Air pollution awareness in Health Care Professionals in Wales

Report of findings 2025

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Executive summary

This national survey of Health Care Professionals (HCPs) across Wales provides a snapshot of:

(1) How they understand air pollution and its effects on health;

(2) How they communicate with the public on the topic of air quality (particularly with vulnerable patient groups); and

(3) What opportunities exist to improve understanding, behaviour and – ultimately – public health.

Responses were received from 137 professionals around Wales, with a final sample of 111 respondents. The main findings were:

The majority of HCPs that were surveyed said they do not currently discuss air pollution with patients. None of the Primary Care Professionals surveyed, and just 8% of the Secondary Care Professionals, said they always discuss air pollution. Eighty-eight percent of Secondary Care Professionals said they never discuss air pollution with patients.

Lack of knowledge and lack of time were given as the main reasons for not discussing air pollution with patients.

Between 83% and 93% of HCPs were not aware of where they could find reliable air quality monitoring data for their local practice area.

Many HCPs indicated that they would like more information in the form of signposting to reliable information and (to a lesser extent) training.

HCPs tended to see some patient groups (e.g., respiratory and cardiac patients) as more vulnerable to the effects of air pollution than others (e.g., mental health patients), but risk perceptions were quite variable overall. People living near major roads and industry were also widely seen as being at risk.

There was wide variability in how concerned HCPs felt their patients were about air pollution, and this did not seem to vary notably across health care sectors.

Self-assessed knowledge about the effects of air pollution in the HCPs' practice areas, and confidence in advising patients on exposure reduction, were generally low across sectors.

While HCPs, on average, scored higher than the general public on an air quality literacy measure, HCPs' air quality literacy was not related to their self-rated knowledge about air pollution or to their confidence in talking to patients about the subject. This suggests that when it comes to air pollution, many HCPs do not know what they do not know.

When given the opportunity to add further comment, HCPs:

(1) indicated a desire for more information and training;
(2) agreed that air pollution is an important issue;
(3) raised concerns about inequalities, time, patient anxiety and indoor air quality; and
(4) did not always feel it was relevant to their patients.

1. Introduction

1.1 Background

In December 2020, the coroner of Inner South London concluded that Ella Adoo Kissi-Debrah's medical cause of death was: acute respiratory failure, severe asthma, and air pollution exposure. The conclusion: Ella died of asthma contributed to by exposure to excessive air pollution[i]. Although Ella was not the first person to die prematurely from air pollution exposure in the UK, her case was a landmark as hers was the first death to be officially linked to this cause.

Ella's mother was not given information by health professionals about the health risks of air pollution and its potential to exacerbate asthma. If she had been, she would have taken steps which might have prevented Ella's death.

The inquest revealed several matters of concern:

1. In the UK, the level of air pollution allowed ('particulate matter') is set at a higher level than the World Health Organisation guidelines.
2. Low public awareness of air pollution means that they don't take steps to protect themselves from it.
3. Medical and nursing professionals aren't doing enough to tell patients and their caregivers about how harmful air pollution can be.

Ella lived in London, where concentrations of air pollutants are generally higher than in Wales, but there are areas in Wales where air pollution is in excess of air quality objectives (for nitrogen dioxide and particulate matter)[ii]. Exposure to air pollution can vary from place to place depending on where the pollution comes from and how it spreads. There is no safe level of exposure to air pollution[iii] and so measures to reduce exposure to vulnerable individuals, as well as the wider population, can be expected to reduce the health harm caused[iv]. Poor health and deprivation can combine as a 'triple jeopardy' to disproportionately affect high-risk population groups [v] – something that affects many areas in Wales. This means the most disadvantaged people face higher health risks due to social and behavioural factors, are more likely to be exposed to air pollution, and suffer more severe effects from that exposure.

Action to address air pollution is needed at multiple levels. While the greatest impact is likely to come from legislation and structural changes that reduce air pollution at source, there is still a very important role for public awareness and behaviour change. The Environment (Air Quality and Soundscapes) (Wales) Act 2024 creates a duty to promote awareness of air pollution. Medical professionals are a critical vector for educating the public on the health risks of air pollution. They are particularly well placed to empower patients who are vulnerable to air pollution, and their carers, to take action to reduce their exposure and protect their health.

For these benefits to be achieved, medical professionals must:

(1) have high levels of air pollution awareness which are

(2) shared widely amongst the professions leading to

(3) effective modelling and communication of pollution information to patients and carers.

At present, there is no evidence that patient-facing HCPs in Wales meet any of these three prerequisites.

1.2 What were the aims of this research?

To assess the current level of understanding and ability/willingness to comply with existing exposure reduction measures (and their effectiveness by compliance) by medical professionals.

To audit (and ultimately improve) professional understanding about pollution exposure and mitigation, and hence the ability to transmit this information to their patients and the public – ultimately offering to enhance population health.

Key questions:

1. What is the current level of understanding, among medical and nursing professionals, of air pollution and its effects on health?

2. How much does air quality knowledge vary within and between health professions?

3. Where there is understanding, how is this presented to, and received by, patients and their carers? What help and support is needed to improve this process?

4. Where there are gaps in understanding, what needs do they identify to fill those gaps?

5. What barriers do health professionals perceive to exist that might prevent compliance with exposure-reduction advice?

1.3 What research methods did we use?

We used a survey in order to collect responses from as many Health Care Professionals (HCPs) as possible in a timely and cost-effective manner, and to capture both quantifiable data and open-ended responses.

The target population for this sample was patient-facing HCPs working in Wales.

We collected the survey data online (via the Qualtrics survey platform) for the convenience of the respondents and to allow for reliable data aggregation, making every effort to collect data from across each health board and sector in Wales. Sectors included Primary and Secondary Care as well as other health care providers (e.g. Public Health Professionals, Dieticians, Community Care). We offered a prize draw for a shopping voucher to incentivise participation given the time constraints of these respondents.

