Pharmaceutical compounding – sterile preparations (general information chapter 797). In: The United States Pharmacopoeia, 27<sup>th</sup> rev., and The National Formulary, 22<sup>nd</sup> ed. Rockville, MD: United States Pharmacopoeial Convention; 2004:2350-70.

<sup>2</sup> Revision Bulletin. <797> Pharmaceutical Compounding – Sterile Preparations. The United States Pharmacopoeial Convention. 2008.