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## Article:

Becker, D., Chit, A., DiazGranados, C. et al. (3 more authors) (2016) High-Dose Inactivated Influenza Vaccine is Associated with Cost Savings and Better Outcomes Compared to Standard-Dose Inactivated Influenza Vaccine in Canadian Seniors. *Human Vaccines & Immunotherapeutics*. pp. 3036-3042. ISSN: 2164-5515

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Table 1. Outcomes per vaccinee

Outcomes	Full analysis set			Cardiorespiratory condition analysis set		
	IIV-HD vaccine n=15,990	SD vaccine n=15,993	Difference (IIV-HD-SD)	IIV-HD vaccine n=15,990	SD vaccine n=15,993	Difference (IIV-HD-SD)
Uses of prescription medications	0.1977	0.1985	-0.0008	0.0085	0.0087	-0.0002
Uses of non-prescription medications	0.1811	0.1839	-0.0028	0.0061	0.0081	-0.0020
ER visits	0.0131	0.0128	0.0003	0.0004	0.0003	0.0001
Non-routine/urgent care visits	0.2257	0.2179	0.0078	0.0071	0.0074	-0.0003
Hospitalizations	0.0937	0.1017	-0.0080	0.0248	0.0296	-0.0048
Deaths	0.0052	0.0053	-0.0001	0.0016	0.0025	-0.0009
Life-years	9.8505	9.8502	0.0003	9.8851	9.8762	0.0089
QALYs	7.5533	7.5530	0.0003	7.5882	7.5813	0.0069

Table 2 Costs by resource item (in Canadian dollars/participant)

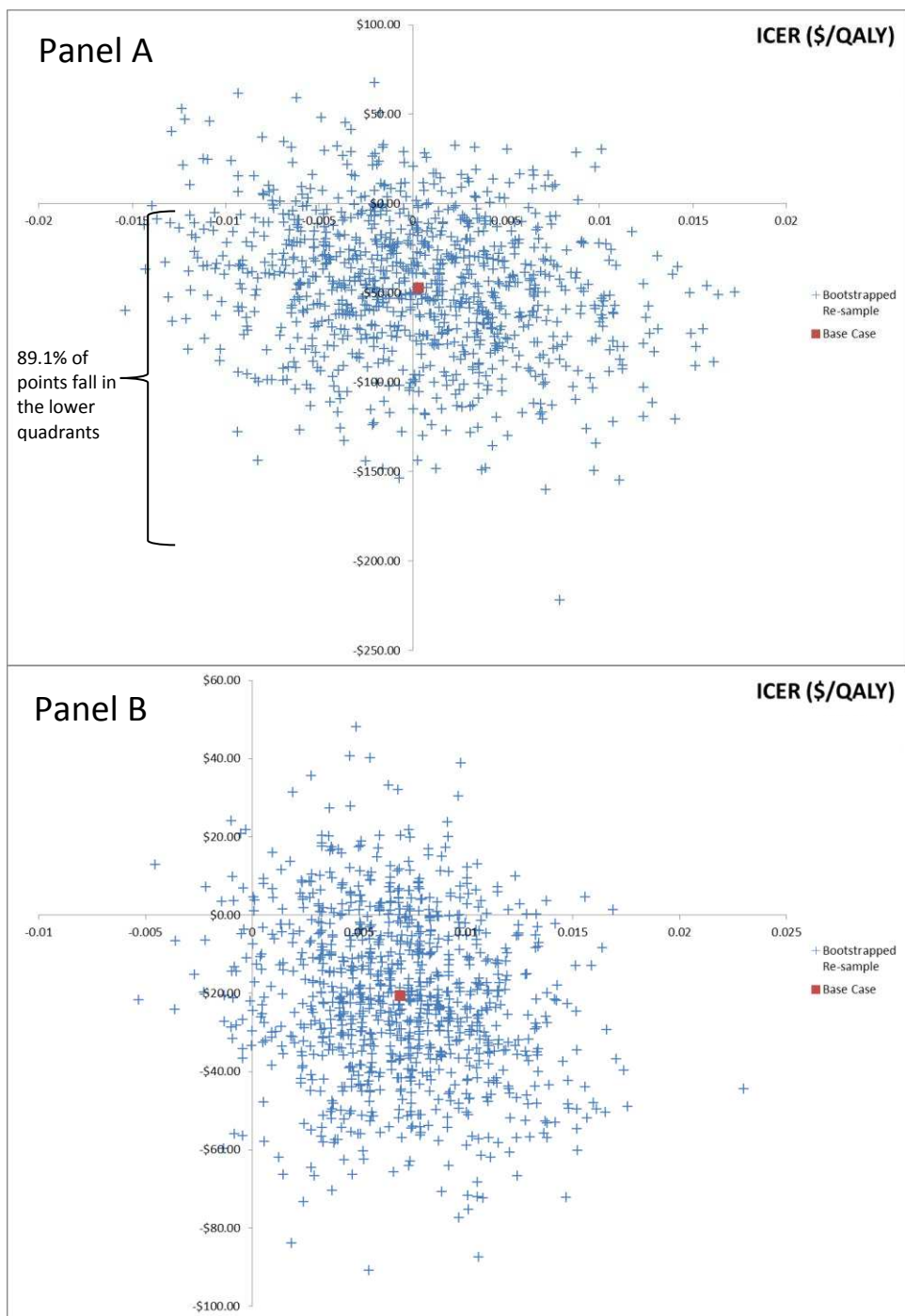
Outcomes	Full analysis set			Cardiorespiratory condition analysis set		
	IIV-HD vaccine n=15,990	SD vaccine n=15,993	Difference (IIV-HD-SD)	IIV-HD vaccine n=15,990	SD vaccine n=15,993	Difference (IIV-HD-SD)
Study vaccine	\$31.81	\$5.84	\$25.97	\$31.81	\$5.84	\$25.97
Prescription medications	\$3.45	\$3.45	\$0.00	\$0.18	\$0.19	-\$0.01
ER visits	\$6.63	\$6.47	\$0.16	\$0.19	\$0.13	\$0.06
Non-routine/ urgent care visits	\$19.21	\$18.55	\$0.66	\$0.60	\$0.63	-\$0.03
Hospitalizations	\$616.47	\$690.42	-\$73.95	\$170.61	\$217.26	-\$46.65
Total healthcare payer costs	\$677.57	\$724.72	-\$47.15	\$203.40	\$224.05	-\$20.65
Non-prescription medications	\$0.32	\$0.34	-\$0.02	\$0.01	\$0.01	\$0.00
Productivity losses	\$136.72	\$149.45	-\$12.73	\$27.28	\$35.94	-\$8.66
Total societal costs	\$814.61	\$874.52	-\$59.91	\$230.70	\$259.99	-\$29.29