During January 2025 we recruited respondents via professional networks and social media campaigns across the country. At intervals, we sent reminders and invitations for people to share the survey more widely with networks (this is called 'snowball sampling'). During February and March, Directors of Public Health were invited to share the survey widely. We also made efforts to reach under-represented health boards and professionals via direct contact and targeted posts in relevant social media groups. In total, 137 people responded between January and March 2025, leading to a final sample of 111 (see next section).

A full copy of the survey can be found in the Appendix. The spread of respondents across health boards and sectors can be found in Table 1 and the locations of the workplaces of respondents can be found in Figure 1.

1.4 How many responded – and where from?

We received responses from 137 people, but 23 did not complete the Air Quality Literacy Scale and were removed, leaving a sample of 114 people. Two people said they worked in both primary and secondary care. They are shown in the table below but are removed from the rest of the analyses to enable clearer comparisons between sectors. The one person who did not report their sector was similarly removed, leaving a final sample of 111 HCPs.

Table 1: Sample by health board and sector

Health Board	
Aneurin Bevan	2
Betsi Cadwaladr	6
Cardiff and Vale	5
Cwm Taf Morgannwg	18
Hywel Dda	14
Swansea Bay	52
Velindre	4
Other	13
Sector	
Primary Care	32*
Secondary Care	60*
Other	23
None given	1

* Two people endorsed both Primary and Secondary Care, and are counted under both rows

The map below (Figure 1) shows the locations of the 100 participants for whom we had a full set of data and postcodes (11 people did not provide valid postcodes, and so are not on this map, although they are included in all the other reporting below):

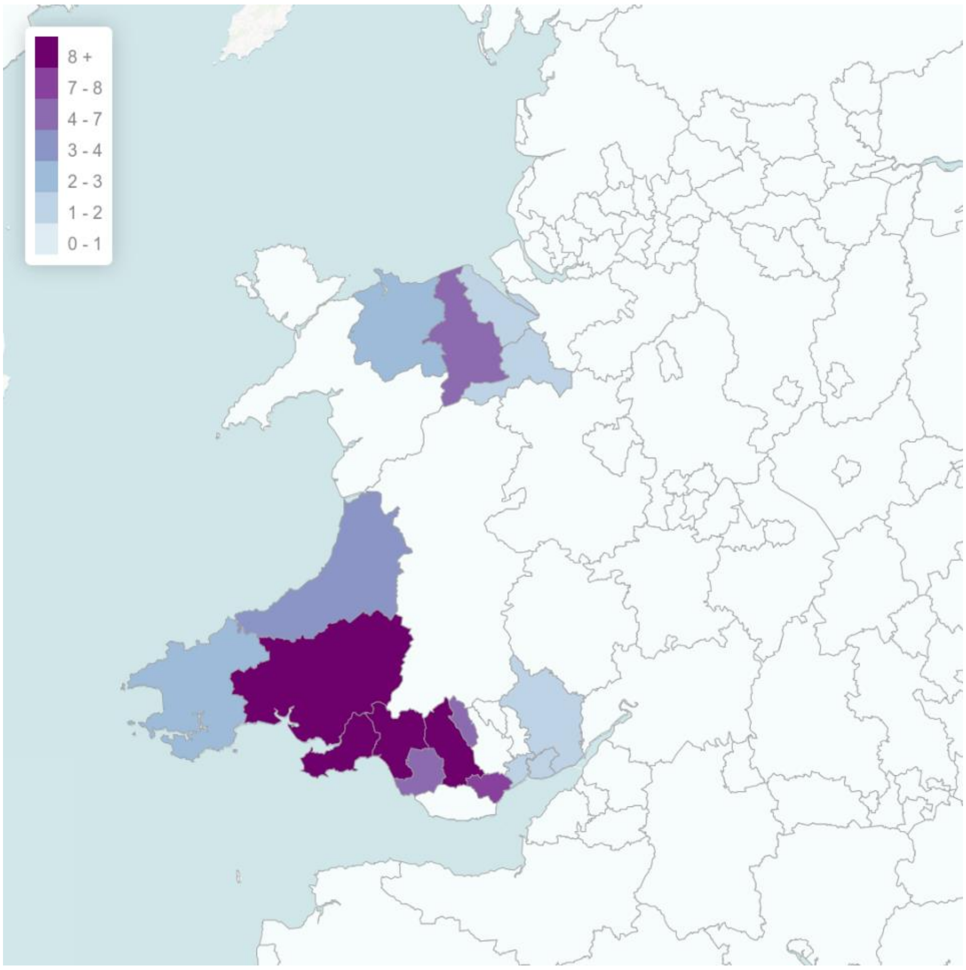


Figure 1: Location Map of respondents

2. Air pollution awareness and behaviour

The majority of HCPs that were surveyed said they do not currently discuss air pollution with patients. None of the Primary Care Professionals surveyed, and just 8% of the Secondary Care Professionals, said they always discuss air pollution. Eighty-eight percent of Secondary Care Professionals said they never discuss air pollution with patients.

Lack of knowledge and lack of time were given as the main reasons for not discussing air pollution with patients.

Many HCPs indicated that they would like more information about air pollution in the form of signposting to reliable information and (to a lesser extent) training.

HCPs tended to see some patient groups (e.g., respiratory and cardiac patients) as more vulnerable to the effects of air pollution than others (e.g., mental health patients), but risk perceptions were quite variable overall. People living near major roads and industry were also widely seen as being at risk.

Between 83% and 93% of HCPs were not aware of where they could find reliable air quality monitoring data for their local practice area.

The sample responses to the air pollution questions are recorded in Table 2 below by sector.

