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**Canadian Immunization Conference
Conférence canadienne sur l'immunisation**



Disclosure Statement



- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Reducing vaccine wastage in First Nation communities

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Overview

- Introduction and context
- Vaccine wastage
- Methodology
- Challenges
- Results
- Engineered solutions
- Conclusions



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Northwestern Health Unit

- 171,288 km²
- Approx 82,000 people
 - 19 municipalities
 - 39 First Nations
 - 2 unincorporated territories
- Vaccine depots
 - Kenora
 - Meno Ya Win

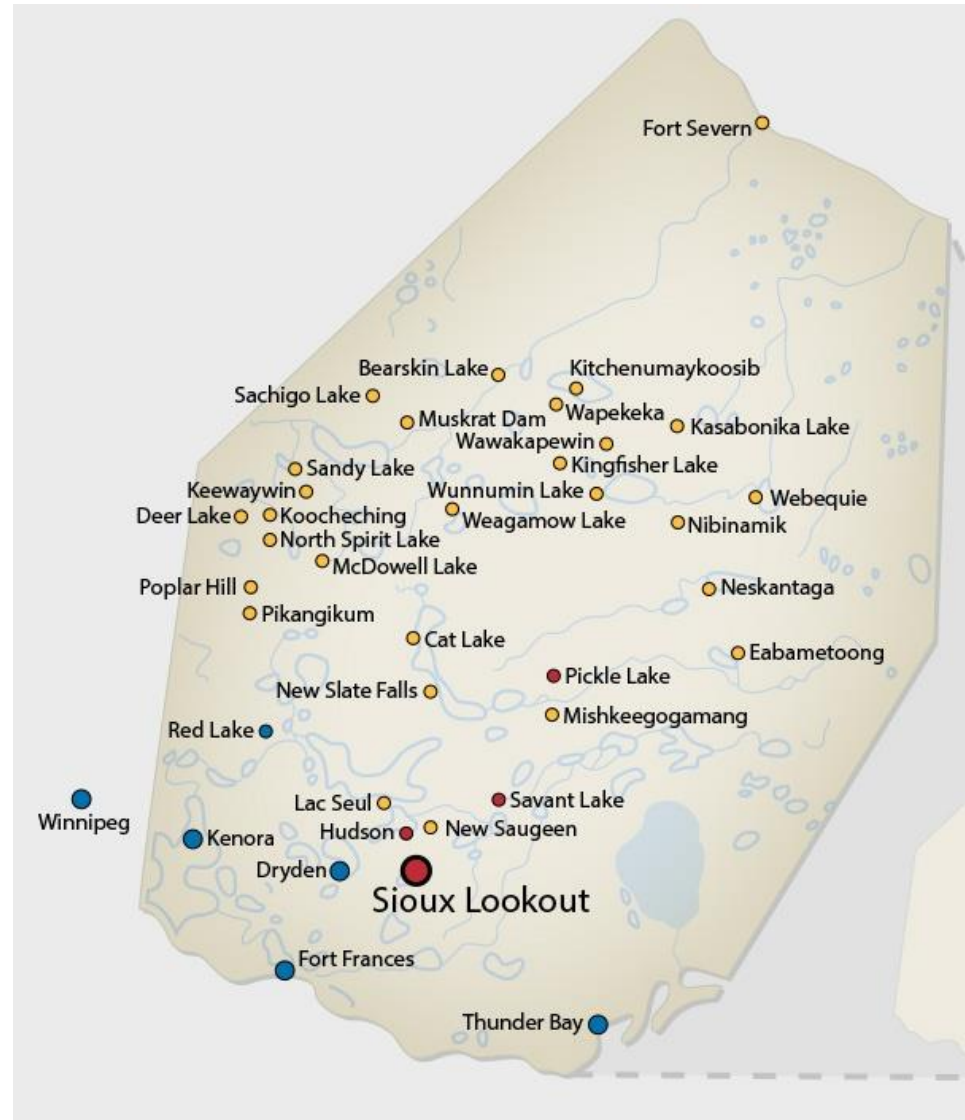


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The challenges

- Distance
- Accessibility
- Seasonal temperature variation
- Staff turn-over



Vaccine wastage

During

- On-site handling
- On-site storage
- Transportation between storage sites



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Methodology

- 2011 to 2013 data from Meno Ya Win and MOHLTC
- Descriptive analysis of wastage
- Determine primary cause of wastage
- Assign costs (based on vaccine costs only)
- Investigate engineered solutions

Limitations

- Multiple causes listed
- Multiple staff filled out the forms
- “Other” used as catch-all cause
- Forms capture cause but not when in life cycle (i.e., transportation vs storage)
- Could not determine / include human service and transportation costs associated with return and re-supply



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Results

year	# of events	# of communities	Total doses ordered	Doses wasted	%
2011	27	14	11,926	857	7.2
2012	28	15	14,445	1067	7.4
2013	25	12	13,739	880	6.4
	80	22 of the 24 communities	40,120	2,804	7.0

Results

Primary cause of wastage	%
Equipment failure	11.3
Fridge failure	9.6
Power outage	19.0
Human error / other	60.1
Total	100.0

Results

Type	Average annual cost	%
Transport failures	\$14,133.57	45.0
Power failures	\$5,967.52	19.0
All other causes	\$11,306.85	36.0
Total	\$31,407.94	100.0

2010 NWHU example

- Description
- Pros
- Cons
- Current use
- Results of implementation



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Passive coolers

- Description
- Pros
- Cons
- Current use
- Results from pilot testing



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Passive coolers

- Example/ projection only
- \approx \$665 each
- 20 coolers
- \$13,300
- Transport-related wastage is costing \$14,133 per year



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Passive Fridges

- Description
- Pros
- Cons
- Current use
- Results from pilot testing



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Passive Fridges

- \approx \$3,500 each plus shipping (unknown cost)
- \approx \$84,000 for all 24 communities
- Wastage related to power outages is costing \$5,967 per year



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Conclusions

- Passive coolers:
 - Pay for themselves within 1 year
 - Address 45% of the vaccine wastage related to cold chain failures in these 24 communities
- Fridges:
 - May not be cost effective



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Questions ?

Comments ?

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