

The relation between quality management and Covid-19 outbreaks in 166 nursing homes in Tuscany: a mix methods study

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Background

LTC facility characteristics associated with Covid 19 outcomes

Facility Size

Community prevalence

Staffing
Use of temporary staff
Staff statutory sick pay
Compartmentalizing

Ownership

Architecture

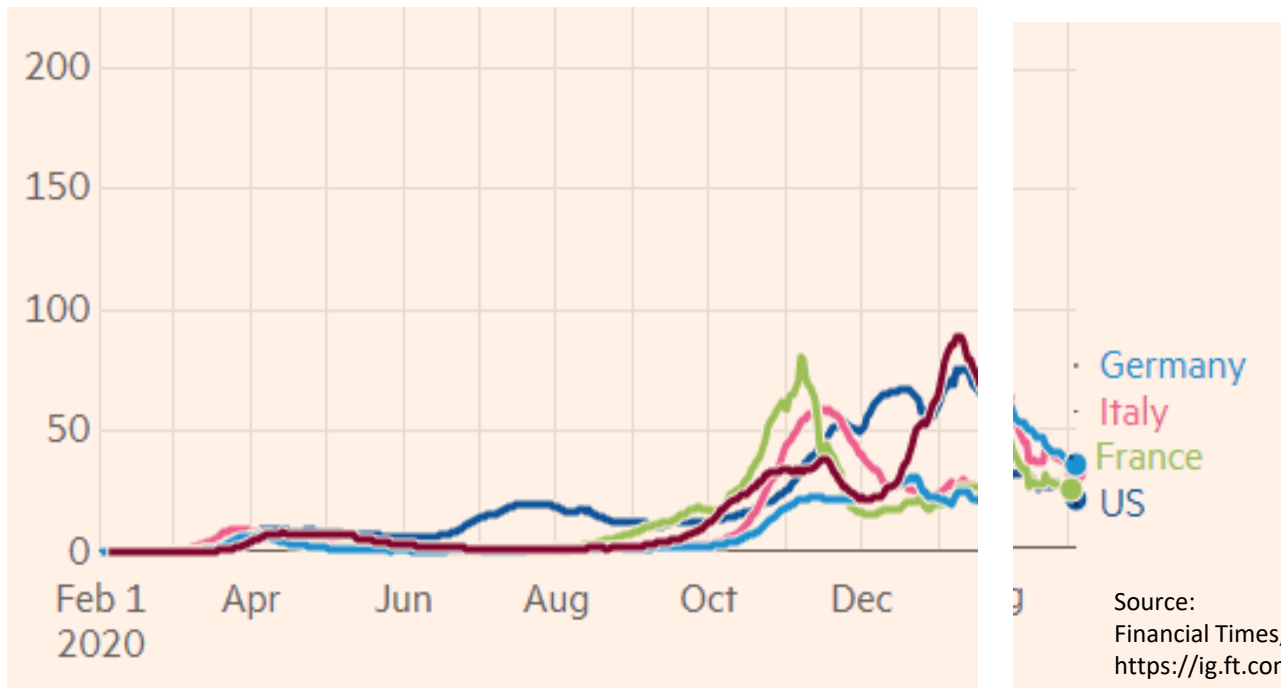
Quality
Quality ratings
Infection control
Inspection findings



