

School Health and Immunization

Interim Program Report – Vaccine Distribution and Wastage

2015

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Summary of Program Requirements (Ontario Public Health Standards, 2008):

Vaccine Preventable Diseases

Goal:

- To reduce or eliminate the burden of vaccine preventable diseases

Board of Health Outcomes:

- Health care providers are knowledgeable of improved practices related to proper vaccine management, including storage and handling.
- Health care providers adhere to proper vaccine management, including storage and handling practices and inventory management.
- Vaccines are distributed in an equitable and timely manner that adheres to proper vaccine management, including storage and handling practices.

Accountability Indicator: Health Protection Performance Indicator:

- Indicator 4.1, percent of Human Papilloma Vaccine (HPV) wasted that is stored/administered by the public health unit; 2014-2015 target 0.3%.
- Indicator 4.2, percent of influenza vaccine wasted that is stores/administered by the public health unit; 2014-2015 target .07%.

Highlights:

Vaccine Distribution

Public Health receives publicly funded vaccine (PFV) weekly from Ontario Government Pharmacy (OGP). Public Health is mandated to distribute PFV to physician offices, long-term care homes, hospitals, community clinics and group homes. During the 2015 year Public Health provided vaccine to 212 community partners in the Wellington, Dufferin and Guelph area. The total value of vaccine distributed in this year totaled \$8,260,125.18. Table 1 outlines the distribution of PFV by vaccine type, cost and quantity provided.

Table 1: Distribution of Publicly Funded Vaccine – January 2015 – December 2015

Vaccine Inventory	Disease in which it protects	Cost per Dose (\$)	No. Doses Distributed	Total Cost (\$)
Pediacel	Diphtheria, tetanus, pertussis, polio and Hib	51.24	10,705	548,524.20
Td Adsorbed	Tetanus and Diphtheria	10.61	4,608	48,890.88
IPV	Polio	41.77	183	7,643.91
HIB	Haemophilus influenza type b	37.79	27	1,020.33
MMR II	Measles, mumps and rubella	29.25	2,210	64,642.50
MMR Priorix	Measles, mumps and rubella	27.76	1,680	46,636.80
MMRV - Priorix Tetra	Measles, mumps and rubella and chickenpox	86.01	1,595	137,185.95
MMRV- ProQuad	Measles, mumps and rubella and chickenpox	95.21	570	54,269.70
MEN-C	Meningitis – C strain	44.50	3,575	16,687.50
Prevnar	Pneumococcal disease	90.00	8,910	801,900.00
Pneumococcal	Pneumococcal disease	18.36	4,270	78,397.20
Rotavirus	Rotavirus	79.67	4,937	393,330.79
Tdap - (Adacel)	Tetanus, diphtheria and pertussis	14.19	11,697	165,980.43
Tdap - (Boostrix)	Tetanus, diphtheria and pertussis	27.41	100	2,741.00
Tdap-IPV (Adacel-IPV)	Tetanus, diphtheria, pertussis, polio	19.20	3,955	75,936.00
Tdap-IPV (Boostrix-IPV)	Tetanus, diphtheria and pertussis, polio	48.72	615	2,971.92
VARIVAX III	Varicella	65.92	3,750	247,200.00
VARILRIX	Varicella	59.12	670	39,610.40
Mantoux/ Tubersol	TB Skin Testing	27.54	1,900	52,326.00

