

COOL Project: maintaining the cold chain with offsite immunisations

Task from NZ Ministry of Health:

- Investigate, review, select and test equipment
- Provide purchasing and protocol recommendations

Method:

- Survey School-Based Immunisation Programme providers
- Doc review
- Select equipment
- Field testing by partner SBIPs
- Set up tests
- Controlled testing
- Develop & field test protocol
- Reporting



COOL Project: testing with chilly bin as the variable

Time	Vaccine doses in	Vaccine doses out	Total doses in CB
Bin from fridge	140 doses		140
9.15am		70	70
10.30am		20	50
11am		20	30
1pm		10	20
2pm		10	10
4.30pm to fridge		10	0



No cooling added/removed during testing



Size of chilly bin	Small	Medium	Large
Type of vaccine	Cardinal	Roostix	Roostix
Number of doses	60	80	140
Length of test:	5.5 hours	8.5 hours	8.5 hours
Number of openings:	6	5	5



Label	Chilly Bin	Wacoa Bin	Thermo Bin	Thermo Bin	Thermo Bin
Chilly Bin model	Wacoa Bin	Thermo Bin	Thermo Bin	Thermo Bin	Thermo Bin
Duration of test	4h 15min	4h 15min	4h 15min	4h 15min	4h 15min
Lowest temperature (°C)	5.0	10.0	10.0	10.0	10.0
Highest temperature (°C)	5.0	10.0	10.0	10.0	10.0
Average reading (°C)	5.0	10.0	10.0	10.0	10.0
Standard deviation (°C)	1.7	2.2	2.2	2.2	2.2
Mean (°C)	5.0	10.0	10.0	10.0	10.0
Time below 10°C (min)	0	0	0	0	0
Time below 5°C (min)	0	0	0	0	0
Length of time and (°C) excursion (min)	NA	NA	NA	NA	NA
Time above 10°C (min)	0	0	0	0	0
Time above 5°C (min)	0	0	0	0	0
Length of time and (°C) excursion (min)	0	0	0	0	0

The Wacoa performed best in the average mean temperature of 10.0°C. Its temperature range was the narrowest and it stayed below 10°C for almost 10 minutes longer than the next best performing chilly bin, the Thermo.



COOL PROJECT: outcomes

COOL Project Report

95 pages to MoH

Aug 2017

COOL Project Stakeholder Summary

13 pages incl chilly bin packing protocol for offsite immunisations

Feb 2018

Products and protocol recommended, not mandated

CHILLY BIN	SMALL 20L - 40L	MEDIUM 20L - 40L	LARGE 40L - 50L
Brand	Wacoa/Domestic Cool-ice	Wacoa/Domestic Cool-ice	Wacoa/Domestic Cool-ice
Size	1.1m	1.1m	1.1m
Weight	1.1kg	1.1kg	1.1kg
Dimensions (L x W x H)	300 x 240 x 300mm	300 x 240 x 300mm	300 x 240 x 300mm
Available from	Burncocks, Hunting and Fishing, Bell Technology, RV World	Burncocks, Hunting and Fishing, Bell Technology, RV World	Burncocks, Hunting and Fishing, Bell Technology, RV World
COOLING PRODUCT	Thermomax Cool Wrap	Thermomax Cool Wrap	Thermomax Cool Wrap
Brand	Thermomax	Thermomax	Thermomax
Size (incl gill)	22.30 per sheet (1 sheet = 2x 3x4 cells, perforated)	22.30 per sheet (1 sheet = 2x 3x4 cells, perforated)	22.30 per sheet (1 sheet = 2x 3x4 cells, perforated)
Volume	1.2m cells	1.2m cells	1.2m cells
Approximate weight	45kg	45kg	45kg
Position of cooling product	Top only, above insulating matting	Top only, above insulating matting	Top only, above insulating matting
Available from	Fishing Industry Services Limited	Fishing Industry Services Limited	Fishing Industry Services Limited
Availability	Reserve at least every year or earlier if deteriorating	Reserve at least every year or earlier if deteriorating	Reserve at least every year or earlier if deteriorating
INSULATION	Fractalix Sympa Nova matting	Fractalix Sympa Nova matting	Fractalix Sympa Nova matting
Brand	Fractalix	Fractalix	Fractalix
Size (incl gill)	2.4m x 1.0m x 10mm white	2.4m x 1.0m x 10mm white	2.4m x 1.0m x 10mm white
Position	Above & below vaccine	Above & below vaccine	Above & below vaccine
Bottom mat	Cut to size of bottom	Cut to size of bottom	Cut to size of bottom
Top mat	Cut bigger to go 1.2m up sides	Cut bigger to go 1.2m up sides	Cut bigger to go 1.2m up sides
Available from	Mitre 10, Burncocks, Para Rubber, Plastic Box	Mitre 10, Burncocks, Para Rubber, Plastic Box	Mitre 10, Burncocks, Para Rubber, Plastic Box
DATALOGGER	LogTag T1010-10H	LogTag T1010-10H	LogTag T1010-10H
Brand / Model	LogTag	LogTag	LogTag
Size (incl gill)	Catalogue \$115.00, datalogger probe \$115, software is free, USB interface \$100.00	Catalogue \$115.00, datalogger probe \$115, software is free, USB interface \$100.00	Catalogue \$115.00, datalogger probe \$115, software is free, USB interface \$100.00
Position of logger	Outside of chilly bin, using Velcro straps allows for best position for reading logger	Outside of chilly bin, using Velcro straps allows for best position for reading logger	Outside of chilly bin, using Velcro straps allows for best position for reading logger
Probe medium	In polyethylene foam block (or alternatively in a bin of vaccines)	In polyethylene foam block (or alternatively in a bin of vaccines)	In polyethylene foam block (or alternatively in a bin of vaccines)
Available from	Beck Technology	Beck Technology	Beck Technology

www.immune.org.nz/health-professionals/cold-chain