Table 2: Air pollution awareness and behaviour

	Primary care	**Secondary care**	**Other**
Do you discuss air pollution with patients?			
Yes	0%	7%	9%
No	77%	88%	65%
Sometimes	23%	5%	26%
How do you discuss this?			
Verbally	23%	9%	13%
Signposting to websites	0%	2%	9%
Other	0%	2%	13%
No response	77%	88%	65%
Why do you not discuss air pollution? **			
Lack of knowledge	50%	45%	22%
It would be counter to other health advice (e.g., anxiety)	3%	2%	4%
Lack of time	23%	31%	4%
No response	23%	12%	35%
‘Other’ response	40%	47%	52%
If you would like more information about air pollution and health, how would you like it? ** °			
Did not respond or did not ask for more information	10%	9%	4%
Signposting to reliable information	87%	71%	91%
Training	53%	28%	50%
Other	7%	3%	5%

Who do you consider to be vulnerable to air pollution? ** Δ			
All patients	53%	50%	68%
Patients living near a busy road or Industry	67%	75%	64%
Patients who use a wood burner in their home	37%	71%	36%
Respiratory	73%	79%	64%
Cardiac	50%	69%	36%
Mental Health	23%	45%	27%
Older Adults	50%	76%	36%
Paediatrics	53%	78%	36%
Do you know where you can find reliable air pollution monitoring data for the area where you practice?			
Yes	7%	17%	17%
No	93%	83%	83%
**If yes, what source(s) are you aware of? ** **			
Met Office	7%	10%	17%
BBC Weather	7%	5%	9%
Local authority website	3%	10%	13%
Welsh Government	7%	7%	17%
Charity Websites	0%	2%	4%
Other	0%	7%	0%
No response	93%	83%	83%

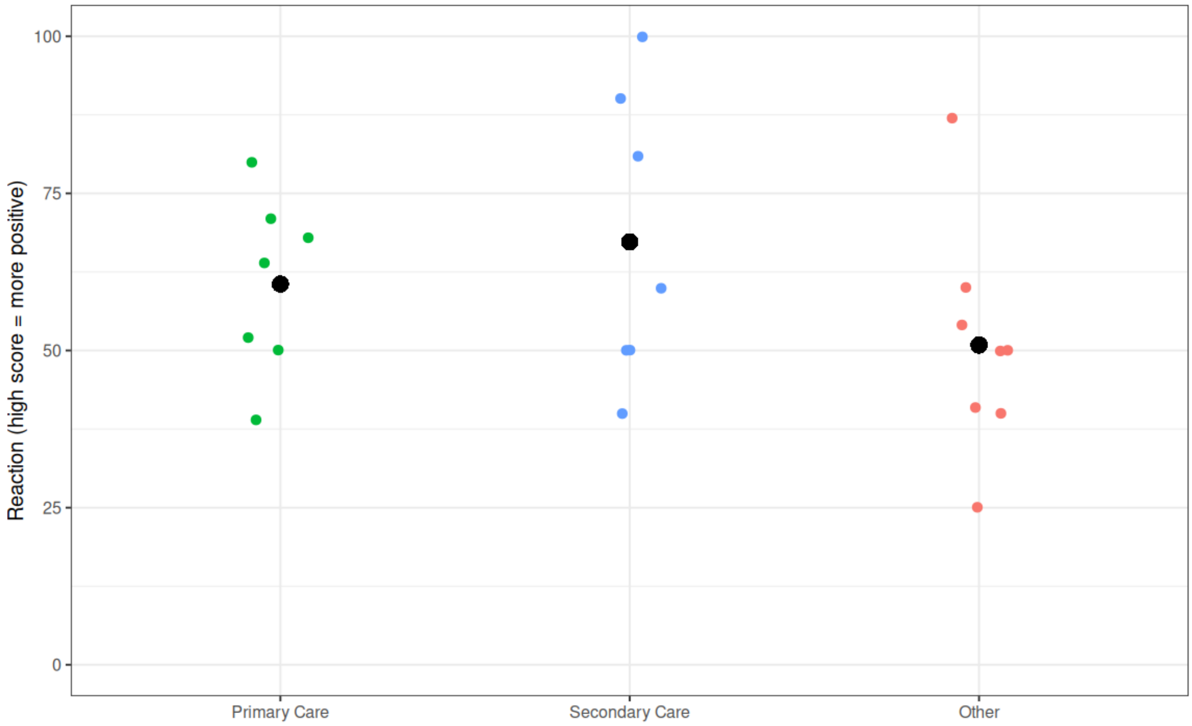
*** These percentages show how many people endorsed each response. As people could endorse multiple answers, these percentages can total more than 100%.*

° 102 (92%) of respondents said they would like more information.

