

Epidemiology and Infection

“Second reported outbreak of pneumococcal pneumonia among shipyard employees in Turku, Finland, August – October 2023: a case-control study”

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Supplementary material S3: Questionnaire for cases

Questionnaire for pneumococcal disease outbreak at the Turku Shipyard in Turku, Finland, August – October 2023

Date of completion: _____ Case ID: _____
Interviewer: _____

Good day, my name is [name of interviewer]. I am calling on behalf of [name of institute]. Is this Mr/Ms [name of case]? I am calling regarding the pneumonia you have recently been treated for in Turku University Hospital.

We are investigating the recent situation at the shipyard because we received reports that you were not the only person that got sick.

We would appreciate your input by answering a questionnaire. Answering the questions is voluntary, your participation will be useful to understand why the disease was identified among shipyard workers. Would you help us by participating?

(Yes)

Just for your information, any details you provide will be handled completely confidentially and will not be shared with your employer or any other party. Any information about you will have a number on it instead of your name. In reports of the findings, no individual participants will be identifiable. Any questions regarding the investigation can be addressed to [the interviewer] or to the THL/Varha investigation team. By answering the questions, you confirm that consent to participate is given.

(Yes, but not right now)

I will call you back, what time and day would you prefer?

(No)

Just for your information, any details you provide the investigation team will be handled completely confidentially and will not be shared with your employer or any other party. Any information about you will have a number on it instead of your name. In reports of the findings, no individual participants will be identifiable. In case you change your mind regarding your participation, you can contact this number [xxx].

Section A: Respondent information

1. Date of birth (dd/mm/year): ____ ____ / ____ ____ / ____ ____ ____ ____
2. Sex: _____
3. Nationality: _____
4. Country of permanent residence: _____

5. What date did the respiratory symptoms start? (dd/mm/year): _____

The below information concerns the period of 3 months before start of symptoms (questions 6-7):

6. Accommodation while working in Turku Shipyard:

- Hotel/hostel
- Apartment/studio
- House
- Other: _____

7. While working in Turku Shipyard, did you live:

- Alone
- With work colleagues (how many: _____)
- With family members (how many: _____)
- With other roommates that do not work at Turku Shipyard (how many: _____)

Section B: Occupational details / work-related questions

8. When did you start working at Turku Shipyard? (month, year) _____

9. Were you employed by Meyer Turku or by a contractor in the **year 2023**?

- Meyer Turku
- Contractor (if a contractor, please specify **name** of the contractor and which **country** the contractor is based in): _____

10. Before working at Turku Shipyard did you work in any other shipyard in the **year 2023**?

- Yes (if yes, please specify where and when): _____
- No

11. Have you had an occupational health check before starting to work at Turku Shipyard?

- Yes
- No (if no, when was your last occupational health check (try to be as specific as possible: month/year): _____)

12. Can you describe your main tasks/work in the shipyard?

The below information concerns the period of 3 months before start of symptoms:

Please mark all performed activities during this period:

- hitsaaja -welder
- levyseppä –plater
- operaattori (automatoisoidun hitsaus/polttoleikkauskoneen käyttö)- operator (in automated use of welding/oxy-fuel cutting machine)
- putkiasentaja- plumber/pipefitter
- koneasentaja- mechanic
- sähköasentaja- electrician
- lvi-asentaja- HVAC-technician/mechanic
- sisustusasentaja – interior technician/mechanic
- maalari ja ruiskumaalari –(industrial) painters or spray-painters
- kunnossapito (sähkö-, nosturi-, koneasentaja)- maintenance and repair (electricians, crane-mechanics, mechanics)
- varastomiehiä- storage workers
- kuljetusmiehiä (trukki, nosturi)- transportation (crane and forklift-drivers)
- siivoja – cleaner
- hiekkapuhallus - sandblasting
- Any other activities:

13. Which sector of the shipyard do you work in?

The below information concerns the period of 3 months before start of symptoms:

Outfitting ship on wet dock (Varustelutyö laiturissa olevassa laivassa)

- Machinery & Technical decks (konevarustelu)
- Interior & Passenger decks (varustelutyö, sisustus ja hyttikannet)
- Electrical outfitting (sähkövarustelu)
- HVAC & catering, kitchen areas (varustelutyö, LVI ja keittiöalueet)
- Deck outfitting (kansivarustelu)

Outfitting ship on dry dock (Varustelutyö allasvaiheen laivassa)

- Machinery & Technical decks (konevarustelu)
- Interior & Passenger decks (varustelu sisustus ja hyttikannet)
- Electrical outfitting (sähkövarustelu)
- HVAC & catering, kitchen areas (varustelu LVI ja keittiöalueet)
- Deck outfitting (kansivarustelu)

Outfitting outside in tents (Lohkovarustelutyö ulkona teltoissa)

Hull production (Runkotuotanto)

- Part fabrication (osavalmistus)
- Block assembly (lohkonkoonti)
- Grand block assembly (suurlohkonkoonti)
- Hull assembly (rungonkoonti)
- Surface treatment, (pintakäsittely)

