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A COVID-19 National Core Study

An interdisciplinary examination of risks and experiences of COVID-19 in the food and drink processing sector

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Special thanks

Our participants from the Food and Drink Processing (FDP) sector – we appreciate your time and effort during a challenging time

Research team:

- Tony Fletcher, Lucy Pembrey, Paniz Hosseini, Neil Pearce (London School of Hygiene and Tropical Medicine)
- Will Mueller, Rebecca Canham, Alice Davis, Katie Clabon, Mark Cherrie (Institute of Occupational Medicine)
- Sarah Rhodes, Martie van Tongeren (University of Manchester)

Review of Food/Drink Processing sector risks

Currently very limited literature on the UK food/drink processing sector Covid-19 risks

Most from the United States, esp. meat/poultry processing facilities and plants

Various risk factors were also found to elevate COVID-19 infection and mortality rates in the sector:

- **Ethnicity:** ethnic minorities more disproportionately effected
- **Environmental factors**: poor ventilation mixed with a lack of social distancing between workers in food factories more likely to cause further aerosol transmission.
- **Income/sick pay:** majority of workers in the food manufacturing sector have lower income and do not have health insurance / paid sick leave.
- Lack of strong evidence associated with **sharing accommodation/transport** to and from work

Food manufacturing high outbreak rate

Table 6 Number and rate of workplace outbreaks by sector in England, May-Oct 2020

Workplace Setting Type (from HPZone)	Number of Outbreaks	Number of Workplaces (England)	*Outbreak Rate* (per 100,000)
Manufacturers and packers of food	117	6,998	1,672
Warehouses	58	15,058	385
Manufacturers and packers of non-food	195	63,312	308
Retailers	219	195,025	112
First responders/Military sites	57	67,257	85
Distributors and transporters	84	125,414	67
Restaurants and caterers	53	117,836	45
Offices	193	721,351	27
Close contact services	13	52,866	25
No setting type assigned	54	511,071	11
Primary producers	8	93,086	9
Other	266	-	-
Total	1,317	1,969,274	67

From Chen et al. 2021
(https://www.medrxiv.org/content/10.1101/2021.05.06.21256757v1.full.pdf)

Theme 3 studies

Aim: Understand food/drink processing sector specific risks

Review of literature

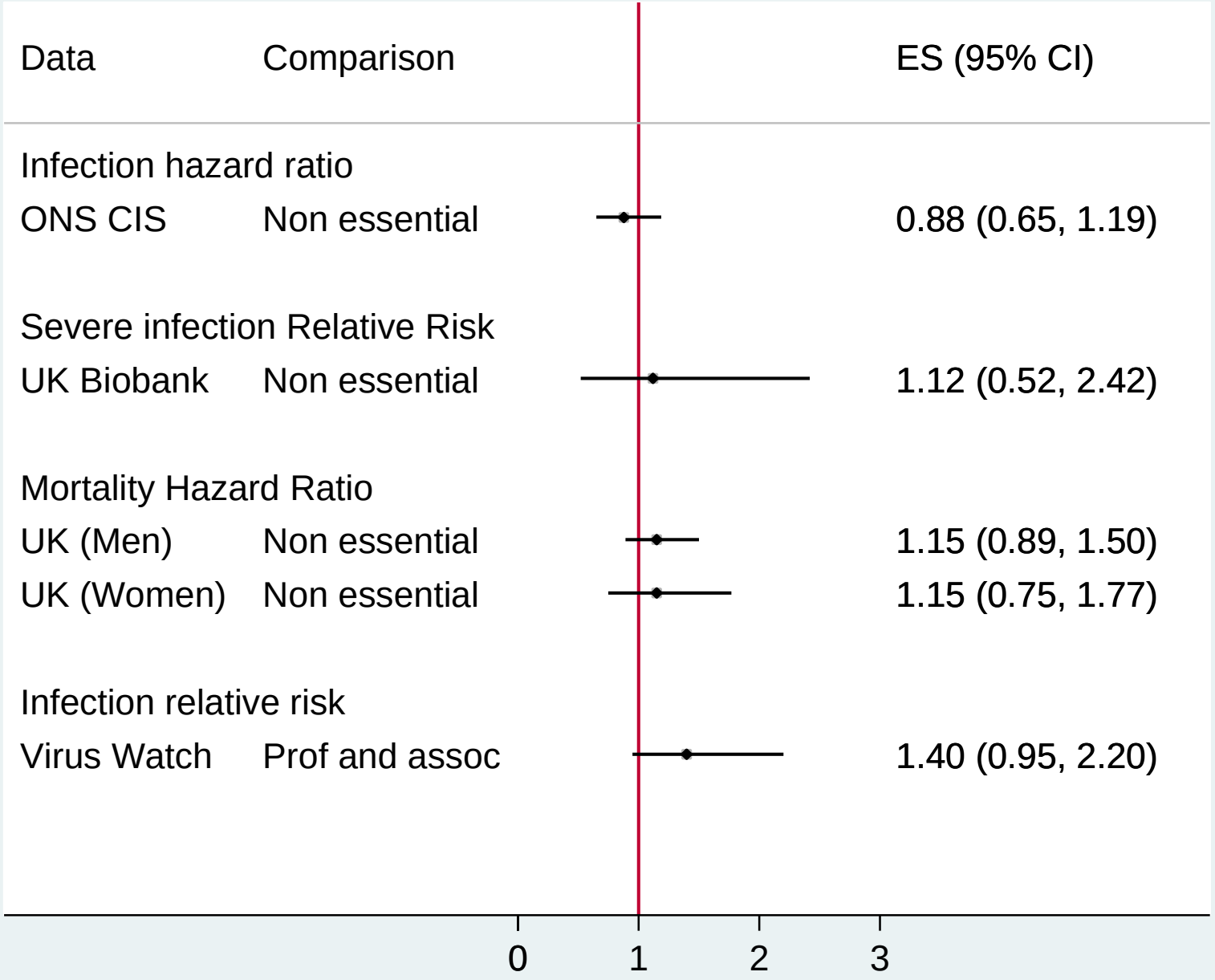
Evaluation of risks based on national statistical data (ONS)