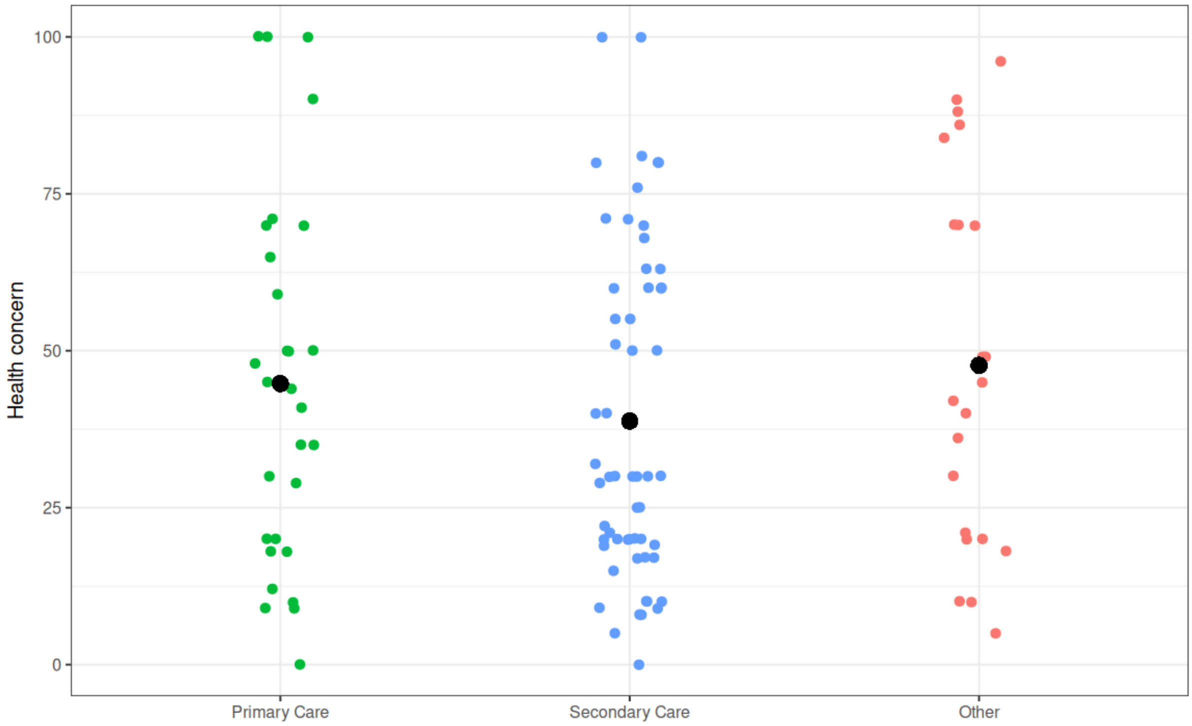
Δ 33 respondents selected the option 'All patients' and also went on to select one or more specific patient categories.

3. Discussing air pollution and health with patients

We asked: What is the typical reaction to discussing air pollution risks with your patients? Ratings were on a scale of 0-100, where a higher score indicated a more positive response. The coloured dots on the graph show individual respondents' scores, and the black dots show averages for the three sectors. These average scores hint at more positive responses in secondary care, but statistical analysis (with one-way analysis of variance, with an alpha criterion of .05 for statistical significance), finds that these differences are not reliable, likely due to the very small number of respondents giving air pollution advice to patients ($F(2,19) = 1.46$, $p = .26$).

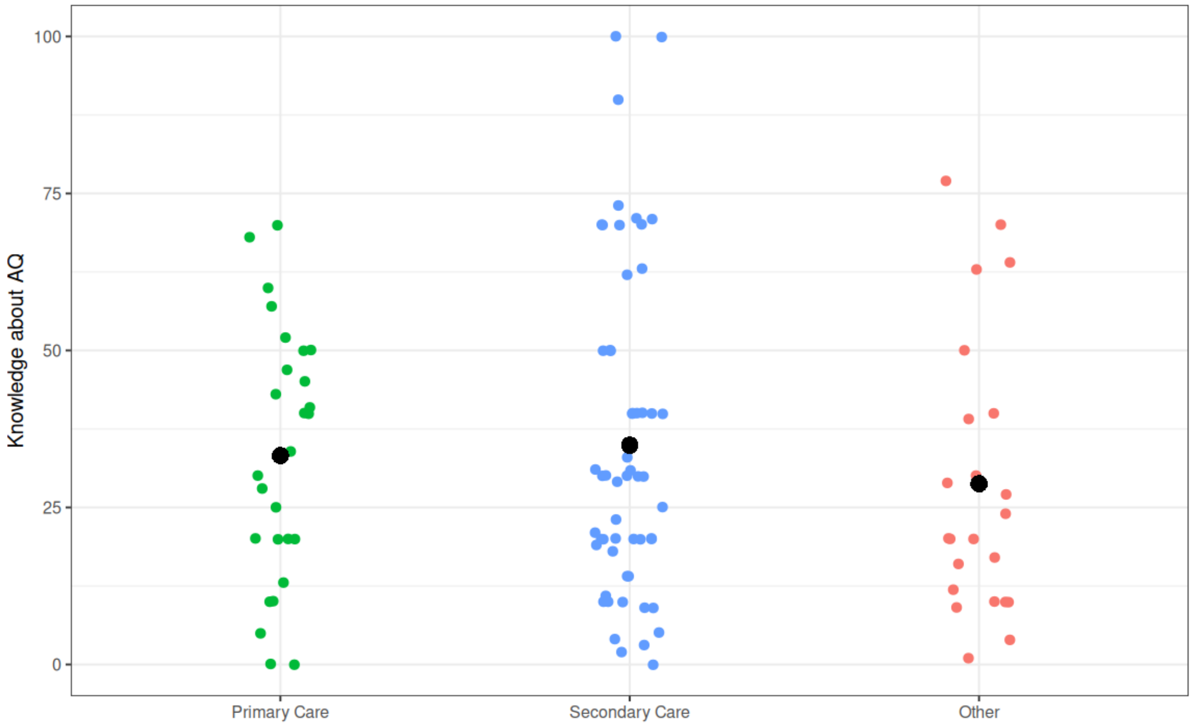


We asked: ‘To what extent do you feel air pollution is a health concern for people in the area where you practice?’ Ratings were on a scale of 0-100. The graph below suggests a broad range of responses within each of the sectors, with little difference between sectors’ midpoints ($F(2,105) = 0.98$, $p = .38$).

