



medihood

# The **McMonty** Patient Isolation Hood

Forbes McGain

Intensive Care Unit, Western Health, Melbourne

(Jason Monty et al, Sam Bates et al, Roger Cameron)

---

**Address**

medihood  
673 Spencer Street  
West Melbourne  
VIC, 3003

---

**Phone**

Phone: (03) 03 8413 6600

---

**Online**

Email: [info@medihood.com.au](mailto:info@medihood.com.au)  
Website: [www.medihood.com.au](http://www.medihood.com.au)

## Disclosure

---

Patent for the Isolation Hood ( UniMelb / Western Health )  
Donor Funding for first 17 hoods from Western Health / UniMelb

## The Problems

---

Reports of healthcare worker infection and deaths  
Array of strategies being employed to minimise risk  
Emerging evidence that noninvasive ventilation was good in COVID-19  
Many patients with suspected COVID need high flow oxygen and NIV

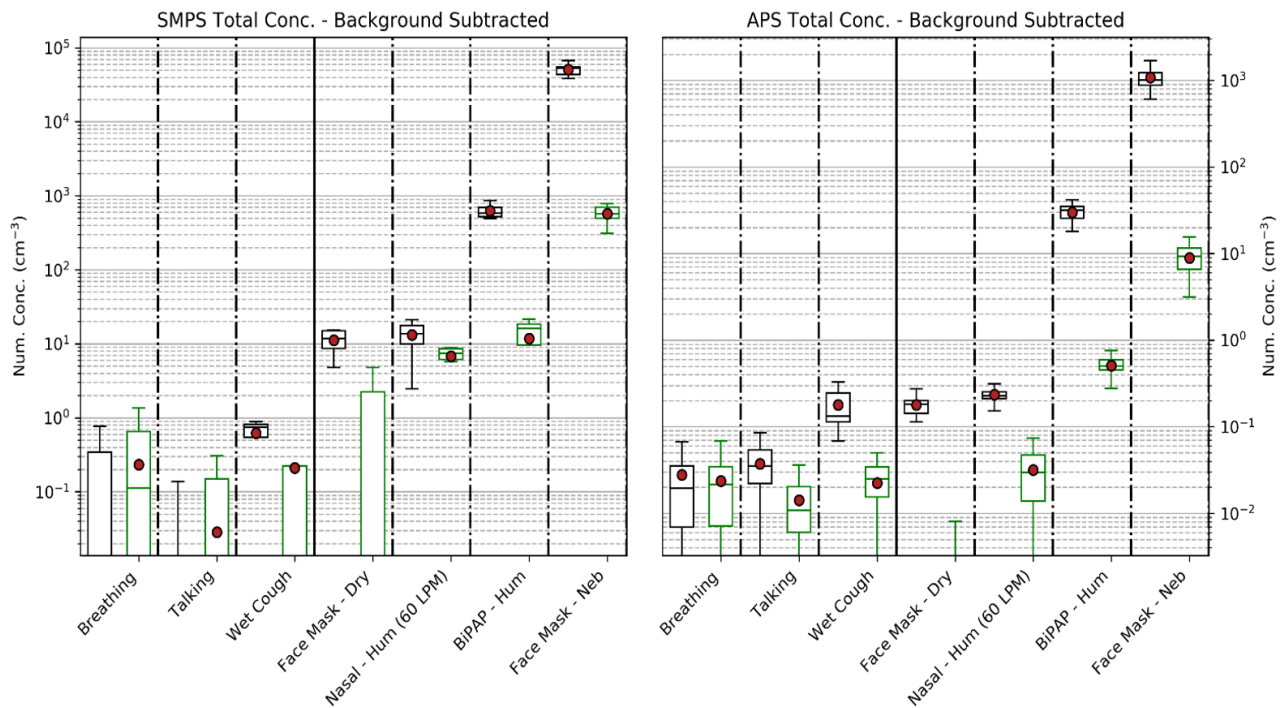


**So, what did we do at Western Health's Open Planned ICUs in early March, 2020?**

## We built a personal ventilation pram hood!



## McMonty Effectiveness Against Aerosol Generation



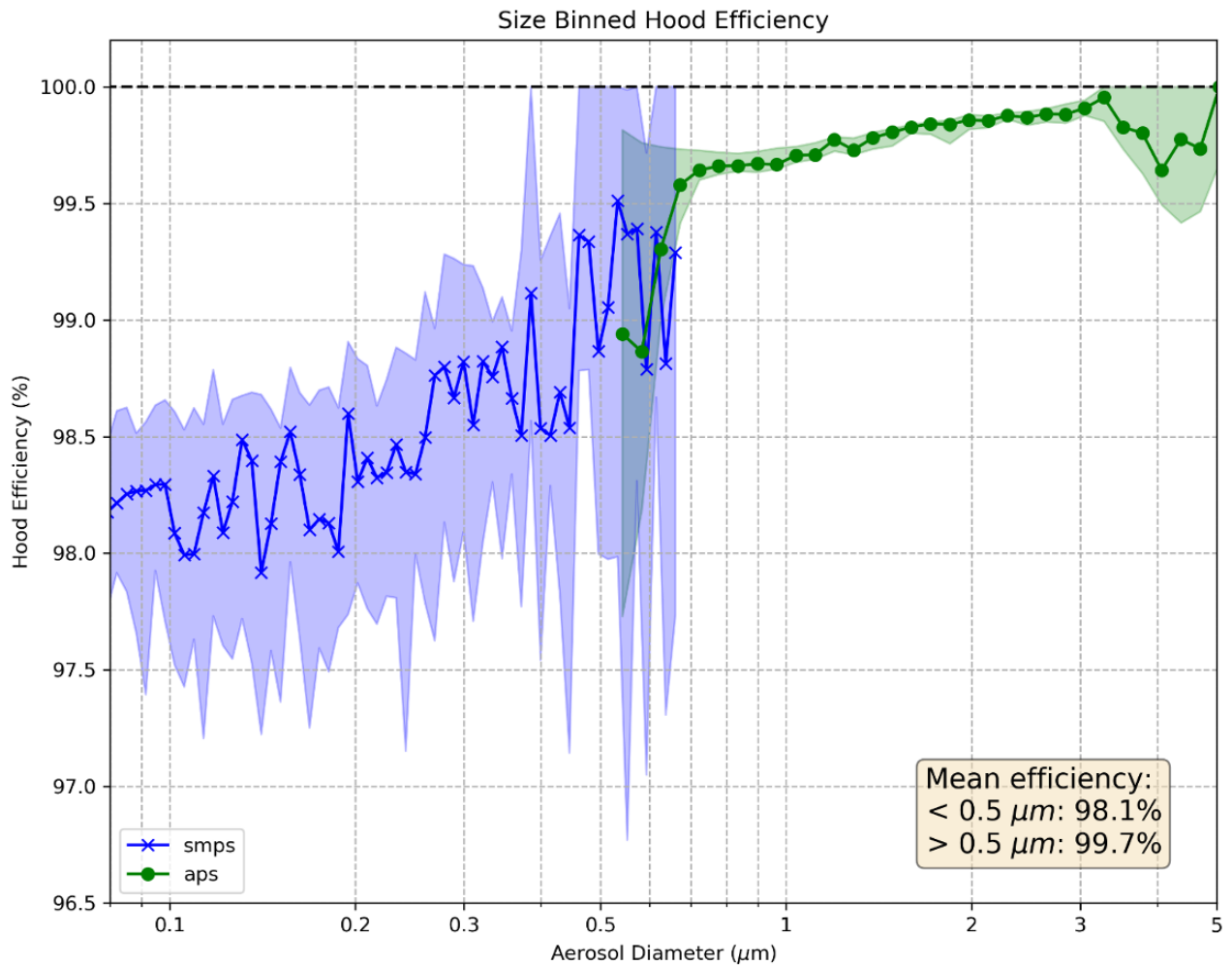
**The Isolation Hood prevents more than 98% of aerosols escaping:  
i.e. similar to wearing an N95 mask when you're not**

