Engaging with small business owners to improve indoor air quality

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Challenges to improving ventilation

Capability

A basic understanding of ventilation

"Having an exchange of air really reduces the risk of picking [COVID] up. I think I only understand on a very basic level because of how much we've been encouraged to be outside. I don't particularly understand the science behind it"

Opportunity

Limited opportunities to improve ventilation

"**….but apart from saying open doors or windows, there wasn't a vast amount of guidance that I could find**"

Motivation

Effective ventilation is not a top priority

"If they're cold they will close the door, and they will complain if they're cold."

"Noise complaints put our license at risk… so definitely, ventilation's not really high on the agenda"

PROTECT
A COVID-19 National Core Study

Developing an intervention

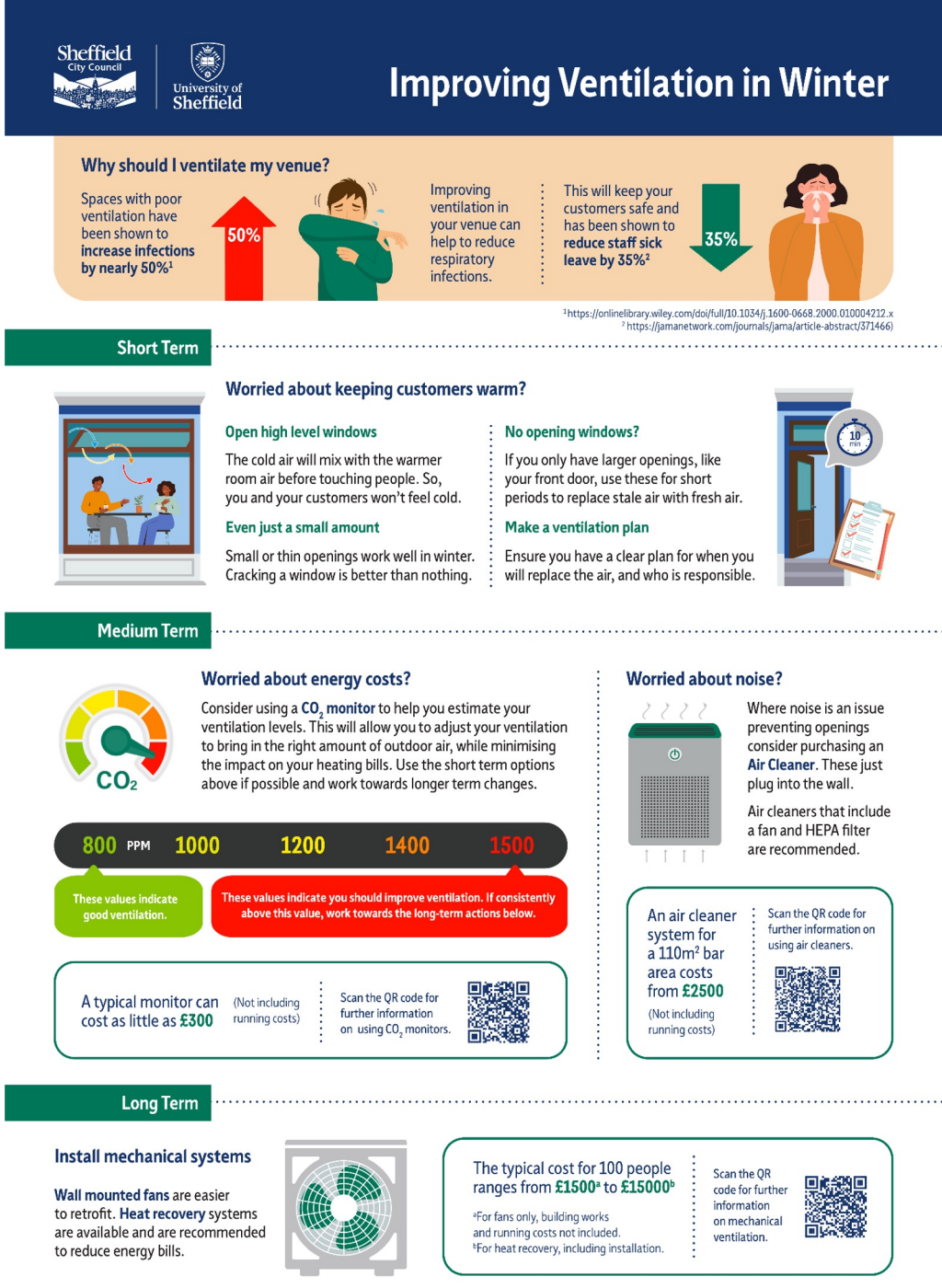
Workshops with 3x venue owners/managers and EHOs