- Are risks elevated relative to other occupations?

Sector and company experiences to understand impacts in more detail

- Quantitative methods (survey)
- Qualitative methods (interviews)

Relative effect of working in food production on Covid-19 outcomes



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Results from ONS infection survey

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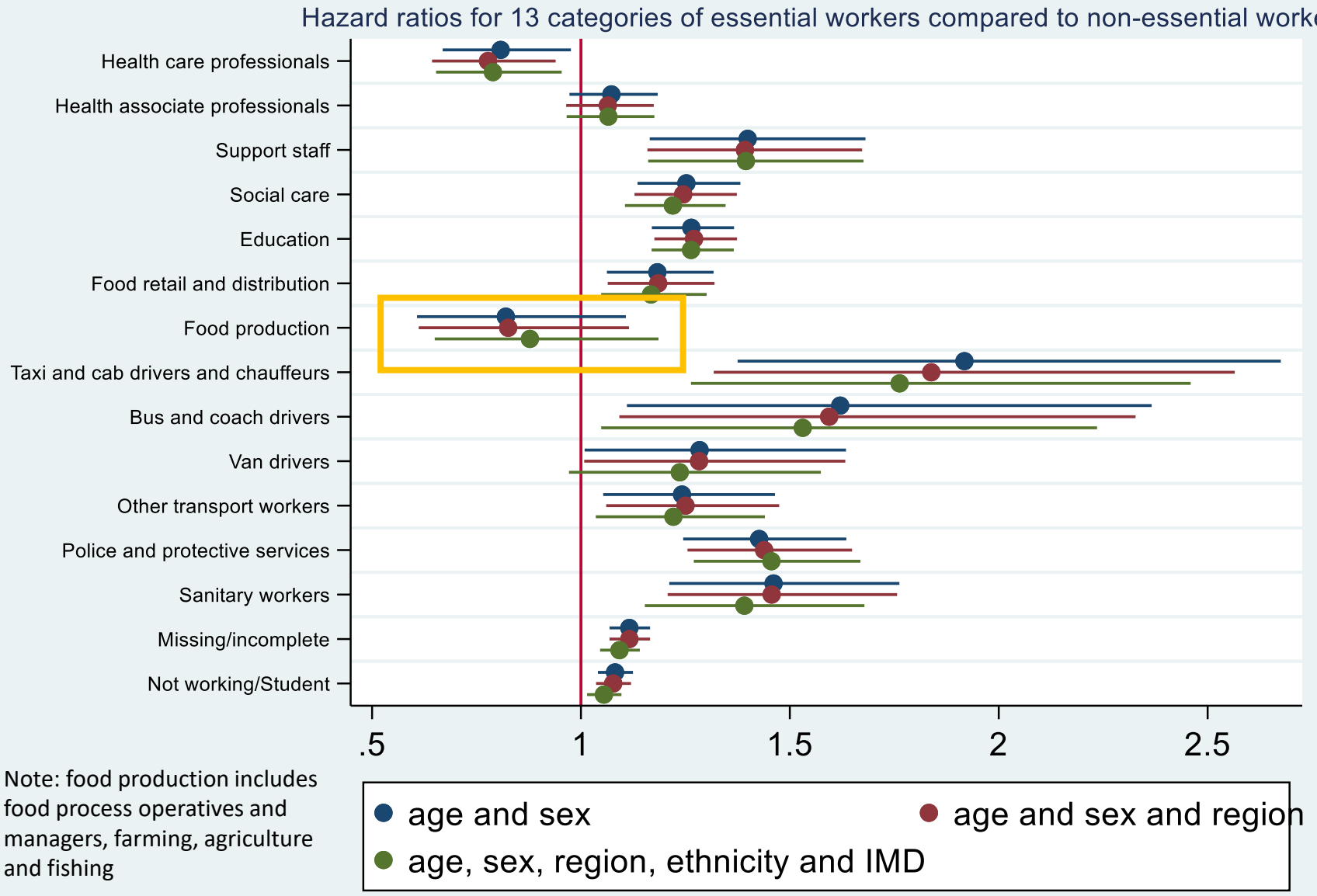
Data from April 2020 to Oct 2021