# McMonty Efficiency

## Repeated testing to nebulisation (29 tests total)

Blue= SMPS data (smaller aerosols)

Green= APS data (larger aerosols)



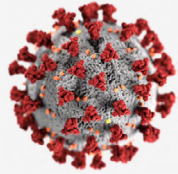
**100**

**air changes per hour  
inside the hood**

**VS**

**12 for the NPR**

**6 for the ICU**



**Then, in late June 2020, COVID-19 Surged into Melbourne...**



Intensive care filling up fast

## **A Prospective, Interventional Study: Questionnaires and Engineering Improvements**

- At Western Health's ICUs (26 beds total)
- Staff Questionnaires (18 questions)
- Patient Questionnaires (9 questions)
- Engineering improvements
- June-July 2020
- With ongoing use of the isolation hoods thereafter
- Observational data: HCW COVID-19 infection rates from Vic. Dept Health

## **Questionnaires**

- 50% of questions had to be answered for inclusion
- 'Favourable' (50% positive)
- >75% favourable response rate across questionnaires was deemed isolation hood endorsement
- 20 patients studied (ICU and ED)
- COVID (12) and sCOVID (8)
- 46 ICU patients with COVID treated in total

## Attack Rates 1 20/6/2020 to 27/9/2020

---

- The attack rate of COVID-19 among Western Health's registered nurses (RNs):
- 3.4% (102/2,994) Average for ALL RNs
- 2.2% (3/138) ICU
- 13.2% (26/197) Geriatric wards
- 18.3% (32/175) COVID-19 Wards