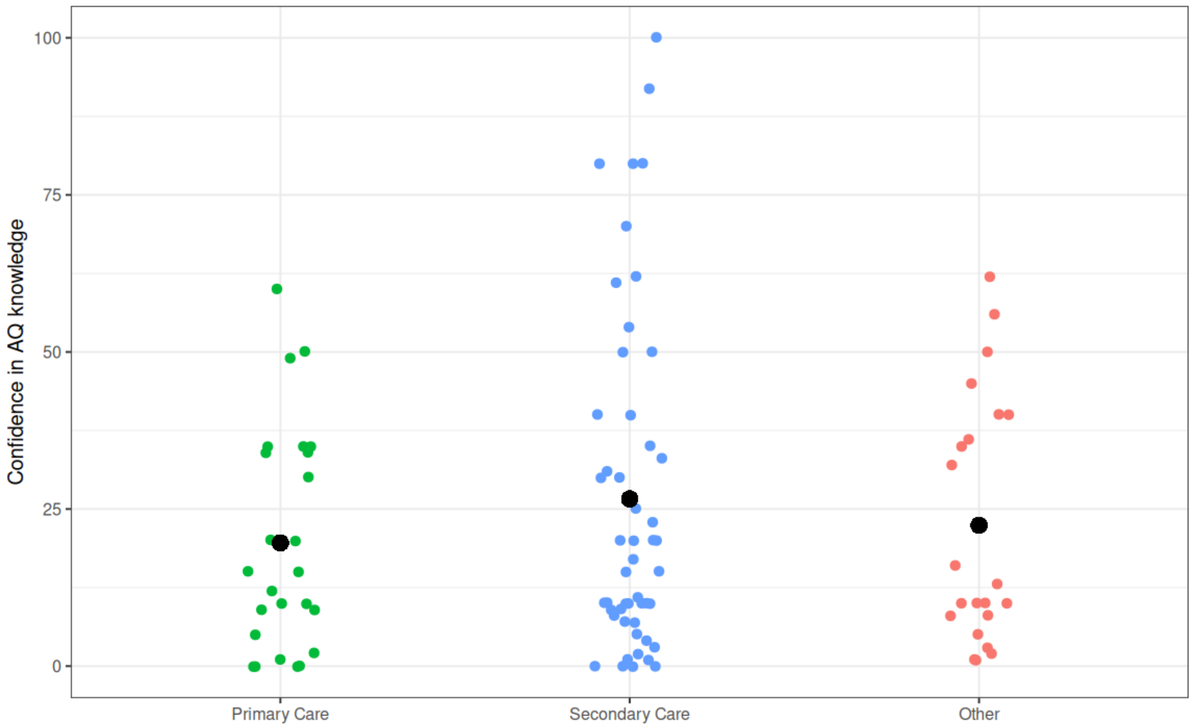


4. Professionals' knowledge about air pollution and health

We asked: ‘How knowledgeable do you feel you are about the effects of air pollution on health in the area where you practice?’ Ratings were on a scale of 0-100. All three sectors had relatively low average self-assessed air pollution knowledge, and there were no clear signs of differences between sectors ($F(2,102) = 0.55$, $p = .58$).

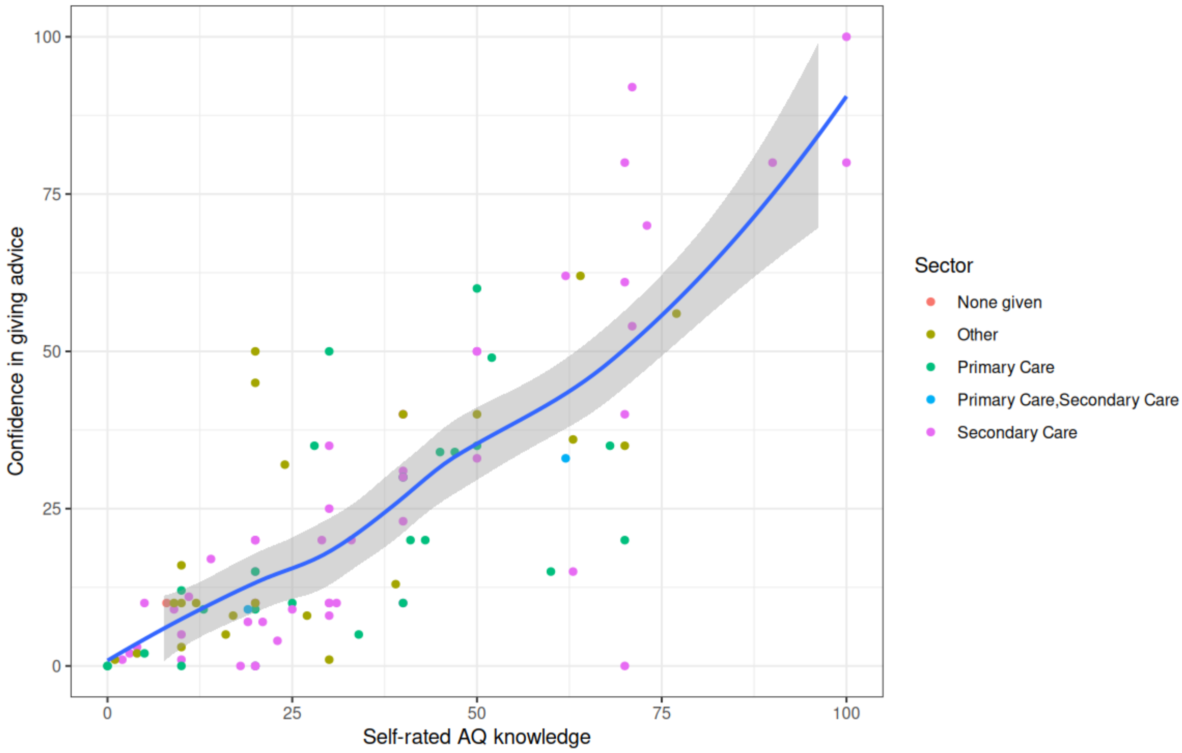


We asked: ‘How confident would you feel about advising patients on reducing their exposure to air pollution?’. Ratings were on a scale of 0-100. Again, there were no significant differences across sectors ($F(2,95) = 0.82$, $p = .44$):