Cox regression based on first available occupation code, using time to first infection

N=286 990

17 048 events

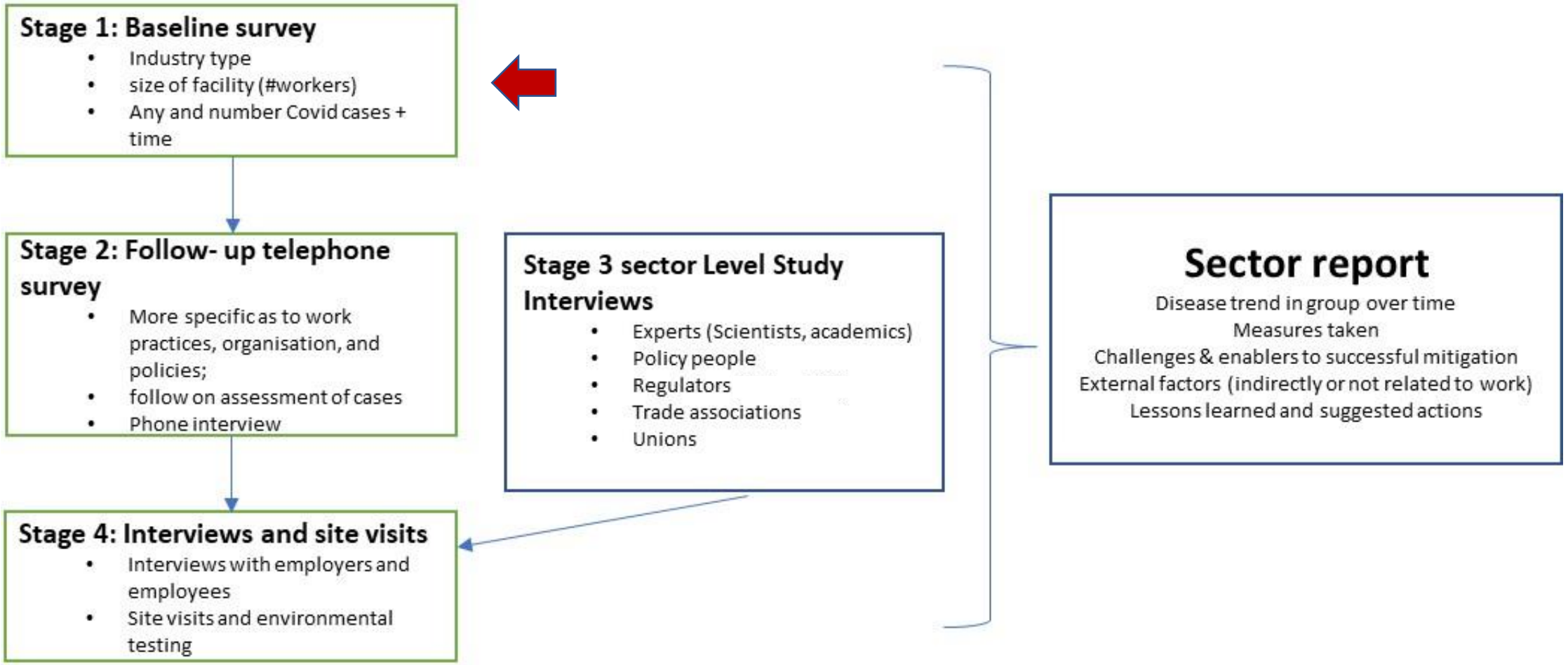


Note: food production includes food process operatives and managers, farming, agriculture and fishing

What has the sector experienced in practice?