Workshop with 200 EHO's covering UK from Devon to Shetlands

Online surveys with 63 owners/managers

https://iv4bv.sites.sheffield.ac.uk/

Breathing City
Future Urban Ventilation Network



Testing the intervention Methods

Field Study

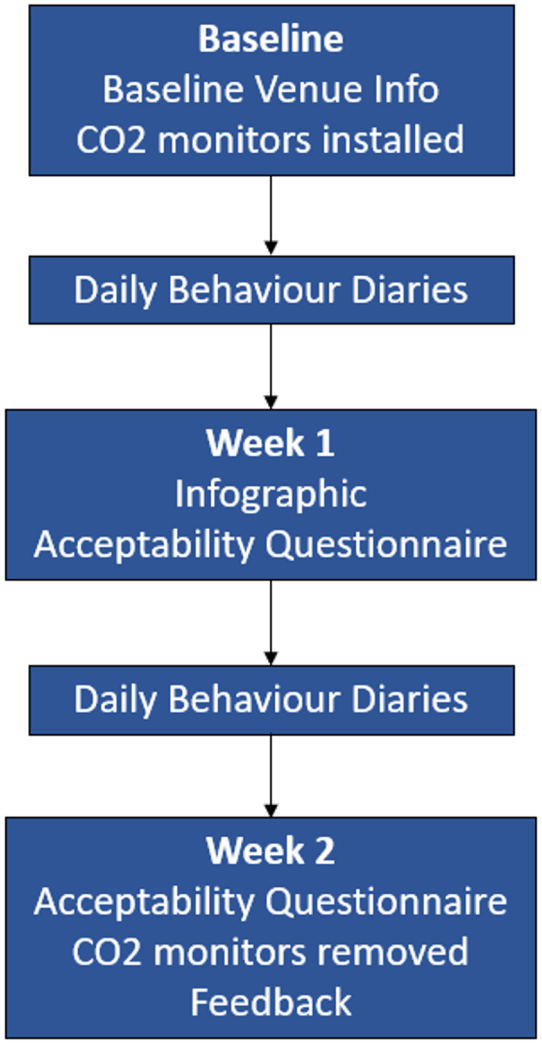
9 local small-scale hospitality venues and welcoming spaces with natural ventilation/wall-mounted extract(s)

CO_2 Monitoring

- Two Technologies
  - Wall mounted sensor with display
  - Cloud connected sensor with app
- Sensors located away from tampering and breathing zone