Table 3. Cost utility analysis

Population	Treatment group	Full analysis set					Cardiorespiratory condition analysis set				
		Cost /Subject (\$CDN)	Difference in cost (\$CDN)	QALYs /Subject	Difference in QALYs	ICER (cost/QALY)	Cost /Subject (\$CDN)	Difference in cost (\$CDN)	QALYs /Subject	Difference in QALYs	ICER (cost/QALY)
Public Payer perspective											
All subjects	IIV-HD (n=15,990)	\$678		7.5533			\$203		7.5882		
	SD (n=15,993)	\$725	\$47	7.5530	-0.0003	Dominated	\$224	\$21	7.5813	-0.0069	Dominated
Subjects with 1+ comorbid conditions	IIV-HD (n=10,750)	\$831		7.5411			\$257		7.5853		
	SD (n=10,752)	\$876	\$45	7.5399	-0.0012	Dominated	\$293	\$36	7.5750	-0.0103	Dominated
Subjects 75 + years of age	IIV-HD (n=5,409)	\$892		7.5242			\$265		7.5807		
	SD (n=5,430)	\$892	<\$1	7.5194	0.0049	\$82	\$292	\$27	7.5659	-0.0148	Dominated
Societal perspective											
All subjects	IIV-HD (n=15,990)	\$815		7.5533			\$231		7.5882		
	SD (n=15,993)	\$875	\$60	7.5530	-0.0003	Dominated	\$260	\$29	7.5813	-0.0069	Dominated
Subjects with 1+ comorbid conditions	IIV-HD (n=10,750)	\$996		7.5411			\$292		7.5853		
	SD (n=10,752)	\$1,055	\$59	7.5399	-0.0012	Dominated	\$340	\$47	7.5750	-0.0103	Dominated
Subjects 75 + years of age	IIV-HD (n=5,409)	\$1,062		7.5242			\$303		7.5807		
	SD (n=5,430)	\$1,072	\$10	7.5194	-0.0049	Dominated	\$340	\$37	7.5659	-0.0148	Dominated

Table 4. Unit Costs of Resource Items (2014 Canadian dollars)

Resource Item	Cost/Unit	Reference
IIV-HD (Fluzone® High-Dose) vaccine	\$31.823/injection	[1]
SD vaccine	\$5.82/injection	[2]
Ibuprofen, 200 mg, three and a half times daily for 4 days (non-prescription)	\$1.54/course	[3]
Ibuprofen, 600 mg, three times daily for 4 days (prescription)	\$10.53/prescription	[4]
Oseltamivir, 75 mg, twice daily for 5 days (prescription)	\$52.45/prescription	[4]
Azithromycin, 500 mg day 1, 250 mg days 2-5 (prescription)	\$17.30/prescription	[4]
Emergency department visit	\$506.53/visit	[5, 6]
Non-routine medical office / urgent care visit	\$85.13/visit	[6]
Hospitalization per diems	dependent on ICD-10 code (n=146)	[7]
Daily wage	\$188.40/day	[8]



**Figure 1: Scatter plots representing the statistical uncertainty through a 1,000 bootstrapped samples.** Panel A) represents the full analysis set. 89% of bootstrapped data showed that IIV-HD was cost-saving. Panel B) represents data from the cardio-respiratory condition analysis set. 80% of the bootstrapped data showed that IIV-HD was cost-saving and more effective.

- [1] Centers for Medicare & Medicaid Services. Seasonal Influenza Vaccines Pricing. [cited 2014 13 February]; Available from: <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Part-B-Drugs/McrPartBDrugAvgSalesPrice/VaccinesPricing.html>
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- [7] Ontario Case Costing Initiative CAT tool. [cited 2015 16 January]; Available from: <http://www.occp.com/mainPage.htm>
- [8] Statistics Canada. Table 281-0063 - Employment and average weekly earnings including overtime (SEPH), seasonally adjusted, for all employees by industries classified using the North American Industry Classification System (NAICS), monthly (persons unless otherwise noted). [cited; Available from: <http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2810063>