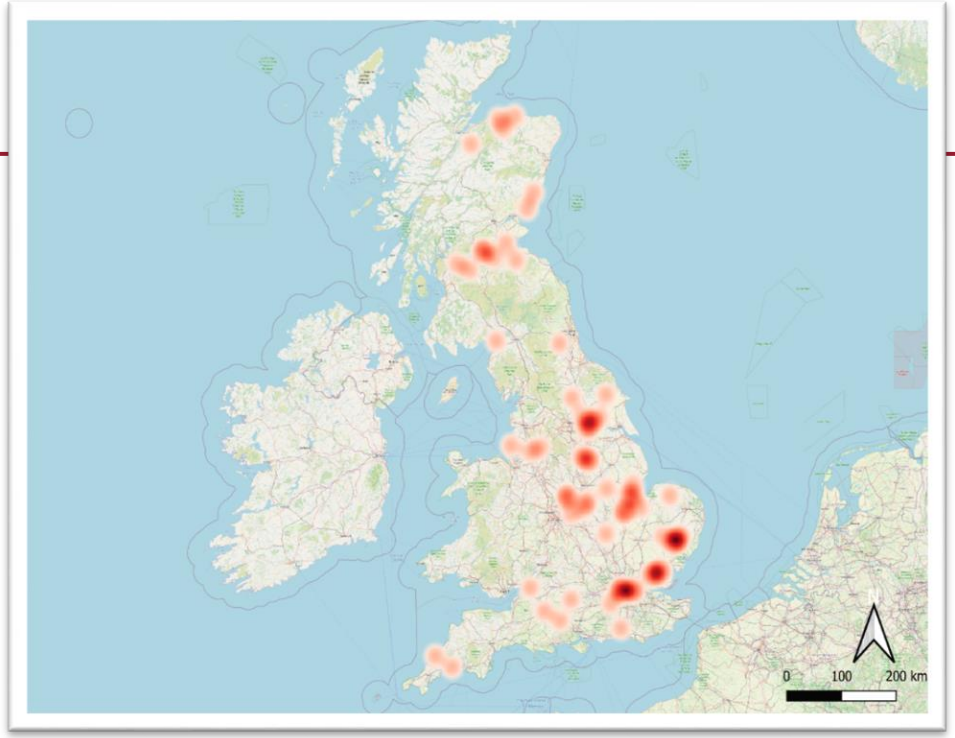
How have they mitigated risks?

COVID@Work Study (CaWS)



COVID at Work Study (CaWS)

- Online survey
- Site-specific questions on:
  - Number of workers (e.g. remote, furloughed)
  - Workplace features (e.g. ventilation, temperature)
  - Covid-19 cases, isolations, testing regimes
- Discussed with associations to encourage dissemination of survey to members
- Baseline survey:
  - **33 companies** completed the online survey, representing **66 sites** located across the UK
  - Reporting covered March 2020 to Jan/June 2021



Purpose of sites

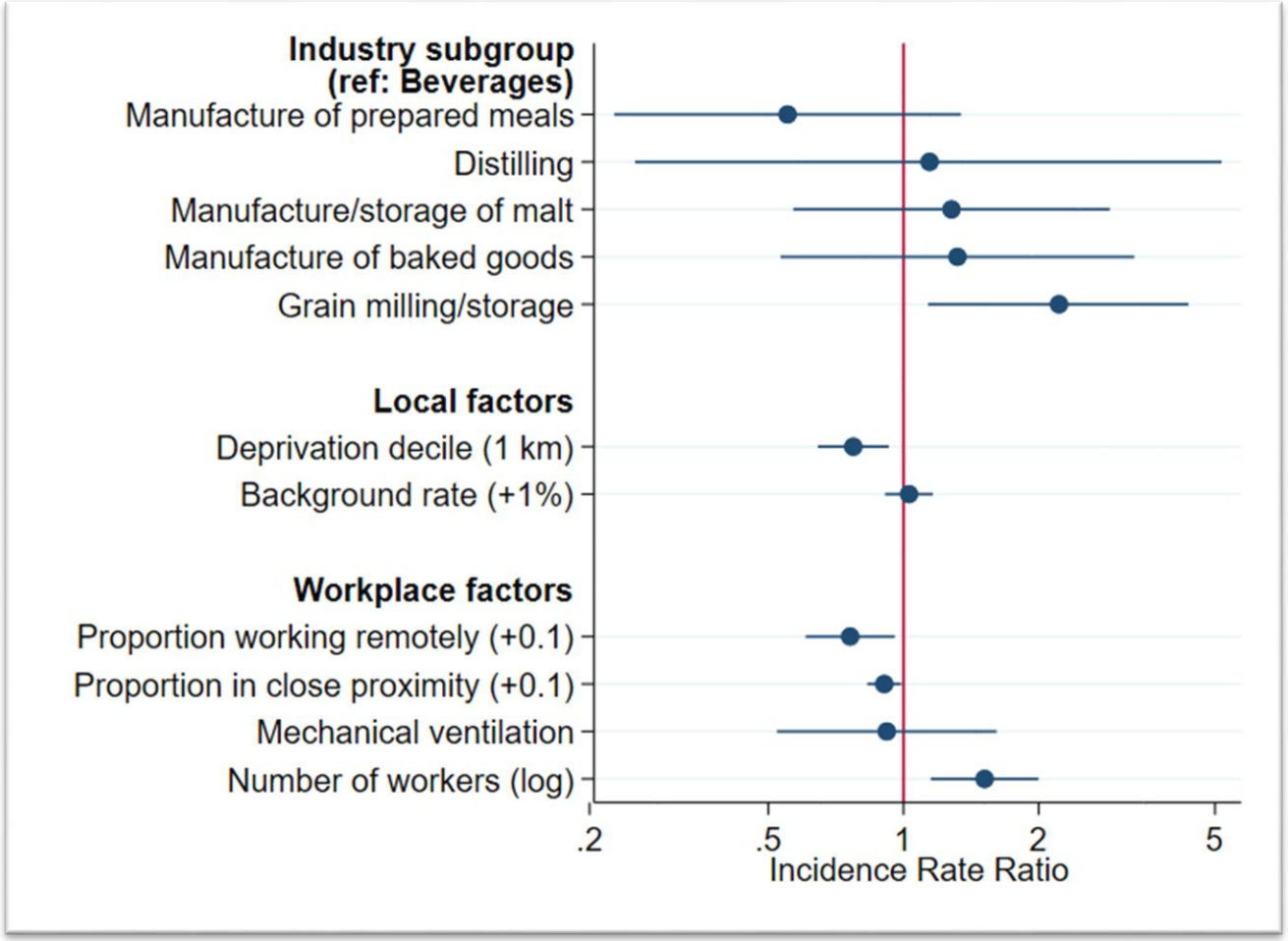
- Grain milling/storage (n=16)
- Manufacture/storage of malt (n=14)
- Manufacture of prepared meals (n=12)
- Manufacture of beverages (n= 8)
- Distilling (n= 5)
- Manufacture of baked goods (n= 5)
- Other (n= 6)