Behavioural

- Behaviour Diaries
- Acceptability Questionnaires



Testing the intervention Methods

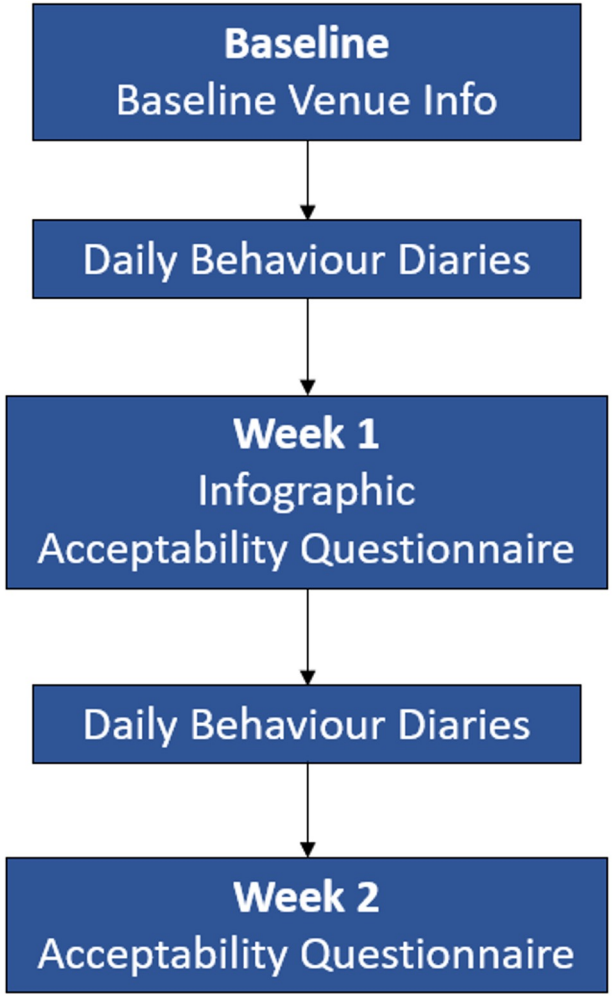
Online study

Online study

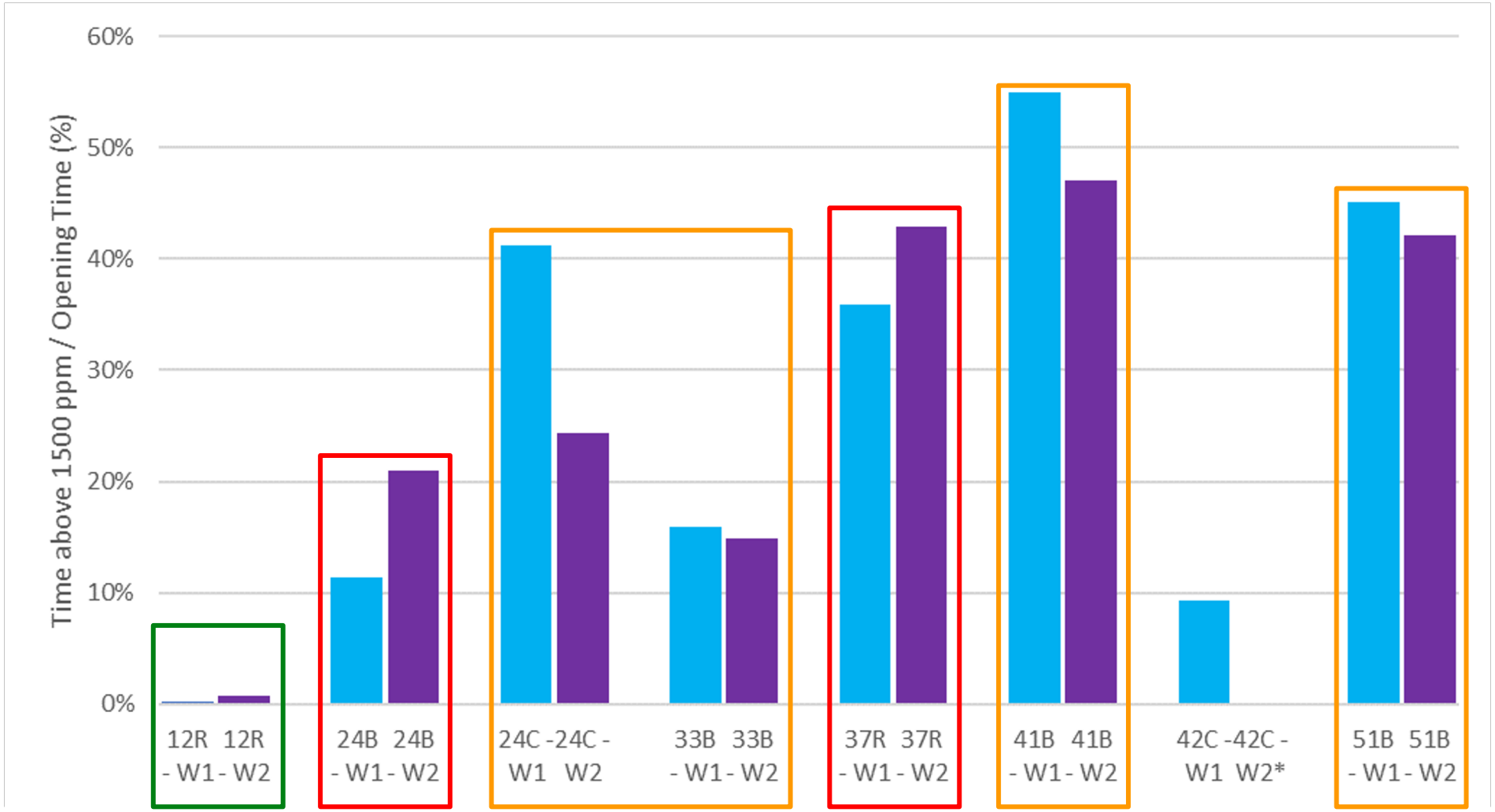
123 hospitality venues, other businesses (e.g. retail) and welcoming spaces in UK with natural ventilation/wall-mounted extract(s)

