

Seasonal Influenza Vaccinations Using Interventions with On-Site, Free, Actively Promoted Vaccinations - Healthcare Workers

Summary Evidence Table - Economic Review

Study Monetary Conversions	Location Population Time Horizon	Intervention Comparison	Effect Size	Program Costs	Economic Benefits	Economic Summary Measure
<p>Author (Year) Boersma (1999)</p> <p>Design: Observational study.</p> <p>Economic Analysis: Only cost of averted nosocomial infections.</p> <p>Conversions: Assume 1993 as base year. Reported in U.S dollars.</p>	<p>Location: Rapid City, SD</p> <p>Setting: Rapid City Regional Hospital System of Care</p> <p>Population: Health care workers in single urban hospital</p> <p>Comparison: No comparison group.</p> <p>Intervention Year: start 1994</p> <p>Time Horizon: time series 1994 to 1997</p>	<p>Program run by occupational health and infection control staff.</p> <p>Worksite vaccine campaign includes electronic media postings, publication of articles, walk-in clinic, mobile cart, targeted vaccinations at staff meetings, and distribution of vaccination timetables, \$50 gift certificate lottery, and candy for immunized.</p> <p>Comparison: None</p>	<p>Increased coverage from 35% in 1993 (Pre ramp up) to 72% in 1997.</p> <p>Number of nosocomial infections: 1993 6; 1994 1; 1995-96 0; 1997 2.</p>	<p>No program costs provided</p>	<p>Healthcare Cost: Cost of nosocomial infections care in pre intervention period: 1993 \$24,300 for 6 cases 1994 \$150 for 1 case 1995-1996 \$0 1997 NR for 2 cases</p> <p>Productivity: Authors mention savings were achieved in averted absences but no further information provided.</p>	<p>The time series show the positive effect of campaign on coverage and ultimately on nosocomial infections. There is no program cost. Hence, cost-effectiveness can't be evaluated. Reduction in infections from 6 at a cost of \$24,300 in 1993 to 1 infection costing \$150 in 1994. No cost of infection reported for Year 1997.</p>

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<p>Author (Year): Burls 2006</p> <p>Design: Review with modeled outcomes.</p> <p>Economic Analysis: Economic analysis is cost effectiveness.</p> <p>Conversion: Assumed 2003 as base year. Reported in U.K pounds.</p>	<p>Model Key Parameters: From cluster RCT in long term care geriatric hospital population in Scotland based on Potter 1997 and Carman 2000.</p> <p>Population: 1,437 patients with 2,335 staff</p> <p>Time horizon: Modeled</p>	<p>Campaign to vaccinate HCWs.</p> <p>Carman 2000 provided efficacy, vaccine cost, campaign, staff time, and staff absences.</p> <p>Study considered both influenza prevented in vaccinated HCWs and in protecting patients.</p> <p>Comparison: Modeled</p>	<p>Carman 2000 showed 5% uptake without campaign. 51% uptake with campaign. Potter 1997 showed a reduction in patient mortality from 17% to 10%.</p> <p>Base Case: Assumed life-expectancy at base of 2.75 for patients Difference in mortality of patients between situation with and without vaccination campaign: $(22.4 - 13.6) = 8.8\%$ Total life years saved = $8.8\% \times 2.75 \times 1437 = 348$ (Note that morbidity is not taken into account)</p>	<p>Program cost composed of: Campaign cost £0.70 per staff. Cost of vaccination £6.59 per vaccination</p> <p>Base Case: Vaccine Campaign £1634 Vaccine cost £7847 with campaign and £769 without campaign Time to vaccinate £8454 with campaign and £829 without Nurse time £1687 with campaign and £165 without</p>	<p>Healthcare Cost: Not considered</p> <p>Productivity: <u>Base Case</u> <u>Cost of Absences*</u> With campaign – £280,826 Cost of absences without campaign £326,580</p> <p>* Based on 7 hrs absences for vaccinated and 10 hrs for non-vaccinated</p>	<p>Program cost plus cost of absences</p> <p>Base Case Total cost of program plus cost of absence <i>with</i> campaign £300,449 Total cost of program plus cost of absence <i>without</i> campaign £328,344 Net savings = £27,895 Life Years Saved = 348</p> <p>Scenario Without Productivity Impact With promotion and uptake of 51% and without absenteeism the program has net cost of £18,000. With 350 life-years saved, the program costs £51 per life-year gained</p> <p>Pessimistic Scenario Under pessimistic scenario for baseline life-expectancy, mortality reduction, absenteeism, and program cost, but with 70% uptake, the program costs net of £35,000. With 86 life-years saved, the program costs £405 per life-year gained.</p> <p>Authors conclude cost-saving in base case and attractive cost-effectiveness even in pessimistic scenario.</p> <p>Notes Patient morbidity not considered. Health care utilization by workers and patients not considered Coverage rate of 51-70% appears high. High risk population of elderly patients, where mortality from complications is important risk</p>

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<p>Author (Year): Yassi 1991</p> <p>Design: Retrospective review of program.</p> <p>Economic Analysis: Cost benefit.</p> <p>Conversion: Assumed base year 1987. Reported in Canadian dollars.</p>	<p>Location: Manitoba, Canada</p> <p>Setting: Large tertiary hospital</p> <p>Year 1987-88 was chosen for analysis. Year 1986-87 was chosen for comparison because it had few isolates and insignificant morbidity.</p> <p>Intervention group 92 staff members who received vaccination in Fall 87.</p> <p>Comparison: 139 matched set of unvaccinated staff.</p> <p>Period of analysis: 1984 to 1988.</p>	<p>Promotion of free influenza vaccination for HCWs.</p> <p>Comparison: None</p>	<p>Main focus was uptake due to vaccination program for HCWs and for those HCWs in high risk contact, and its impact on absenteeism.</p> <p><u>Number of staff with high risk contacts (%) receiving vaccinations</u> 1984 80 (11%) 1985 69 (9%) 1986 85 (10%) 1987 50 (6%) 1988 57 (7%)</p> <p>Authors note that acceptance rates were low.</p>	<p>Program cost was \$20.47 per vaccinated person</p> <p>Included: Vaccine \$2.25; Supplies \$0.25; Nurse time \$5.87 Promotion \$5.27 HCW time \$5.25; Adverse effects \$1.58</p>	<p>Healthcare Cost: Not considered.</p> <p>Productivity: Vaccinated high-risk contacts showed no increase in absences during 1987-88 outbreak year. The comparison group showed increased absences at about 33%</p> <p>Source is personnel records for absences and salary and benefit. Note sample is small.</p>	<p>Observed absenteeism of high risk staff: Outbreak year 1987-88 was 4.9% Non-outbreak year 1986-87 was 3.8% Difference of 1%.</p> <p>Study states 70% of this 1% is avertable by vaccinations Averted sick time \$59.70 per vaccinated person</p> <p>Compare benefits of \$59.70 and program costs of \$20.47 Base case net benefit is \$39.23 per vaccinated person.</p> <p>Univariate sensitivity analysis shows there is positive net benefit for as low as 0.5% avertable absences.</p> <p>Notes Despite present reviewers' reservations about net benefit calculations, the study's estimate for program cost is useful.</p>