Background

Covid 19 in autumn 2020

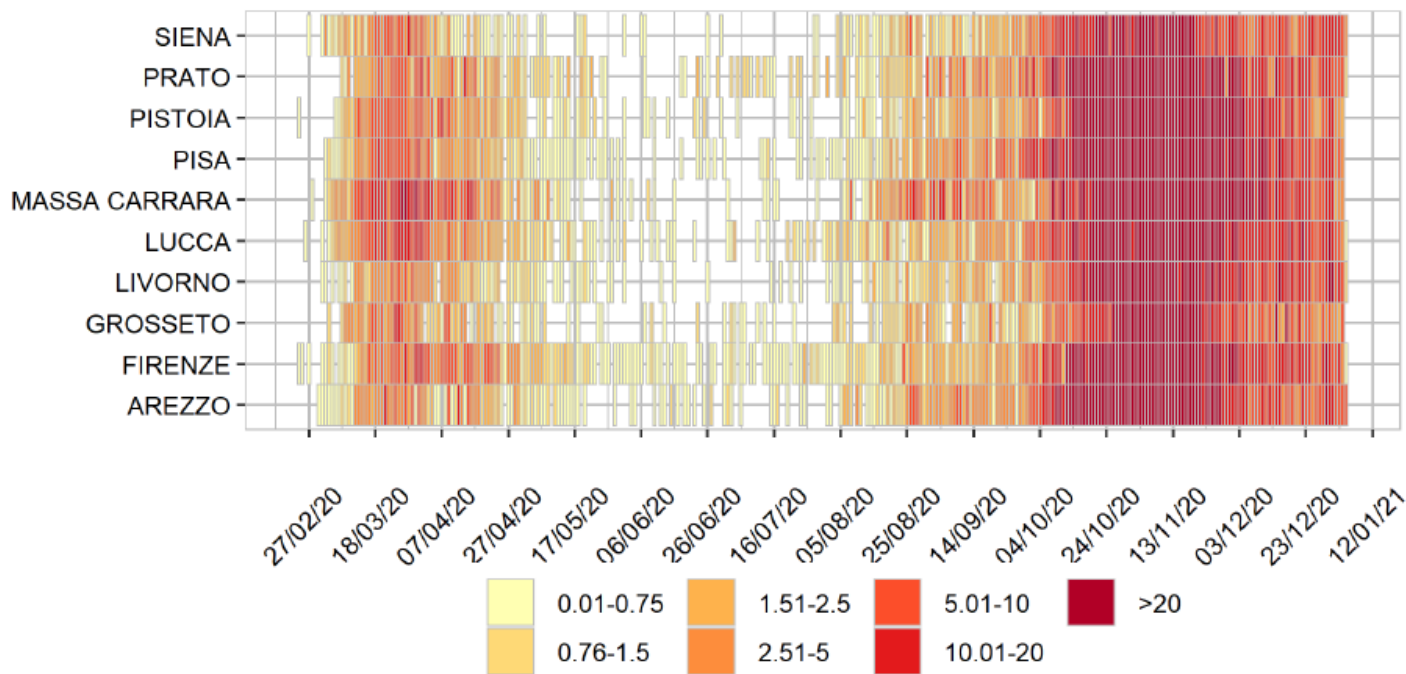
New cases of Covid 19 per 100k in 2020,
selected countries



Background

Covid 19 in autumn 2020

New cases of Covid 19 per 100k in 2020, Provinces in Tuscany



Source:
the Italian National Institute for Health,
https://www.salute.gov.it/portale/news/documenti/Epi_aggiornamenti/Epi_aggiornamento_Toscana_20201020.pdf

Research questions

Relation between quality management and Covid 19

Mixed methods approach

- Is there an association between **pre-existing quality management measures** of nursing homes in Tuscany and the **prevention and spread of Covid 19** within the nursing homes?
- What is the relation between these measures and prevention and spread of Covid 19 from **the perspective of nursing homes?**



Data sources



**Nursing home
mapping survey**

2019 data

**Nursing home
performance survey**

2019 data

**Organizational
climate survey**

2019 data



The Italian National
Institute for Health

**Weekly Covid 19
monitoring**

Autumn 2020

**Covid 19 Quarterly
monitoring**

Autumn 2020



Measures

Quality management measures

Outcome

- Pressure ulcer rates
- Falls
- Restraints use
- Urinary tract infection
- Pain above the threshold

Process

- Residents who received influenza vaccine
- Availability of a quality officer
- Quality certification
- Availability of administrative software
- Job satisfaction ratings