COVID at Work Study (CaWS): Baseline

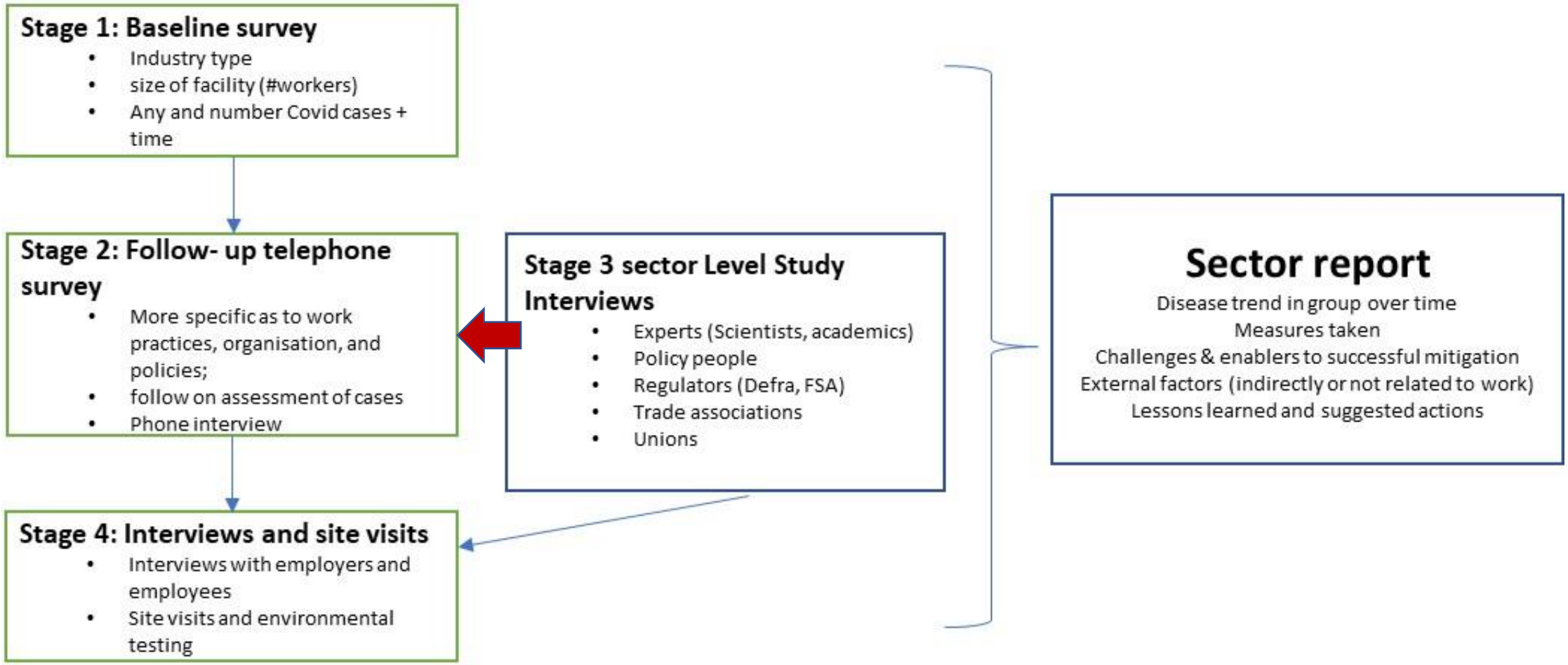
Key results:

- n=52 (79%) sites had ≥1 case
- 1,068 cases across sites (15,563 workers)

- **Lower** risks with more remote workers and less deprivation (also workers in close proximity)
- **Increased** risks with number of workers

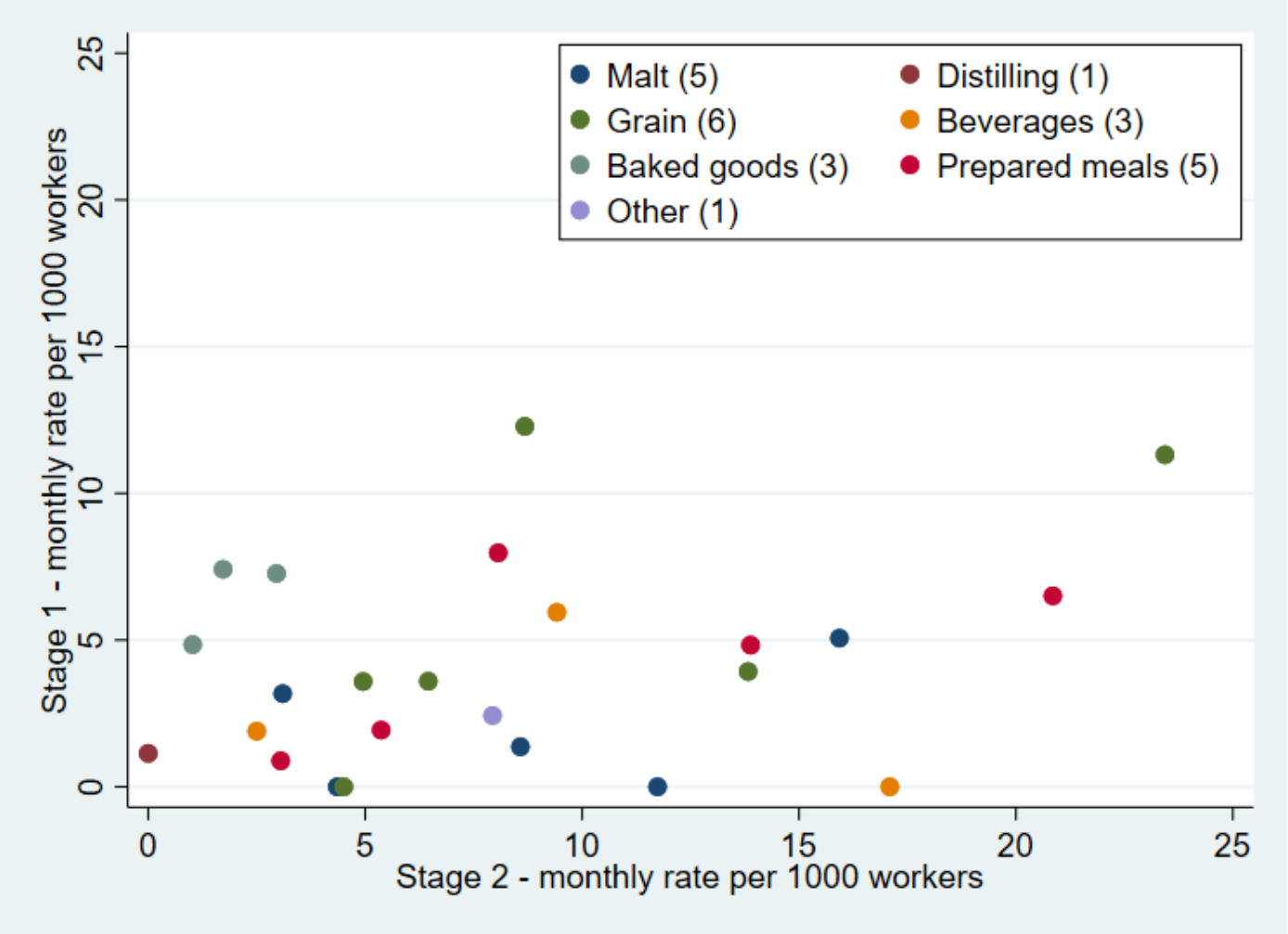


COVID@Work Study (CaWS)