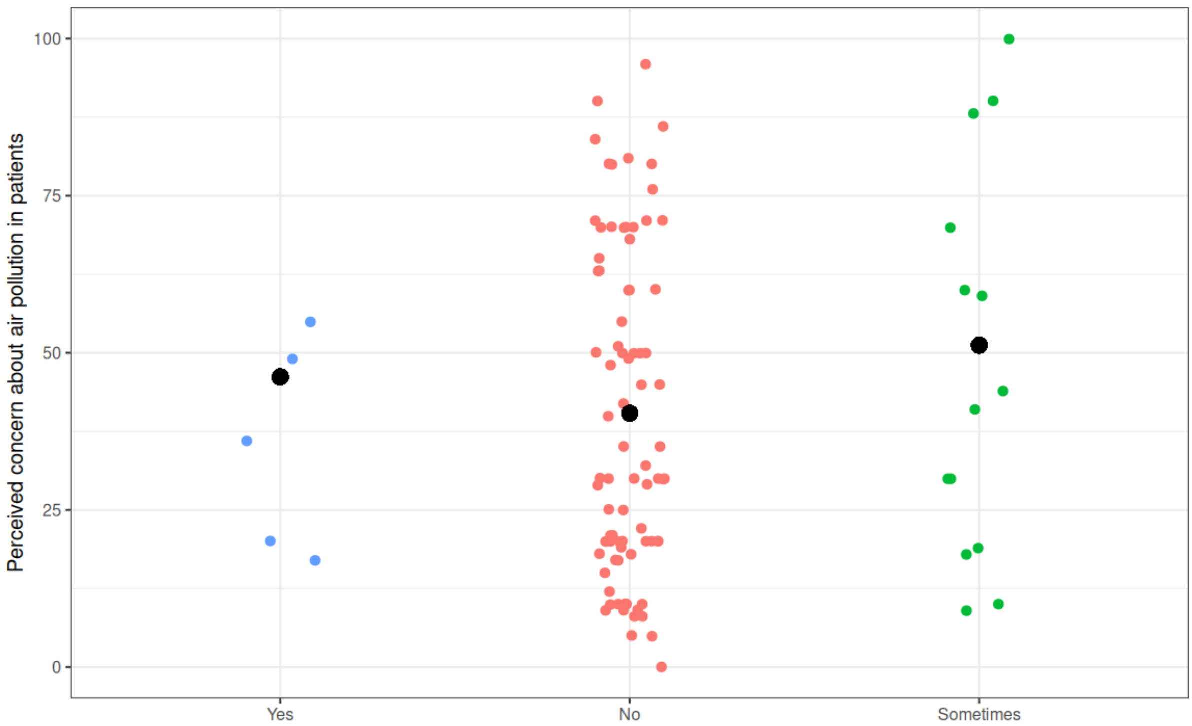


The previous two graphs show that self-rated levels of knowledge and confidence tended to be on the low side (overall average knowledge = 33/100, overall average confidence =

24/100), although there were a few individual respondents – particularly within the Secondary Care sector – who rated themselves as highly knowledgeable and confident on this topic. We provide a check on these self-assessments below. Perhaps unsurprisingly, self-rated knowledge and confidence were quite closely related:



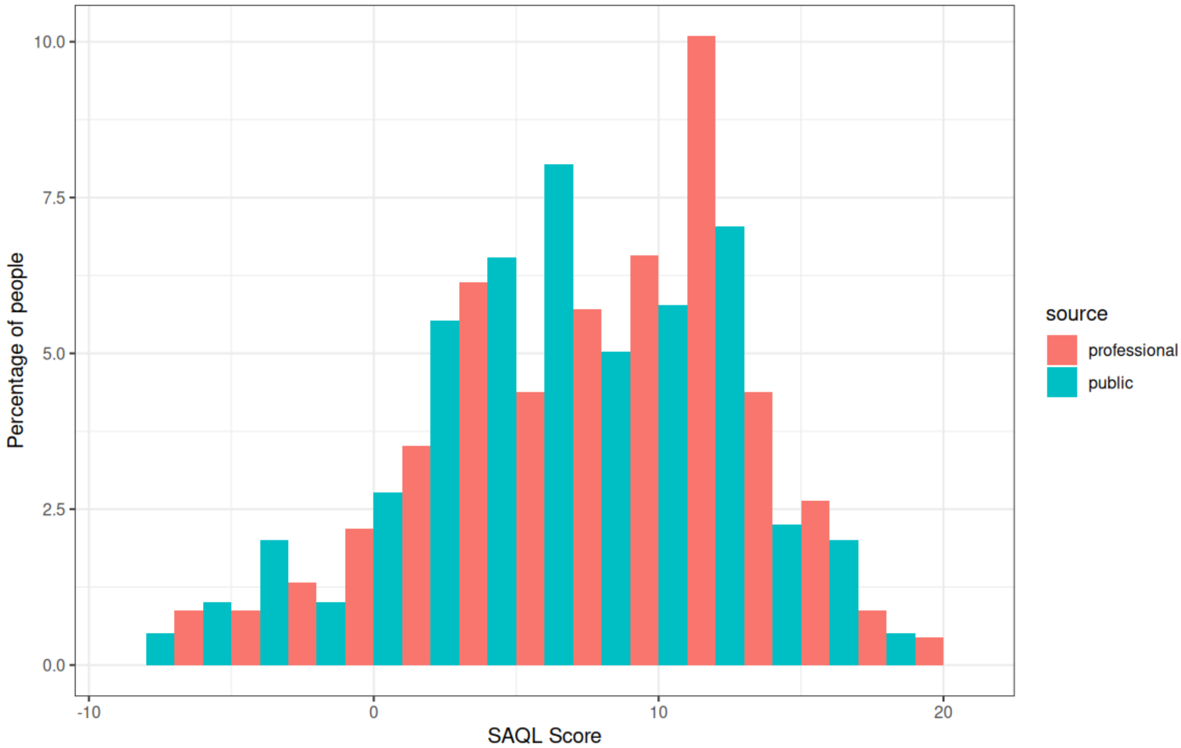
Finally, we looked at whether practitioners who said their patients were worried about air pollution were more likely to give advice on the subject. The analysis is limited by how few respondents said they did give advice on air pollution, but the graph below suggests there is little relationship between how concerned patients are felt to be, and the likelihood of the practitioner offering advice. Note in particular how a lot of respondents who said they never provide advice on air pollution, still reported high levels of concern amongst their patients.