Structure

- Number of beds in the facility
- Healthcare workers per available bed
- Availability of an isolation area



Measures

Covid 19 prevention and spread in nursing homes

Week of autumn 2020	1	2	3	4	5	6	7	8	9	10
% of residents in isolation	2	7	12	1	5	0	0	0	1	4

The highest weekly values is our reference

4 groups of nursing homes

No cases reported

Cases only among staff

Cases <15% of residents

Cases >15% of residents



Group discussions

4 Group discussions

- 22 nursing homes
- 30 persons (mostly managers)
- Between March and April 2022

Each group discussion had 7 modules



Each module tackled 1 or a small group of indicators

Question: In your experience, did this measure influence the capacity of your nursing home to prevent and contain Covid 19 outbreaks?

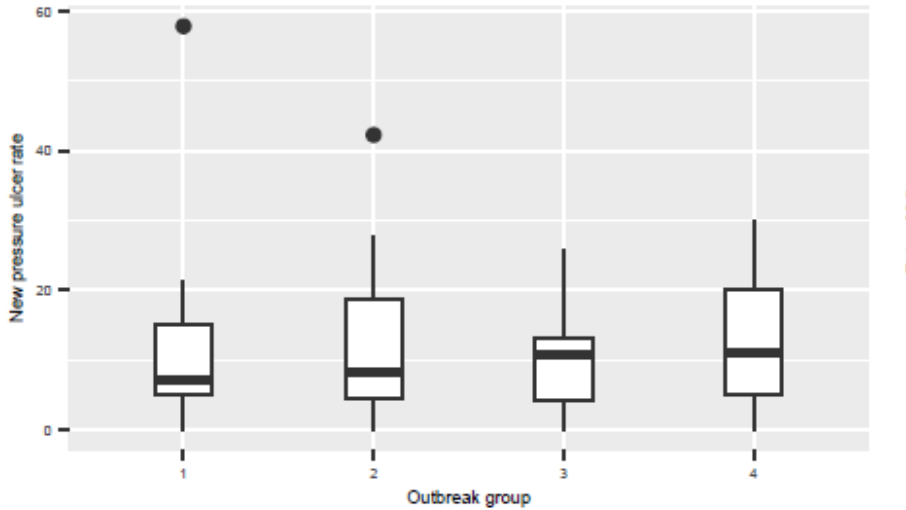
Discussion

Quantitative results shown

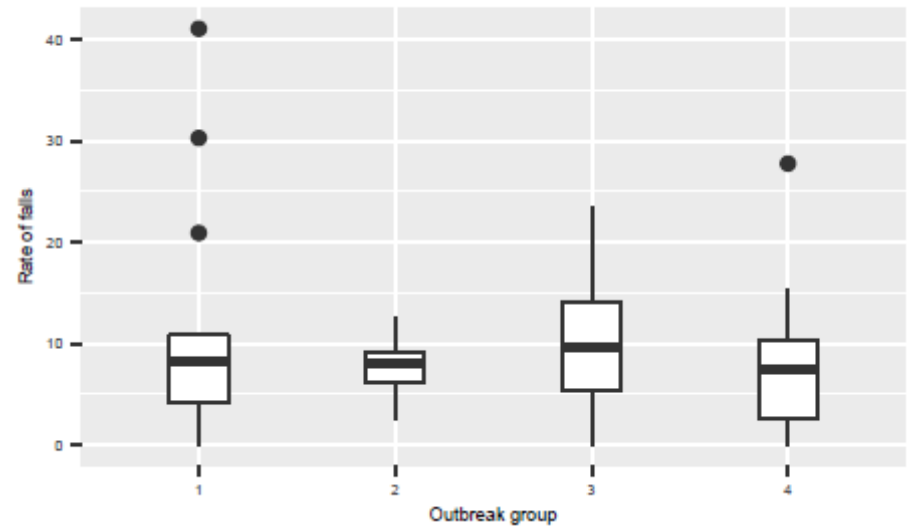
Additional comments

Outcome indicators

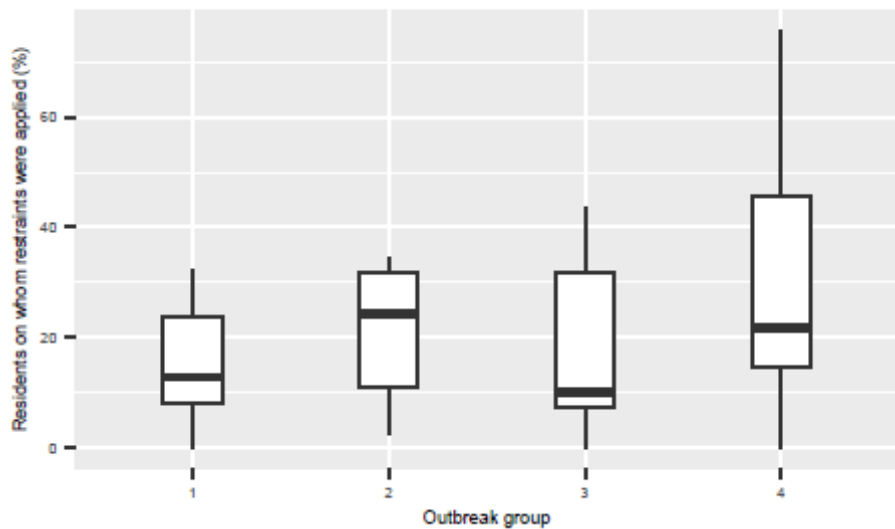
Nursing homes' pressure ulcer rates of category 2 to 4 developed in the facility in 2019



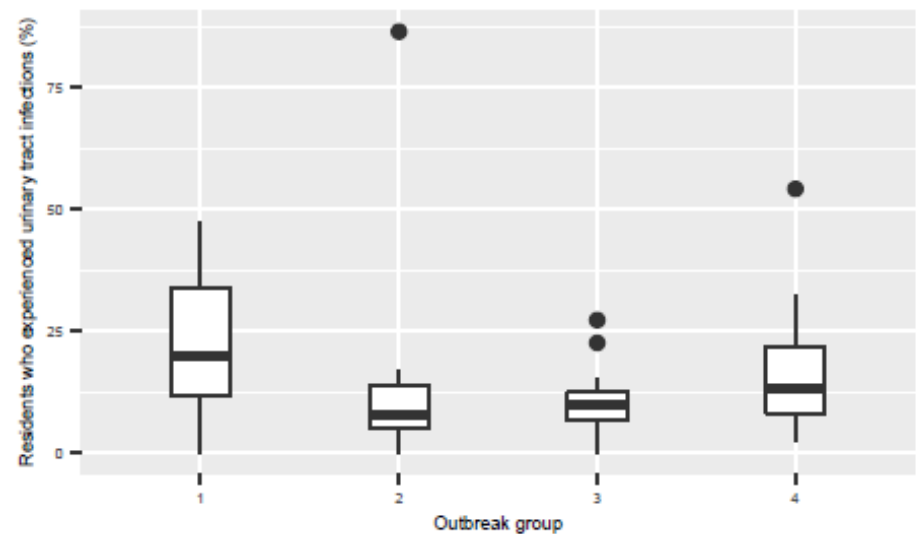
Nursing homes' rate of falls leading to ER visit, hospitalization or death in 2019 by Covid



Nursing homes' rate of restraints use other than bed rails in 2019 by Covid 19 outbreak