Behavioural

- Behaviour Diaries
- Acceptability Questionnaires

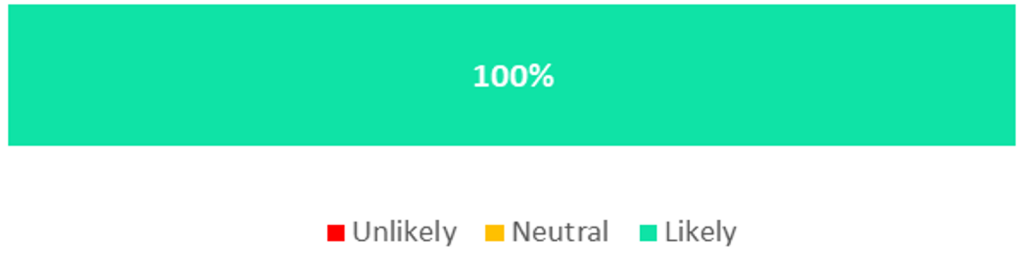


Field Study: Overview of CO_2 results



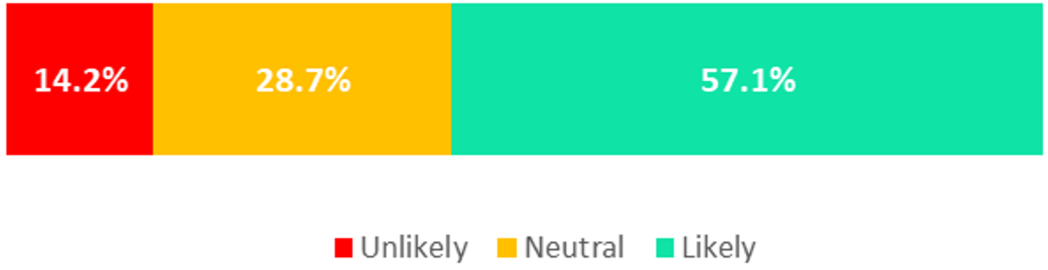
Field Study- Likelihood of Making Changes

Short-Term Actions (N = 7)

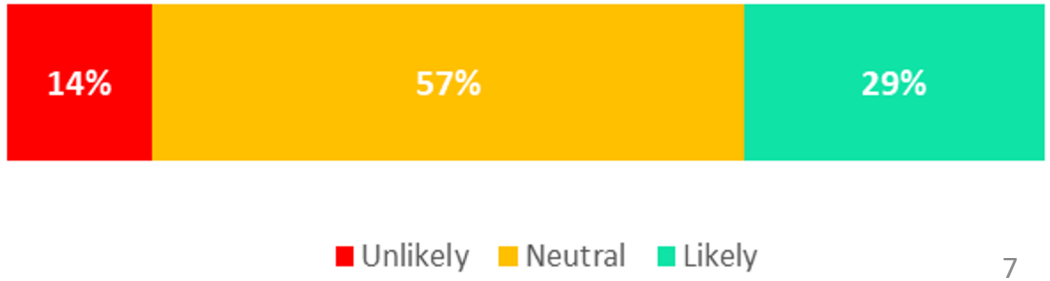


Using CO2 monitors (N = 7)