5. The Swansea Air-Quality Literacy Scale (SAQLS)

The Swansea Air-Quality Literacy Scale (SAQLS) is a newly created test that can rapidly assess people’s intuitive understanding of air-quality systems in a broad range of adult populations. The test has previously been validated by comparing laypeople’s scores with scores from subject-matter experts. It involves 20 multiple-choice questions that assess people's understanding of (1) air pollution causes, (2) subtypes, (3) moderating factors, (4) consequences of exposure and (5) actions that can potentially reduce harm. Here we used the total SAQLS score, which measures a person's broad understanding of air pollution across all five of these areas.

The graph below shows the distribution of scores from the professionals in this study (in red), alongside the distribution of scores from an existing sample of scores that were obtained from laypeople (in blue). HCPs’ scores were significantly higher than laypeople’s on average ($t(236.51) = 2.69$, $p = .007$) but the difference is relatively small: professionals scored an average of 8.1/20 and laypeople an average of 6.4/20.



The analysis suggests that HCPs might often under- or over-estimate their own knowledge, and so some caution is important when considering HCPs' current communications with the public.

This is because there was very little relationship between how much the HCPs understood air pollution, as measured with the SAQLS, and their self-rated knowledge about air pollution (Pearson correlation, $r = .13$) or their self-rated confidence in speaking about it to patients ($r = .14$).

6. Qualitative data – open-ended comments

6.1 Methodology

We asked respondents to include any other thoughts they had about air pollution and managing patient exposure. We then used thematic analysis to review these open-ended responses. Four main themes emerged, encompassing a number of sub-themes.

Each theme (and sub-theme) is described below:

Desire for reliable information	Concerns raised	Importance of clean air	Relevance not perceived
• Patient advice • Literacy • Air quality information by area	• Inequalities • Infrastructure • Time • Patient anxiety	• Human rights • Indoor air quality	• Urban versus rural • Speciality specific

6.2 Theme 1: Desire for reliable Information

Respondents indicated a desire to receive more information in a number of key areas.

6.2.1 <u>Patient advice</u>

Many felt that they lacked reliable information to relay to patients about how and why they should reduce exposure to air pollution. There was a strong desire to receive training and/or a way to signpost patients to reliable information, as well as advice on how best to communicate this.

"I would value more information on how to practically advise patients."

"I would be very keen to learn about it so that I can reliably inform my patient with evidence based information."

"For older patients with COPD/asthma etc. But still ... have wood burners how do you tactfully mention this to them."

"This isn't an area that I have any knowledge in, I'm unsure if our health board would benefit greatly, but always good to stay up to date and provide gold standard care."

"This is a relatively new area for us in the service and we are scoping opportunities to get involved in sustainability and environmental projects to inform future practice and service provision."

"Lots of inconsistency and misinformation."

6.2.2 <u>Literacy</u>

There was clear agreement that the issue is of importance and that there's a need for greater air quality literacy in HCPs and patients.

"I do think this is an important issue and probably best for primary care and specialist medical physicians. I think better knowledge across the board for medics and the public is key."

"Would like evidence that shows what are the risks and what health improvements can be achieved by changing ways."

"I think levels of understanding about the effects of air pollution are very low both in the general population and amongst clinicians. It was not emphasised at medical school!"

6.2.3 Air quality information by area

Access to reliable data on local air pollution levels was seen as important, in order to be able to advise patients.

"I'm not aware of enough local information about potential air pollution in this area to help inform patients to manage exposure."

"It's worth knowing which areas within my health board have higher air pollution."

"consideration of factors such as wood burners and diesel fumes makes me think that I'm not aware of enough local information about potential air pollution in this area to help inform patients to manage exposure."

"the issue varies massively across the patch. Would be great to have an easy access dashboard on key air pollutants affecting our area that we could access to inform health improvement work."

6.3 Theme 2: Concerns raised

A number of respondents raised concerns about communicating air pollution advice to patients in some key areas:

6.3.1 Inequality

Many were concerned about whether patients had control over their exposure to air pollution, due to factors like where they live or work.

"More challenging if reducing exposure is not within control of the individual e.g. occupational exposure, location of house. Would welcome advice on how to also tackle structural causes of patient / population exposure to air pollution in order to reduce inequalities in exposure and health outcomes across the population."

"Exposure to air pollution is a well-established health risk. However, the challenge is that patients are often unable to control their environments to reduce risks to their health. For example, not having the means to move from high road traffic areas or to better quality accommodation."

6.3.2 Infrastructure

They also raised concerns about the difficulties of advising patients to manage exposure when the current infrastructure in many areas does not support this – including at hospital sites.

"We live in a very car dependent society - limited public transport and roads are largely unsafe for cyclists. I think we need to think about urban planning and creating more opportunities for shared or active transport for healthcare professionals themselves before starting to advise patients. If the infrastructure to support the change is not in place how can we expect people to make the change or feel able to do so."

“media portrays this as a problem affecting lower socio economic minorities in fact problem [sic] affecting everyone as we are al [sic] pedestrians at times. We live near busy roads.”

“Concerns at A/E departments with Ambulances [sic] being delayed with either engines continually running or heater systems effecting [sic] air pollution.”

