

CHUM

*—The Safer Healthcare now!—
Campaign
The Node 's Strategy to sell it
in Québec*

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Topics to be discussed

- 1 The campaign in Québec: a recent story
- 2 The campaign : not only for saving lifes in targeted sectors
- 3 Incidence of health problems targeted in Québec hospitals
- 4 Hypothesis of effectiveness and the impacts
- 5 Conclusion

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The campaign in Québec: a recent story

- The campaign began in April 2005 in three regions of Canada;
- In Quebec, the CHUM was chosen by the CPSI as the node leader or the synapse in May 2006;
- The campaign is unknown in Quebec.

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Few words about the CHUM merger of three teaching hospitals

- The largest hospital in Quebec
- 1000 physicians, dentists and pharmacists
- 4200 nurses and staff reporting to nursing directorate
- 240 managers
- 3200 other employees
- 320 investigators
- 5000 students
- 800 volunteers

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Where are we according to patient safety? Strong leadership

- CEO and board commitment to patient safety initiatives
- Train the leaders
 - members of quality committees;
 - head nurses and physicians
 - risk manager (IHI executive training)

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Where are we according to patient? Strong leadership

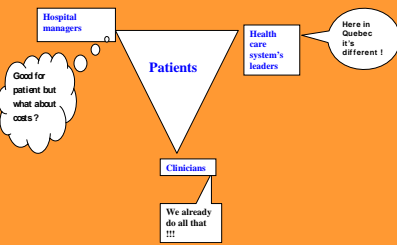
- French canadian leadership
 - adaptation of canadian patient safety glossary
 - ISMP Canada publications
 - occasionnal support to CCHSA, CPSI in translation or adaptation

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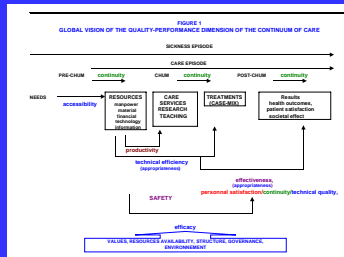
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The campaign : not only for saving lives in targeted sectors

- The strategies, their goals and requirements unknown by clinicians and managers;
- Concerns expressed according to costs and efforts required;
- How to convince that campaign is cost-effective ?

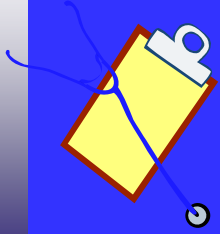


CHUM 's conceptual framework on quality and performance



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Four strategies were evaluated for assessing incidence of problems and impact on quality and efficiency



- AMI: Improved care for Acute Myocardial Infarction
- CLI: Prevention of Central-line associated Bloodstream Infection
- SSI: Prevention of Surgical Site Infection
- VAP: Prevention of Ventilator-Associated Pneumonias

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Incidence of health problems targeted in Québec hospitals

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Incidence of health problems targeted in Quebec

- We used the provincial hospitalization data file for the fiscal year 2004-2005
- Selected ICD-9 and ccdti codes were used for each strategies
- The data extraction was done by the Quebec Health Organizations Association (AQESSS): a partner of the Quebec campaign

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Improved care for Acute myocardial Infarction

- 13 443 admissions with AMI as principal diagnosis
- 1 571 deaths (11,7 %)
- possible problem of AMI codification

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Prevention of Central-line associated Bloodstream Infection

- 11 964 cases reported in patient files
- 1 336 with bloodstream infections
- 311 infections with deaths (23 %)
- Death rate is at the upper level reported in literature (4 to 20 %).

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Incidence of Central-line associated Bloodstream Infection

	Cases with central-line		
	Without Infection	With Infection	Total
Number of cases	10 628 (89%)	1 336 (11%)	11 964
Numbers of deaths	1 377	311	1 688
Rate of death	12.9 %	23 %	
Rate of complications	42 %	61 %	
LDS	24,74	38,06	
ICU LOS	7,71	11,48	
Average admission costs (CHUM)	25 436 \$	45 350 \$	27 983 \$
Pharmacy average costs	3 830 \$	7 026 \$	4 239 \$



Potential Impact simulation of Central-line associated Bloodstream infections on efficiency

10 % effectiveness in infections		
Cases avoided		134 (30 deaths)
Hospitalisation days avoided		1784 (134 X 13,3 days)
Hospitalisation days avoided in ICU		505 (134 X 3,77 days)
Costs reduced		2,7M\$ (134 X 19 914 \$)
50 % effectiveness in infections		
Cases avoided		668 (153 deaths)
Hospitalisation days avoided		8884 (668 X 13,3 days)
Hospitalisation days avoided in ICU		2518 (668 X 3,77 days)
Costs reduced		13,3M\$ (668 X 19 914 \$)



Potential Impact simulation of Central-line associated Bloodstream infection on access

10 % effectiveness in infections		
Cases avoided		134
Number of beds released		5
Number of additional patients admitted		72 cases (1784 / 24,74) ou 158 ptj or ptg or 892 48 hours less waiting in the ER
50 % effectiveness in infections		
Cases avoided		668
Number of beds released		24,3
Number of additional patients admitted		359 cases (8884 / 24,74) ou 987 ptj or ptg or 4442 48 hours less waiting in the ER



Prevention of Surgical Site Infection

- In USA, 2 to 3 % of surgical patients developed an infection of surgical site;
- 40 to 60 % were avoidable.