Pre-intervention

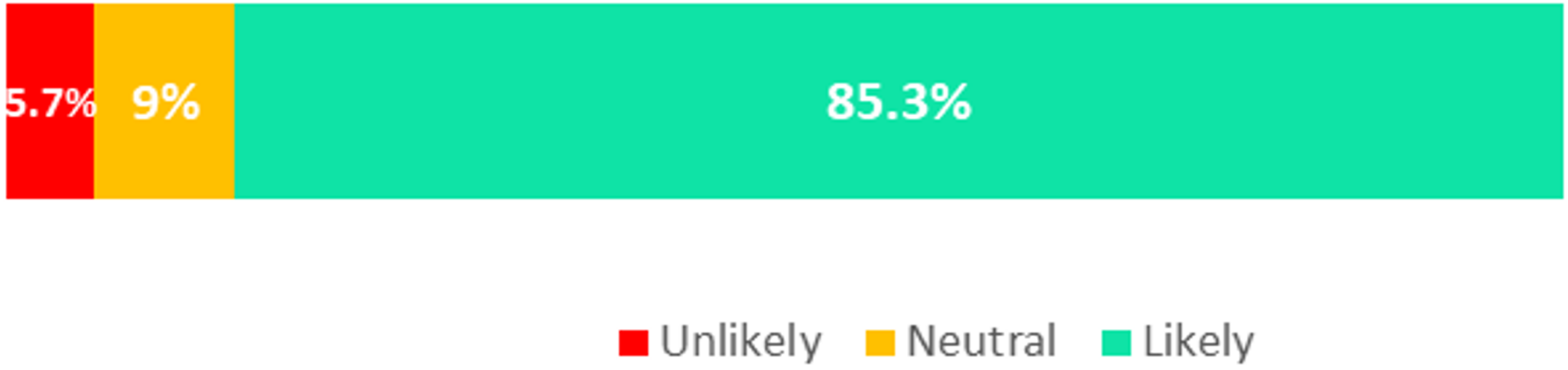


Post-intervention



Online- Likelihood of Making Changes

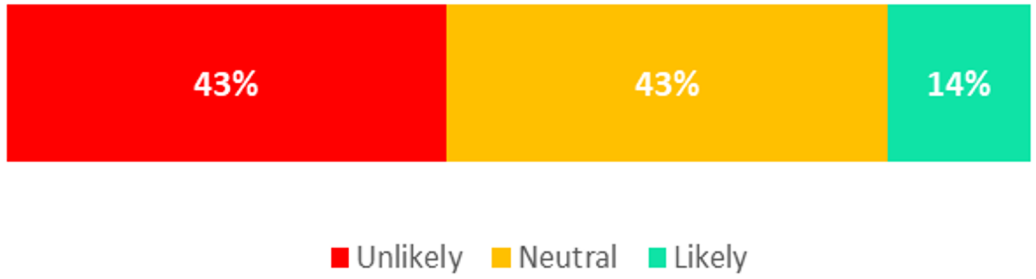
Short-Term Actions (N = 123)



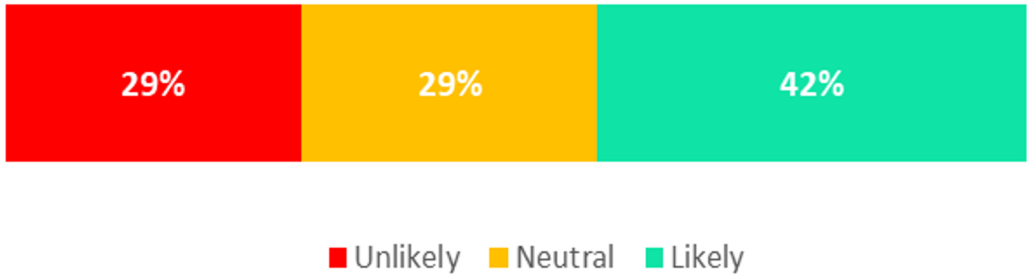
Field Study- Likelihood of Making Changes

Purchasing air cleaners (N = 7)

Pre-intervention

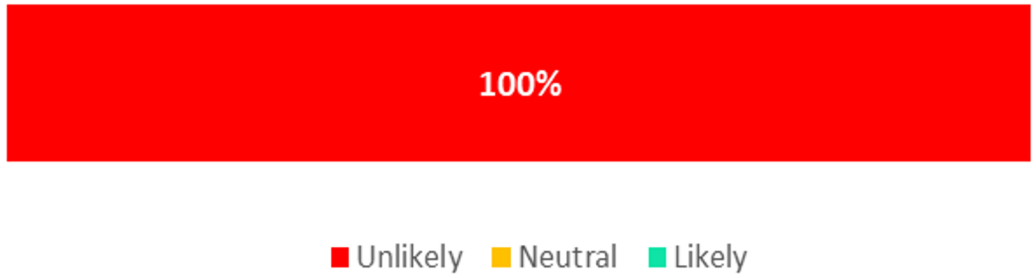


Post-intervention

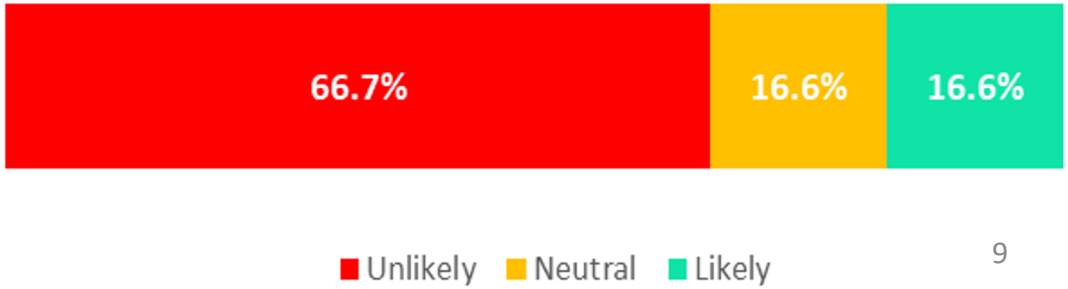


Installing mechanical ventilation (N = 7)