Other: _____

14. Average amount of time spent at workplace per workday:

- More than 10 hours/day
- 8 – 10 hours/day
- 4 – 7 hours/day
- Less than 4 hours/day

15. Which statement best describes your **main/general** working conditions (if it varies a lot, please check all that apply):

- I do not work near other people (>30 m)
- I work with others but not closely (e.g., private room)
- I work slightly close (e.g., shared room) to other persons
- I work moderately close (at arm's length) to other persons
- I work very close (near touching) to other persons

16. Which best describes your working environment:

- Only indoors
- Mainly indoors (more than 4 hours/day)
- Mainly outdoors (more than 4 hours/day)
- Only outdoors
- Both equally

17. Average time in hours spent on welding:

- More than 5 hours/day
- 3-5 hours/day
- 1-2 hours/day
- Not applicable/does not weld

18. Have you inhaled any of the following agents in your workplace? For each type of exposure, please choose what best applies to your daily work situation (please put "x" in the correct column in each row). Please note that exposures have been divided into those taking place indoors and outdoors.

The below information concerns the period of 3 months before start of symptoms.

Place	Exposure type	Never exposed	Occasionally exposed	Exposed less than half your working time	Exposed half or more of your working time	Don't know/not sure
Indoors	Welding fumes					
	Metal fumes from other sources than welding					
	Paint or solvent fumes					

	Metal dust					
	Wood dust					
	Sand or stone dust					
	Fire smoke					
	Tobacco smoke					
	Fibre insulation material dust (for example from mineral wool)					
	Dust from cleaning, brushing, or sweeping					
	Other:					
Outdoors	Welding fumes					
	Metal fumes from other sources than welding					
	Paint or solvent fumes					
	Metal dust					
	Wood dust					
	Sand or stone dust					
	Fire smoke					
	Tobacco smoke					
	Fibre insulation material dust (for example from mineral wool)					
	Dust from cleaning, brushing, or sweeping					
	Other:					

19. Have you used the following respiratory personal protective equipment at your work when you or other workers nearby are welding, grinding or doing other work producing dust or fumes? For each type of protective equipment please choose what best applies to your daily work situation (please put "x" in the correct column in each row).

The below information concerns the period of 3 months before start of symptoms.

Type of protective equipment	Always	Most of the time	Occasionally	Never	Not available
Disposable half mask with particle filters (FFP2 or FFP3) 					
Half mask with P2-P3 filters, non-powered 					
Powered filtering (P) device incorporating a mask, a helmet, or a hood 					
Continuous flow compressed air line breathing device with welding mask, helmet or hood or mask 					

20. How often have you borrowed/used the same respiratory protective equipment as your workmate?

- Every day
- 3-4 times a week
- Once or twice a week
- Only occasionally
- Never

Section C: Other risk factors (tick any that apply)

The below information concerns the period of 3 months before start of symptoms (questions 21-25).

21. How often do you drink any alcohol (beer, wine, spirits, etc.)?

- Daily or almost daily
- 2-3 times a week

- Once a week
- 2-3 times a month
- Once a month
- Less than once a month

Never

22. Smoking status:

- Non-smoker
 Former smoker
 Current smoker

23. If in question 22 you answered "former/current smoker": on average how many cigarettes per day do you or did you smoke?

- Less than 1 cigarette a day
 1-5 cigarettes a day
 6-10 cigarettes a day
 11-20 cigarettes a day
 More than 20 cigarettes a day

24. Do you use vaping devices such as e-cigarettes or e-vaporizers?

- Yes
 No

25. Pre-existing health conditions (if you use prescribed medication for other health conditions, please fill in "other"):

- Dysfunction or absence of the spleen

Long-term (chronic) respiratory/lung disease (such as asthma or COPD)

Long-term (chronic) kidney disease

Long-term (chronic) heart disease

Long-term (chronic) liver disease

Diabetes

Taking immunosuppressive medication like corticosteroid tablets, prednisolon, hydrocortisone tablets, dexamethasone tablets, or biological treatment

Immunodeficiency due to illness (such as HIV, leukemia, lymphoma, or other)

Any blood (haematological) disease

Other (please specify): _____

None

Section D: Vaccination status

26. Were you vaccinated against pneumococcal disease in **October 2023**?

- Yes
 No

27. Were you vaccinated against pneumococcal disease **while working at Turku Shipyard or in connection with starting work at Turku Shipyard**?

- Yes, (when: _____)
 Yes, I'm not sure when
 No
 I don't know/not sure

28. Were you ever vaccinated against pneumococcal disease **before working at Turku Shipyard**?

- Yes, (when: _____)
 Yes, I'm not sure when
 No
 I don't know/not sure

29. If in question 26, 27, or 28 you answered "yes": what type of vaccine was used for the vaccination?

PPV23 (Pneumovax)

PCV20 (Apexxnar)

PCV13 (Prevenar 13)

Other: _____

I don't know/not sure

Thank you for your participation!!!