Incidence of Surgical Site Infection

	Without infection	With infection	Total
Number of cases	189 441 (98,2%)	3 380 (1,8%)	192 821
Number of deaths	3 723	277	4000
Rate of death	1,96 %	8,2 %	2,1%
Rate of complication(s)	17,5 %	84,3% %	18,7%
Total LOS	7,45	30,98	7,87
ICU LOS	3,84	8,09	4,03
Total average costs (CHUM)	8 780 \$	26 995 \$	9 255 \$
Pharmacy average costs (CHUM)	726 \$	3 119 \$	7 886 \$



Simulation of prevention of Surgical Site Infection on efficiency

10 % effectiveness in infections		
Cases avoided	338 (28 deaths)	
Hospitalisation days avoided	7 943 (338 X 23,5 days)	
Hospitalisation days avoided in ICU	1453 (338 X 4,3 days)	
Costs reduced	6,2MS (338 X 18 215 \$)	
50 % effectiveness in infections		
Cases avoided	1 690 (138 deaths)	
Hospitalisation days avoided	39 715 (1 690 X 23,5 days)	
Hospitalisations days avoided in ICU	7 267 (1 690X 4,3 days)	
Costs reduced	30,8 MS (1 690 X 18 215 \$)	



Simulation of prevention of Surgical Site Infections on access

10 % effectiveness in infections		
Cases avoided	338	
Number of beds released	22	
Number of additional patients admitted	1 066 cases (7 943 / 7,45) or 882 ph or plg	
50 % effectiveness in infections		
Cases avoided	1690	
Number of beds released	109	
Number of additional patients admitted	5 330 cases (39 715 / 7,45) or 4413 ph or plg	19 857 48 hours less waiting in the ER



Prevention of Ventilator-Associated Pneumoni (PVA)

- Principal cause of deaths associated to nosocomial infections
- Mortality rate of PVA is 46 % compared to 32 % without pneumonia
- Longer lenght of stay with VA and in ICU
- Costs increased by 40 %

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INCIDENCE OF PROBLEMES ADRESSED BY THE CAMPAIGN

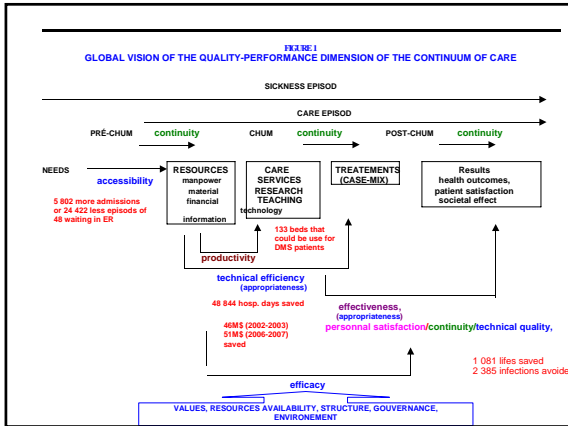
	CAS	INFECTIONS	DEATHS
AMI	13 443		1 571
CLI	11 964	1 336 (11 %)	311 (23 %)
SSI	192 821	3 380 (1.8 %)	277 (8.2 %)
VAP	274 (surgery, some APR-DRGs)	53 (19 %)	17 (32 %)
TOTAL	218 502	4 769	2 176
4 STRATÉGIES			

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IMPACTS ON QUALITY AND EFFICIENCY ACCORDING TO AN HYPOTHESIS STRATEGY EFFECTIVENESS OF 50 %

	COMPLICATIONS AVOIDED	LIFES SAVED	HOSPITALISATION DAYS SAVED	COST REDUCED	OR	Improved access	48 H WAITING IN ER
AMI		785		1.6 M\$			
CLI	668	153 (23 %)	8 884 (28 % ICU)	13.3 M\$	OR	359 OR 987 ptg - pth	OR 4 442
SSI	1 690	138 (8.2 %)	39 715 (18 % ICU)	30.8 M\$	OR	5 330 OR 4 413 ptg - pth	OR 19 857
VAP	27	5	245 (47 % SI)	0.326 M\$	OR	13	OR 123
TOTAL	2 385	1 081	48 844	46 M\$		5 802	24 422
4 STRATÉGIES			133 Eq beds	51.6 M\$			
				(2002-2003)			
				(2006-2007)			



CHUM **Conclusion**

- Incidence of problems targeted by the campaign is high in Quebec and even if we consider possible under reporting
 - 4 800 infections
 - 2 176 deaths
- Rate of complications comparable with literature

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CHUM **Conclusion**

- With the hypothesis of effectiveness of 50 %
 - 2 385 infections could be avoided
 - 1081 lifes could be saved
 - 51 M\$ costs could be reduced or transferred for others patients
 - 48 844 hospitalization days saved or 133 beds that could be used for others patients
 - 5 802 more patients admitted
 - 24 422 less patients waiting 48 hours or more in ER

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Conclusion

- The campaign is not only a must for patient safety but it is a cost-effective program
 - good for patients targeted by strategies but also for other patients;
 - good for clinicians good for all the system (ER, continuum of care, population satisfaction)
- Therefore GO for it !

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