Pre-intervention



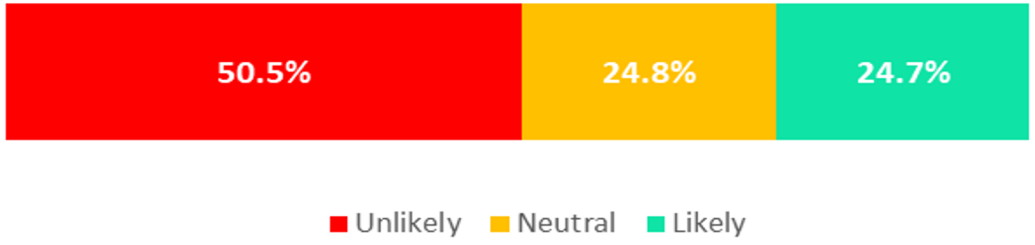
Post-intervention



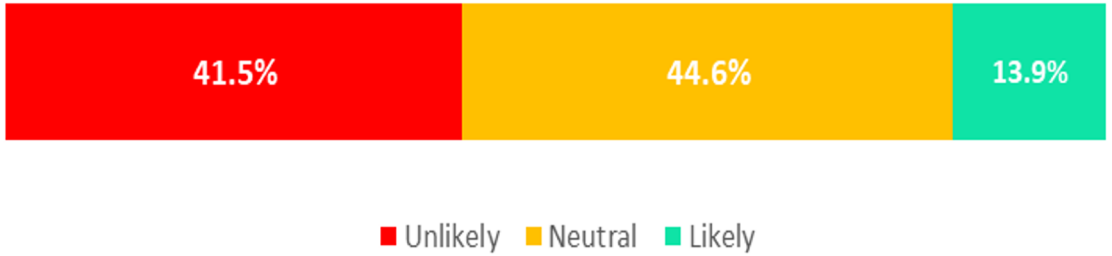
Online- Likelihood of Making Changes

Purchasing air cleaners (N = 101)

Pre-intervention



Post-intervention



Installing mechanical ventilation (N = 123)

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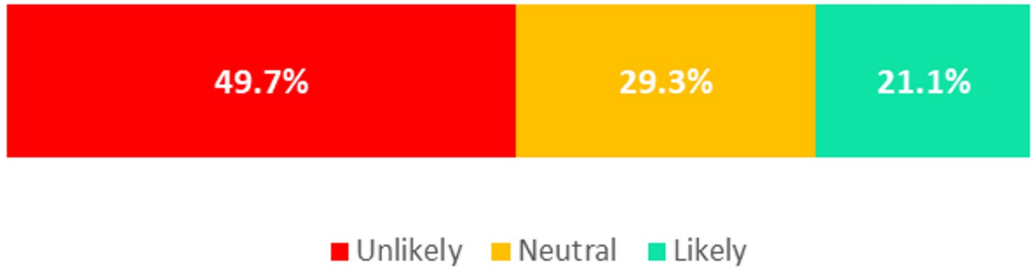

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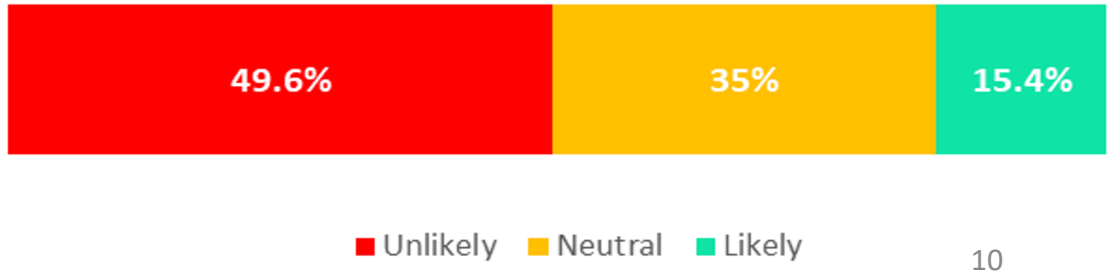

Summary & recommendations

- Sector specific guidance is essential to improve indoor air quality
- Snap shot use of CO2 monitors may lead to greater interest in interventions.
- Use of information sheet with out CO2 monitoring likely to only lead to short term changes.