Vaccine Inventory	Disease in which it protects	Cost per Dose (\$)	No. Doses Distributed	Total Cost (\$)
HEP A (ped)	Hepatitis A	22.11	58	1,282.38
HEP A (adult)	Hepatitis A	44.20	24	1,060.80
HEP A (adult)	Hepatitis A	42.45	47	1,995.15
HEP B (ped)	Hepatitis B	10.90	41	446.90
HEP B (adult)	Hepatitis B	22.12	3,748	82,905.76
HEP B (school)	Hepatitis B	22.12	1,478	32,693.36
HPV	HPV	143.73	18,727	2,691,631.70
Influenza - Fluad	Influenza	12.40	2,450	30,380.00
Influenza - FluViral	Influenza	8.00	54,530	452,240.00
Influenza - FluZone	Influenza	8.00	8,840	70,720.00
Influenza- Influxac	Influenza	7.44	16,040	119,337.60
Influenza – Flumist	Influenza	18.00	2,412	43,416.00
Menactra	Meningitis – Men –C-ACYW	110.00	17,241	1,896,510.00
Rabies - IMOVAX	Rabies Post Exposure	175.94	135	23,751.90
Rabies - RabAvert	Rabies Post Exposure	171.88	69	11,859.72
RIG - HYPERRAB	Rabies Immune Globulin Post Exposure	215.36	65	13,998.40
		TOTAL	191,862	\$ 8,260,125.18

Vaccine Wastage

Public Health is mandated to report and return publicly funded vaccine to the MOHLTC that has been deemed wastage. The new Panorama *Inventory Management Module* for vaccines was implemented at Wellington-Dufferin-Guelph Public Health (WDGPH) in June 2015. Prior to this module each health unit monitored the vaccine supply manually. With the switch occurring half way through the year, there are some variances in actual numbers that have been resolved for the 2016 year.

This new module will soon have several new components to assist with monitoring vaccine on site and in the community. Some of the new components include; vaccine stored by user, vaccine wasted by user, date of expiry for vaccines stored by user. Until these new components are available, there is limited information that can be drawn from the database for the 2015 year.

In 2015, WDGPH distributed \$8,260,125.18 worth of vaccine accounting for 191,862 doses of vaccine. There was a total of \$75,081.47 worth of vaccine wasted in the same year accounting for 0.9% of total value of vaccine distributed by the health unit. Table 2 outlines the vaccine wasted in 2015 by type.

The Ministry of Health and Long Term Care's, Vaccine Storage and Handling Protocol requires that Health Unit's have no more than 5% wastage for any vaccine product. In 2015, we have a total wastage 1.5% of vaccine by dose although, some vaccines (highlighted in yellow) went above the 5% protocol. These wastages resulted from external cold chain failures and over-ordering. Future reports will have the capability of outlining these failures by type and provider.

Public health nurses continue to work with community partners to decrease vaccine wastage. Measures to reduce wastage include an annual cold chain inspection for all facilities and spot inspections following a reported cold chain incident. Education is also provided to healthcare providers at time of the cold chain incident and at annual inspections. WDGPH is currently working with the Provincial Panorama group to develop guidelines for monitoring vaccine in the community to address issues such as vaccine expiry and vaccine quantity stored to reduce the incidence of vaccine wastage in these circumstances.

Table 2: Wastage by Vaccine for 2015

Vaccine	Number of Doses Distributed	Number Doses Wasted	Amount Wasted by Product (\$)	Percentage by Product	Reason for wastage
Pediacel	10705	102	5,226.48	1.0%	
Td Adsorbed	4608	232	2,461.52	5.0%	
IPV	183	19	793.63	10.4%	External cold chain failure
HIB	27	1	37.79	3.7%	
MMR II	2210	37	1,082.25	1.7%	
MMR Priorix	1680	39	1,082.64	2.3%	
MMRV - Priorix Tetra	1595	44	3,784.44	2.8%	
MMRV- ProQuad	570	12	1,142.52	2.1%	
MEN-C	3575	71	3,159.50	2.0%	
Prevnar	8910	71	6,390.00	0.8%	
Pneumococcal	4270	154	2,827.44	3.6%	
Rotavirus	4937	43	3,425.81	0.9%	
Tdap - (Adacel)	11697	156	2,213.64	1.3%	