## Attack Rates 2 20/3/2020 to 27/9/2020

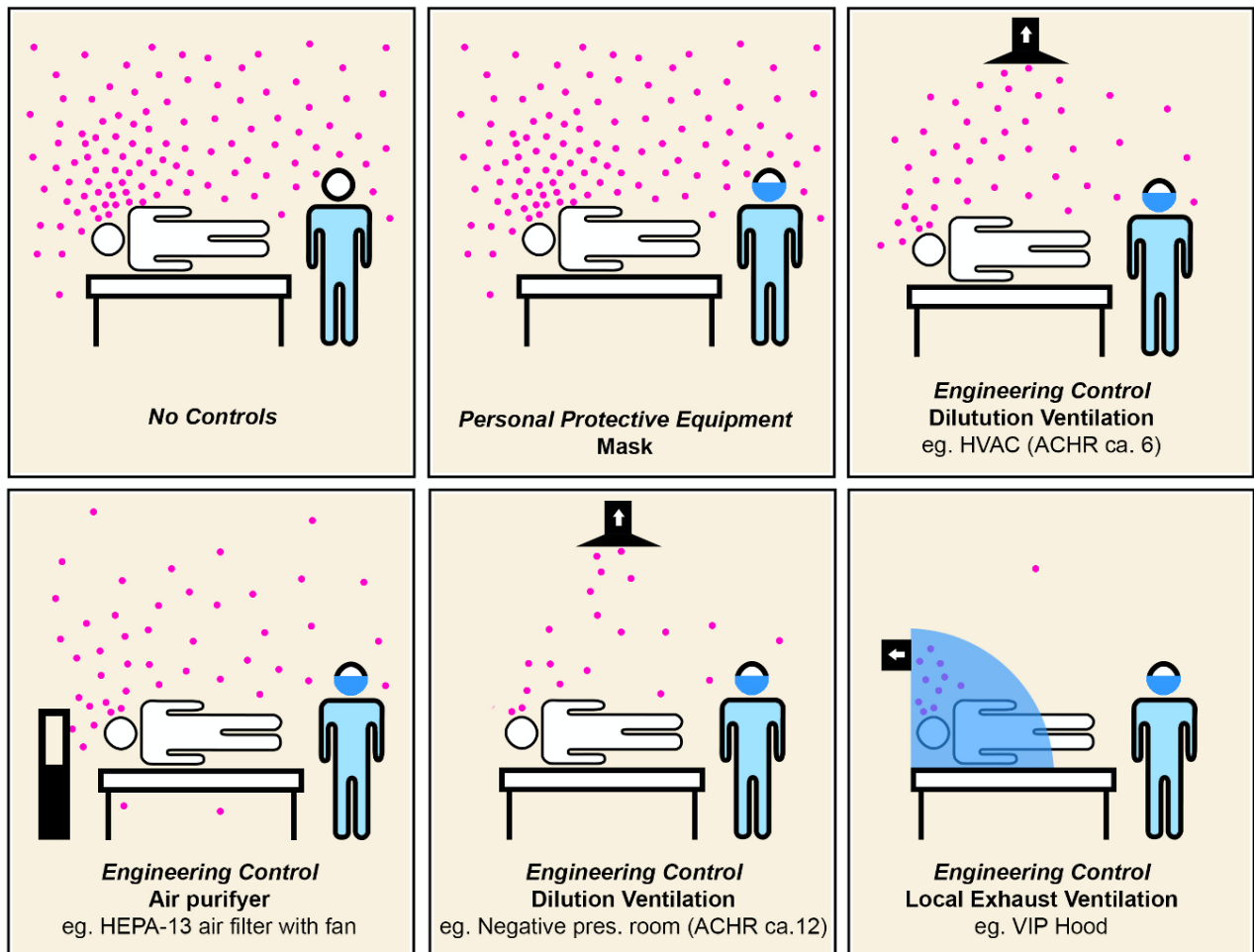
---

- The attack rate of COVID-19 among medical staff was:
- 0.7% (4/607) senior doctors
- 2.1% (24/932) junior doctors
- 6.7% (2/30) Geriatrics medical team
- 8.6% (3/35) ICU

## Attack Rates 3 20/3/2020 to 27/9/2020

---

- ICU nurses had the lowest attack rate for nurses anywhere
- ICU doctors had the highest attack rate for doctors anywhere
- This is the wrong way around (nurse exposure proximity and duration)
- There could be many reasons (patient infectivity, small numbers, PPE vigilance, home environments, cleanliness, etc.)...
- The hood can't always protect you (e.g. when you're intubating...)



## The McMonty is located in

---



### The McMonty in use at Western Health intensive care ICU

- Wards
- EDs
- Open planned ICUs
- Rural hospitals

[forbes.mcgain@wh.org.au](mailto:forbes.mcgain@wh.org.au)

## Acknowledgements

---

Western Health: Sam Bates and the ICU Research Team, Craig French, Marion Kainer, Bill Karanatsios, ICU Nurses and Doctors

UniMelb Mech. Engineering: Jason Monty, Will Lee, Kevin Kevin, Max Rounds, Geoff Duke

---

#### Address

medihood  
673 Spencer Street  
West Melbourne  
VIC, 3003

#### Phone

Phone: (03) 03 8413 6600

#### Online

Email: [info@medihood.com.au](mailto:info@medihood.com.au)  
Website: [www.medihood.com.au](http://www.medihood.com.au)

# The McMonty by medihood

**Effectively reduces  
aerosol spread by >99%.  
Keeping clinicians safe  
from respiratory infectious  
diseases; ensuring patients  
receive best care.**