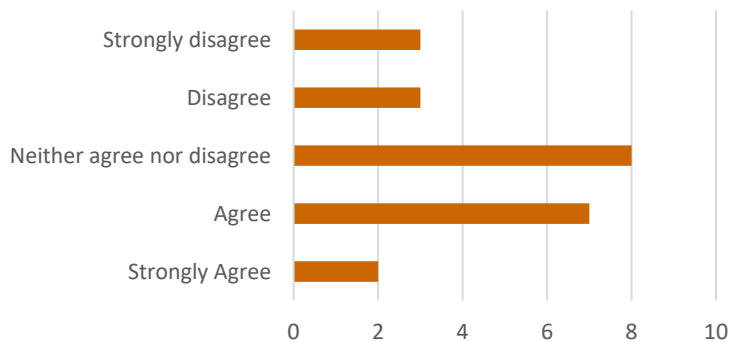


Nursing homes' percentage of residents with a urinary tract infection in 2019 by Covid



Outcome indicators

The attainment of **good results on clinical indicators** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



Possible explanations for the existence of an observable relationship

- strengthens experiences with establishing and **implementing protocols and procedures.**
- strengthens experiences with **on the job training.**
- encourages a proactive approach to **risk management.**
- may imply more attention to **infection prevention** prior to Covid 19.
- may imply less need for visits to emergency departments and hospitals, hence **reducing Covid 19 exposure risk.**

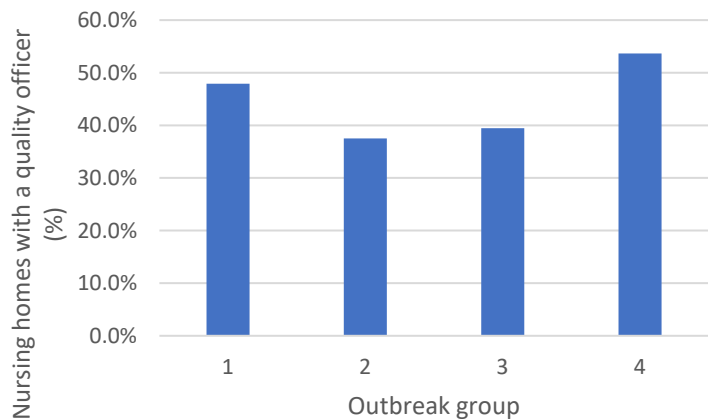
Possible explanation for the absence of an observable relationship

- Covid 19 was a **new challenge** for which work on outcome performance indicators did not prepare.

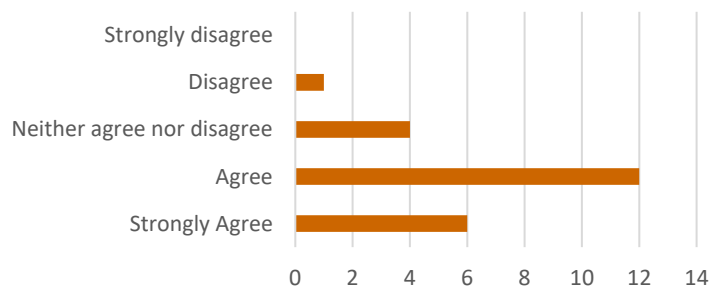


Quality officer

Availability of quality officer



The availability of a **quality officer** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



Possible explanations for the existence of an observable relationship

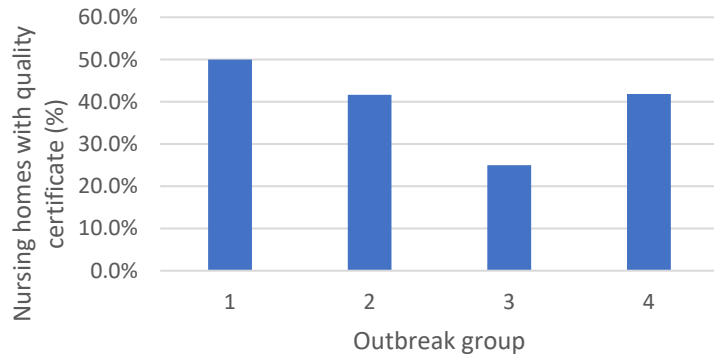
- Often quality officers **translate** national and regional **Covid 19 related guidelines** and requirements into facility level protocols and procedures.
- Quality officers might have a **different perspective** than general management or administrative staff when establishing new protocols and procedures.