COVID at Work Study (CaWS): Follow-up

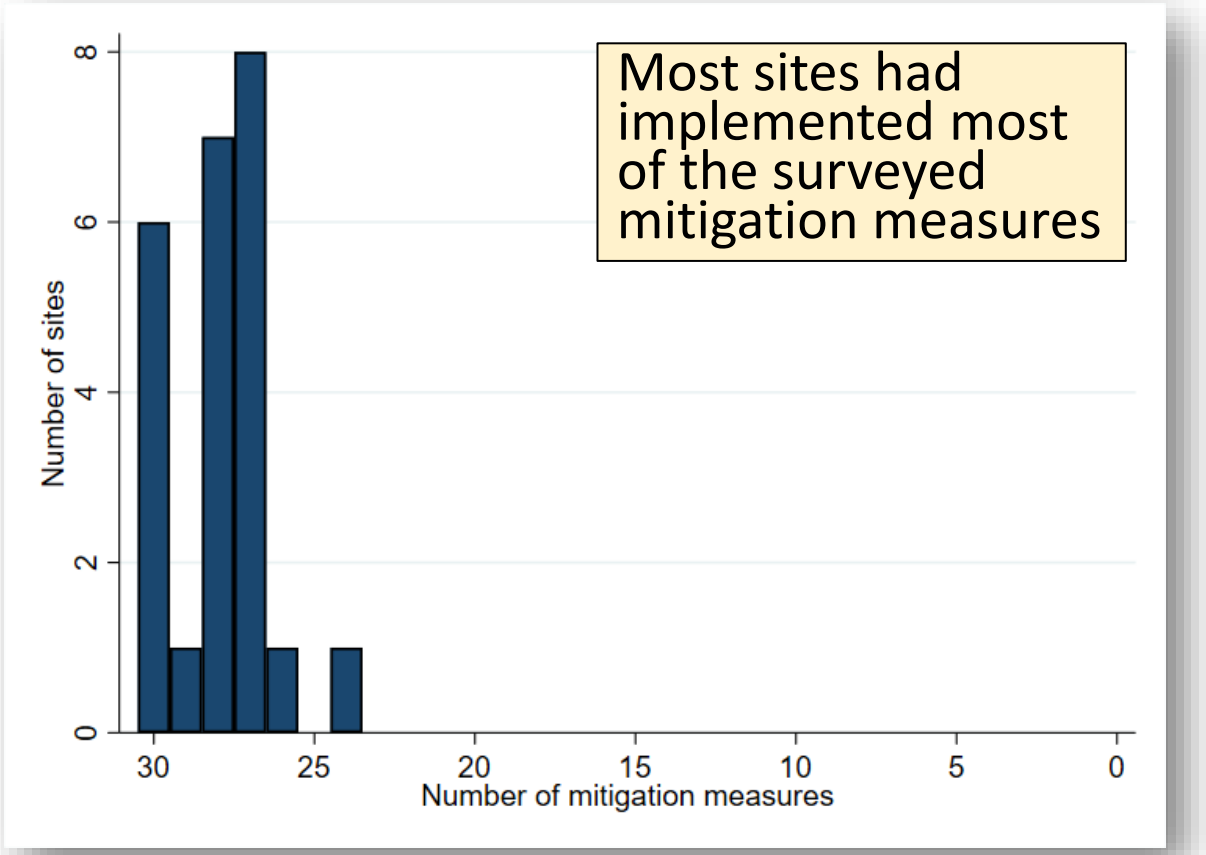
- Key results:
  - n=24 sites
  - Follow-up time since stage 1: 6-9 months (Feb-Dec 2021)
  - Overall: **higher** Covid-19 rates compared to baseline



COVID at Work Study (CaWS): Follow-up

Surveyed mitigation measures included:

- Physical barriers
- Floor markings
- One-way systems
- Increased workplace cleaning
- Non-touch options
- CO_2 monitoring
- Temperature checks (visitors, staff)
- Provision of PPE
- Mental health support
- Restricted movement around site
- + 20 more