Vaccine	Number of Doses Distributed	Number Doses Wasted	Amount Wasted by Product (\$)	Percentage by Product	Reason for wastage
Tdap - (Boostrix)	100	9	246.69	9.0%	
Tdap-IPV (Adacel-IPV)	3955	68	1,305.60	1.7%	
Tdap-IPV (Boostrix-IPV)	615	16	779.52	2.6%	
VARIVAX III	3750	57	3,757.44	1.5%	
VARILRIX	670	66	3,901.92	9.9%	External cold chain failure
Mantoux/ Tubersol	1900	104	2,864.16	5.5%	Over ordering/ expired
HEP A (ped)	58	8	176.88	13.8%	External cold chain failure
HEP A (adult)	24	8	353.60	33.3%	External cold chain failure
HEP A (adult)	47	19	806.55	40.4%	External cold chain failure
HEP B (school)	1478	26	575.12	1.8%	
HPV*	18727	49	7,042.77	0.3%	
Influenza – Fluad*	2450	68	843.20	2.8%	
Influenza – FluViral*	54530	574	4,592.00	1.1%	
Influenza – FluZone*	8840	776	6,208.00	8.8%	
Menactra	17241	21	2,310.00	0.1%	
Rabies - IMOVAX	135	2	351.88	1.5%	
Rabies - RabAvert	69	6	1,031.28	8.7%	External cold chain failure
RIG - HYPERRAB	65	20	4,307.20	30.8%	External cold chain failure
	Total	2,878	75,081.47		

*vaccines listed in the Accountability Agreement as performance indicators for the 2014-2015 years.

Variations or discrepancies: Yes No

Accountability Indicator

WDGPH has 2 accountability indicators related to vaccine wastage:

Indicator 4.1 was targeted for 0.3% and WDGPH actual was 1.7% for the 2014-2015 school year. There were 49 doses of HPV vaccine wasted in the health unit in 2015 related to over ordering in the The ministry requested a performance report related to this indicator and it was submitted in March 2016. The report outlined the reasons for vaccine wastage being expired vaccine on-site in health unit fridges. WDGPH has

set additional monitoring requirements for on-sites fridges and plans to utilize the additional monitoring tools available in Panorama (once available) to reduce the risk of this wastage from occurring in the future.

Indicator 4.1 was targeted for 0.3% and WDGPH actual was 1.7% for the 2014-2015 school year. The majority of HPV vaccine stock that was wasted was dated to expire in August 2015. This vaccine stock was spread across 4 office locations. Three doses of this vaccine were wasted because they were pre-drawn at one of our clinics but the students subsequently refused the vaccine.

WDGPH offers catch-up clinics in the summer months for eligible students to complete their HPV vaccine series. HPV was ordered and stored for these clinics based on anticipated participation rates. However, our vaccination rate for HPV vaccine uptake dropped by 1.1% in the 2014-2015 school year. As a result, our forecast for the June to August catch-up clinics was higher than our actual uptake.

We transferred to the Panorama Inventory Module in late June 2015 and were continuing to learn the program. In addition, during the months of July and August, we had several fridge failures that resulted in the need to relocate vaccine from various office locations. We did not become aware of the expiry date until August 2015, by which time it was too late to redistribute and use the vaccine prior to expiry.

The ministry requested a performance report related to indicator 4.2 and it was submitted in March 2016.

Indicator 4.2 was targeted for 0.7% and WDGPH actual was 1.7% for the 2014-2015 influenza year. These wastages were the result of external cold chain failures and over ordering of vaccine by external providers. The ministry did not request a performance report related to this indicator.

WDGPH has moved to a centralized inventory control model where vaccines are packed and distributed from one location to physicians, school clinics and facilities. Weekly inventory counts are done in each office and internal stock requisitions are adjusted accordingly. During these inventory counts, vaccine expiry dates are checked and those vaccines with an approaching expiry date of 3 months or less are flagged for immediate use and redistribution. WDGPH has set additional monitoring requirements for on-sites fridges.

Syringes will not be pre-drawn until full consent has been obtained to immunize. All of these initiatives/resolutions were fully implemented as of January 2016. WDGPH plans to utilize the additional monitoring tools available in Panorama (once available) to reduce the risk of this wastage from occurring in the future.