Possible explanation for the absence of an observable relationship

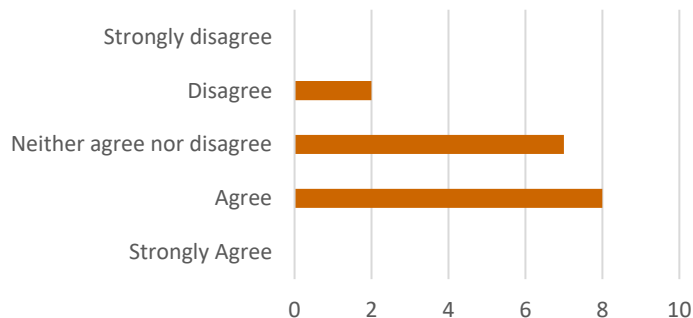
- If there is no quality officer, **somebody else** would perform the role of translating Covid 19 related guidelines and requirements.
- There is no relation, because once a case is recognized, it is already **too late** for any intervention to have a meaningful effect.

Quality certification

Quality certification (ISO 9001 or UNI10881)



The availability of a **quality certificate** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



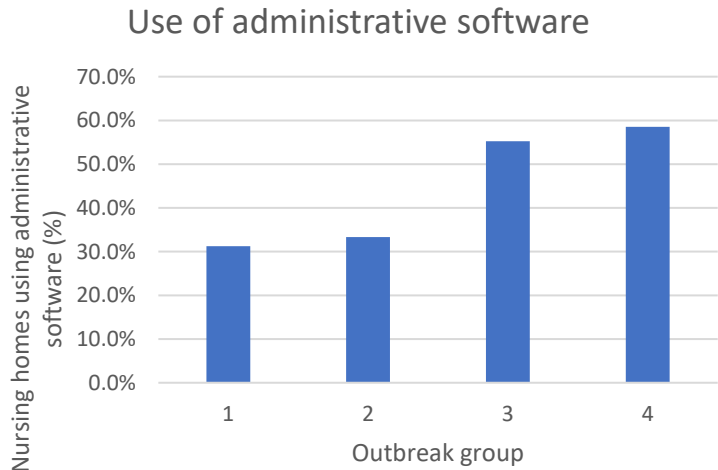
Possible explanations for the existence of an observable relationship

- Helpful to the extent that **contingency plans** were required and prepared because of certification requirements

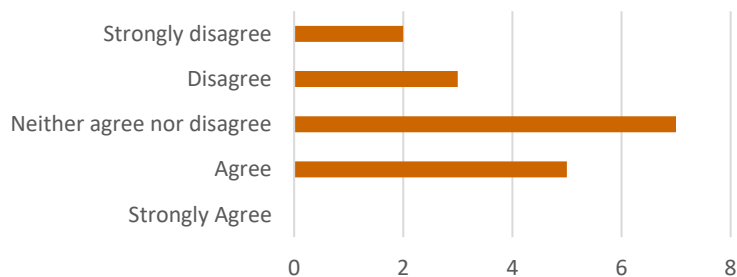
Possible explanation for the absence of an observable relationship

- The requirements of any certification system did not foresee Covid 19, so there were **no related requirements**

Administrative software



The availability of an **administrative software** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