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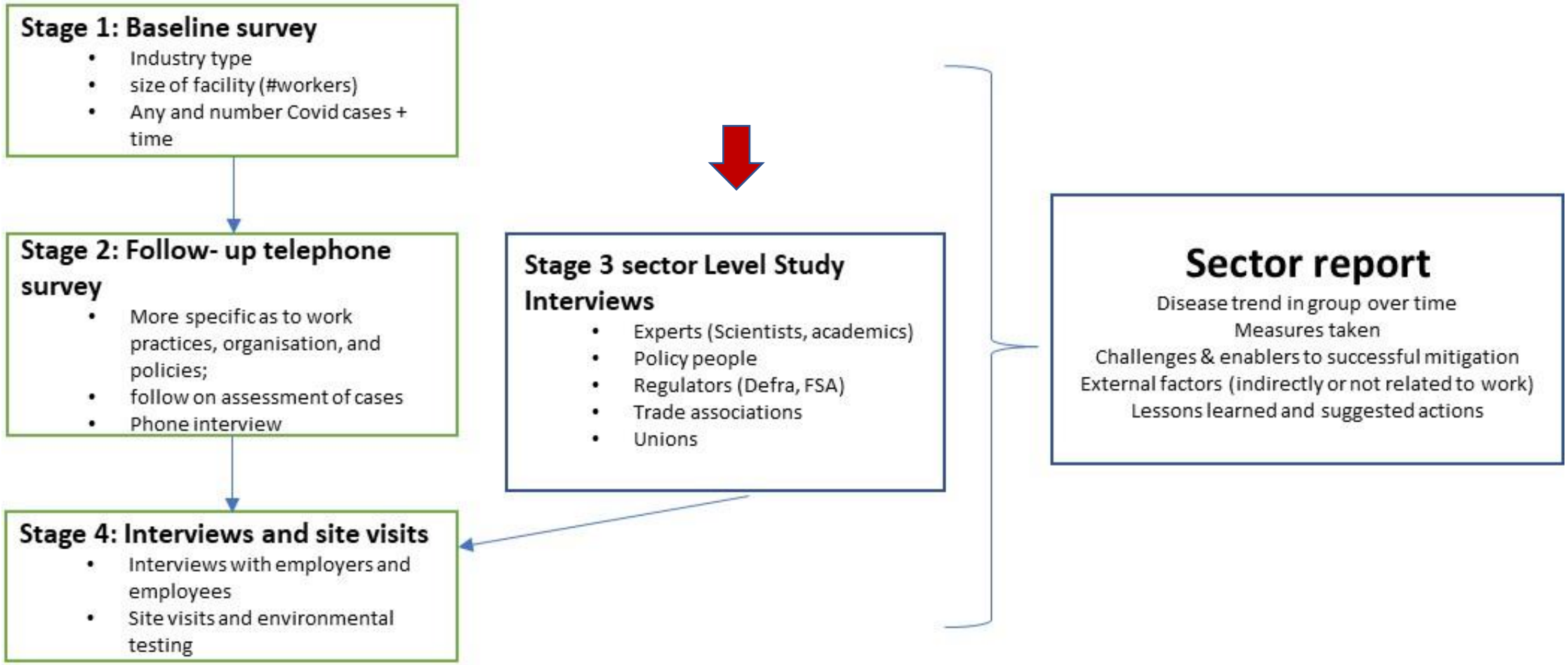

What did we do?

21 Semi-structured qualitative interviews

32 individuals across UK based industry stakeholders

(Late August - mid November 2021).

Type of stakeholder	Number of interviews conducted	Number of expert representatives consulted
Government agency/department representatives	7	9
Academics in their respective fields	5	12
Federations/ associations	5	5
Unions	4	6

Thematically analysed using NVivo Software for emergent themes.

What have we learned?

- **Risk factors** for transmission:
  - Requirement for site-based work (inability to work from home);
  - Reliance on manual labor (employing large volumes of people, high speed of production);
  - Proximity to others within the workplace (e.g. production lines);
  - Cold ambient temperatures and humidity
    - chilled factories require large volumes of workers;
    - temperature controls make it difficult to ensure adequate ventilation;
  - Infrastructure of buildings
  - Spread in non-operational environments and shared facilities;
  - Outside of the work environment
- **Risk perception of the industry:**
  - Generally not perceived to be an elevated risk within the FDP industry, relative to other industries;
  - Pre-COVID start point of familiarity with PPE, risk assessments, hygiene standards thought to position the industry well to respond;
  - Similar to other industrial environments with similar risk factors.

What have we learned?

- **Mitigations** most commonly cited:
  - Cleaning and hygiene practices,
  - social distancing,
  - measures to limit contact (e.g. screens, one-way systems, cohorts, staggering shifts)
  - ventilation,
  - testing and monitoring (surfaces and workers),
  - PPE/face masks
- Levels of compliance perceived to be good generally, but…
  - Social distancing within and outside of operational environments was said to be poor amongst some (academic, union and government agency respondents).

What have we learned?

- Industry **challenges** to responding to the COVID-19 pandemic:
  - Competing priorities for operations (maintaining food supply, animal welfare, food safety and quality, public health);
  - External factors: labor shortages, haulier shortages, EU exit, furlough, interwoven supply chains with other industries (e.g. hospitality), responding to changes in supply and demand;
  - Business challenges including continuing operations, accessing PPE, operational restrictions to change;
  - Worker related challenges (low pay, staff working multiple jobs/across multiple sites, lack of job security, lack of sick pay (initially), large proportion of migrant workers.

Conclusions

- Study on occupational risk of infection in food and drink processing sector not much higher that of other essential sectors but possibly more prone to outbreaks
- Most facilities cited a similar set of mitigations and found shifting rules across time and space in UK challenging to respond to
- Socioeconomic factors pose challenges for response
- Uncertain contribution of workplace vs. work-related factors in transmission
- COVID + Brexit and supply/labour issues made this a challenging time for industry, may have led to fewer companies willing/able to engage in research

What next?

We have explored a variety of viewpoints from the FDP sector, ranging from industry groups, unions, academics, and government

We are planning to get an idea of how the pandemic and its evolution is experienced by workers in the sector – Stage 4 of our study

If you work in this sector please get in touch if you would like to play a role in our research! Email CovidAtWorkStudy@iom-world.org

https://sites.manchester.ac.uk/covid19-national-project/research-themes/sector-specific-studies/covid-19-at-work-understanding-transmission-in-the-food-processing-sector/

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