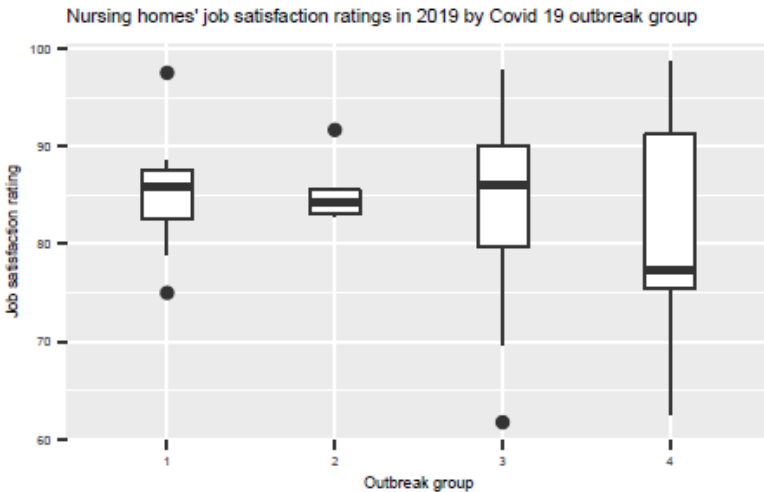
Possible explanations for the existence of an observable relationship

- If an electronic **health record** is part of an administrative software, then the record indeed helps.
- Perhaps facilities that don't have an administrative software were **less accurate** in reporting data.
- Correlation between **size** and availability of software.

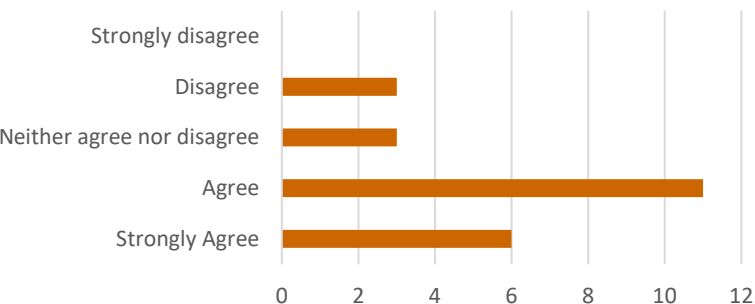
Possible explanation for the absence of an observable relationship

- A software does not help in Covid 19 related activities.

Job satisfaction



The level of **satisfaction of personnel** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



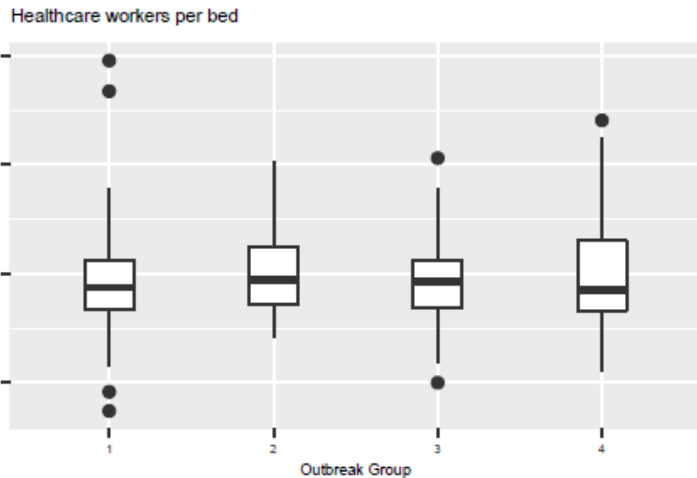
Possible explanations for the existence of an observable relationship

- Good relationships with management and within work teams likely means **easier and quicker uptake** of new procedures.

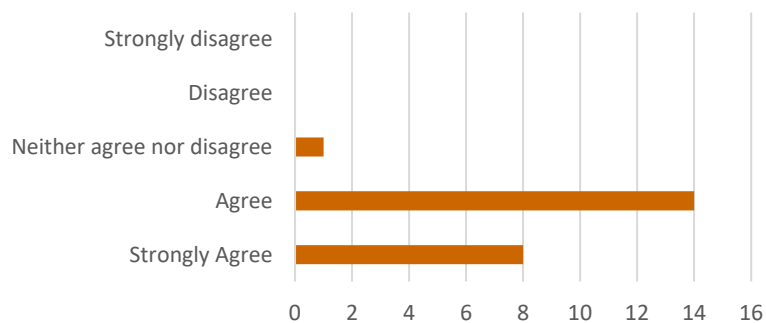
Possible explanation for the absence of an observable relationship

- **Dedication** of staff was essential, but this is not the same as satisfaction.
- The pandemic created a **sense of responsibility** among staff independent of job satisfaction.
- The pandemic created a **sense of unity** in the face of adversity independent of job satisfaction.
- High **turnover** of staff may indicate that 2019 data are not really relevant.

Staffing level



The **availability of personnel** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



Possible explanations for the existence of an observable relationship

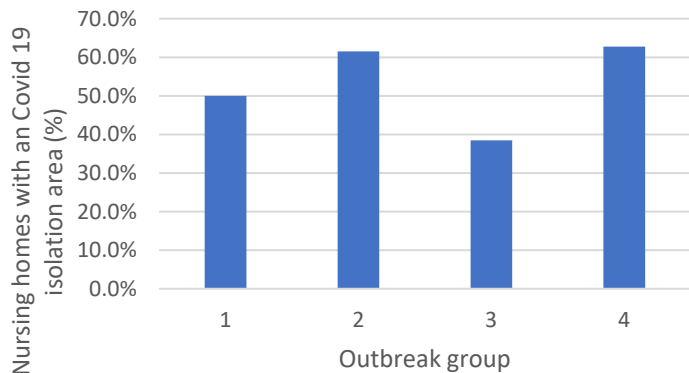
- More personnel allows more extensive **precautionary** measures.
- The establishment of **compartmentalization** often requires a lot of personnel

Possible explanation for the absence of an observable relationship

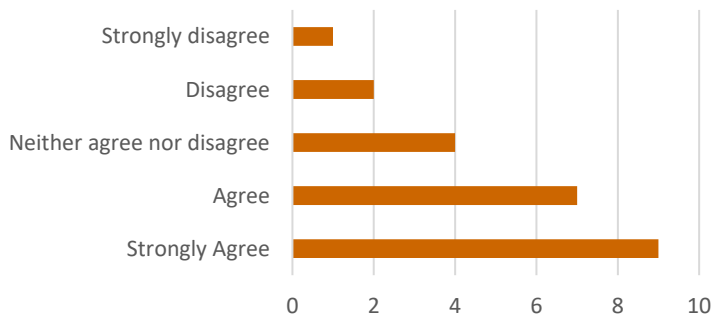
- Number of personnel does not capture the **dedication** of staff.
- Staff **turnover** is a problem because of the need for training and integration in work processes.
- Unclear **testing rules** for temporary personnel.
- Once personnel is infected, you have many **absences**.

Isolation area

Availability of Covi 19 isolation area



The availability of **isolation area** influenced the ability of the NH where I work to prevent and contain Covid 19 outbreaks



Possible explanations for the existence of an observable relationship

- The isolation area was used for **quarantine**.

Possible explanation for the absence of an observable relationship

- Having an isolation room is **not sufficient** to isolate residents, the facility's **architecture** is often a limiting factor.
- Strict isolation is **not really feasible** in a nursing home, with or without an isolation area
- Once a case is identified the virus has **already spread** in the facility

Summary of findings

- A statistically significant **correlation** between outcome and process indicators related to quality management **was not found** in most cases. *(except on the use of administrative software)*
- Participants to group discussions underscored the importance of **staffing** and **architecture** of the facility.
- Participants implied that quality measures or quality standards **may become relevant**, if they will include aspects directly relevant to a pandemic in the future.

Strengths and Limitations

- Study related to **second wave** of Covid 19
- Considers **multiple aspects** of quality
- **No adjustment** for size, case mix and Covid prevalence in the community
- Interpretation of the finding was **supported** by those who provide the data
- Study limited to **one region** in Italy

Implications

Should we change our quality measures, to capture aspects relevant to controlling pandemics?



Do we need to redefine what is quality in nursing homes?



How to reconcile the health care and social mandate of nursing homes?



What kind of care are nursing homes expected to provide?



Thank you

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