6.3.3 Time

Another concern was lack of time to include air pollution exposure advice during patient consultations.

“Whilst I agree with MECC principles, there is only so much we can target during a patient appointment with limited resource and time per patient. If someone's main concern is not being able to walk upstairs due to knee pain, we have to target that alone as we don't have time for any further messaging.”

“Limited time in our job .... air pollution would not be relevant as already committed to look at lifestyle - eg smoking, exercise.”

6.3.4 Patient anxiety

There was apprehension about the potential for raising patient anxiety if air pollution exposure advice was to be included in consultations.

“Our patient group have a range of specific stresses to contend with. Some advice may be useful to the most likely vulnerable groups but in my experience, often focused specific info can add even more stresses to families.”

6.4 Theme 3: Importance of clean air

There was general agreement that access to clean air is important for everyone. Comments also centred around how and why this is often not the case and what might be done about it in some key areas:

6.4.1 Human rights

Clean air was observed as a basic human right but that there are often barriers to clean air that affect patients and are out of their control.

“Clean air is a human right - just as clean water is.”

“We have a lot of traffic near the hospital and lots of cigarette smokers outside.”

6.4.2 Indoor air quality

As well as outdoor sources of air pollution, respondents highlighted the issue of indoor air pollution and what can be done to improve this.

“My main concern in this rural area is actually the poor indoor air quality during an ongoing pandemic. Chronic Fatigue in kids used to be rare, but now that schools are full of Covid I know more children with post-viral fatigue than I ever thought I’d see in my whole

career. I think that is a much bigger public health issue for Wales just now, certainly in my area."

"I did a lot of work in schools looking at air pollution and importance of air quality. Actively supporting the need for mechanical ventilation in homes as an equal priority to central heating."

"Can home air purifiers be of benefit?"

6.5 Theme 4: Relevance not perceived

In some cases, respondents commented that they (or their patients) did not perceive air pollution to be relevant to them, either because of their location or speciality.

6.5.1 Urban versus rural location

Rural locations were less likely to be viewed as vulnerable to air pollution.

"I appreciate that air pollution might be more of an issue in built up areas. The data I reviewed when making Power Point and information presentations suggested that - on the whole - air quality in W Wales is v good."

"In Aberystwyth and surrounding area with many families being farmers, they do not view air pollution as an issue as its [sic] mostly rural with not as much traffic. For farming families they are not interested in changing if it will impact on their farming and/or have used wood burners etc for many generations in their family so do not see need to change."

6.5.2 Speciality specific

Those working in Mental Health and Psychology services were less likely to see air pollution as relevant.

"I believe this is an important topic but as a mental health practitioner I did not encounter a context focus on this in my work."

"In psychology it is unlikely to come up in discussion."

Given that there is growing evidence of links between air pollution and mental health[vi], this is an interesting finding to emerge and may represent an important focus for raising awareness.

7. Conclusions

This survey assessed 111 Health Care Professionals (HCPs) operating in Wales. Respondents had extremely variable views on how concerned the public were about air pollution. There was a lack of consensus amongst HCPs about which patient groups were most at risk from air pollution.

The HCPs who answered this survey mostly did not discuss air pollution with their patients. This could be due to time constraints, lack of air quality literacy, or lack of reliable information. HCPs were keen to learn more and receive information that can be conveyed to patients, either via training or, especially, through the ability to signpost patients to reliable information. Notably, the survey found very weak relationships between HCPs’ knowledge about air pollution and their self-rated knowledge and confidence in advising patients. This points to a situation where many HCPs do not know what they do not know about air pollution.

More in-depth analysis of qualitative comments revealed wider concerns amongst the HCPs regarding inequalities in air pollution exposure, the need for changes to infrastructure to support access to clean air, and the importance of minimising patient anxiety. Addressing poor indoor air quality for patients emerged as a further concern for the HCPs, indicating an area where more support is needed.

8. References

[i] https://www.judiciary.uk/prevention-of-future-death-reports/ella-kissi-debrah/

[ii] https://www.airquality.gov.wales/laqm/air-quality-management-areas

[iii] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

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[v] Brunt, H. and Jones, S.J., 2019. A pragmatic public health-driven approach to enhance local air quality management risk assessment in Wales, UK. *Environmental Science & Policy*, *96*, pp.18-26.

[vi] Bakolis, I., Hammoud, R., Stewart, R., Beevers, S., Dajnak, D., MacCrimmon, S., Broadbent, M., Pritchard, M., Shiode, N., Fecht, D. and Gulliver, J., 2021. Mental health consequences of urban air pollution: prospective population-based longitudinal survey. *Social psychiatry and psychiatric epidemiology*, *56*, pp.1587-1599.

Appendix

Survey Questionnaire

<u>Demographic information:</u>

Which health board do you work in?

Aneurin Bevan University Health Board
Betsi Cadwaladr University Health Board
Cardiff and Vale University Health Board
Cwm Taf Morgannwg University Health Board
Hywel Dda University Health Board
Powys Teaching Health Board
Swansea Bay University Health Board
Velindre University NHS Trust
Other (please state in the box below):

Please enter the postcode of your workplace:

Do you work in primary or secondary care?

Primary Care

Secondary Care

Other (please state in the box below):

What is your profession?

General Practitioner

Physician Associate

Foundation Doctor

Speciality Training Doctor

Consultant

Nurse

Advanced Nurse Practitioner

Health Visitor

District Nurse

Midwife

Radiologist

Physiotherapist

Clinical Psychologist

Occupational Therapist

Pharmacist

Other (please state in the box below):

Specialty Area? (if relevant). Please state in the box below:

Air pollution risk action:

Do you **discuss** air pollution risks with your patients?

Yes

Sometimes

No

If yes or sometimes: How do you do this? Select all that apply:

Verbally

Signposting to Support Websites

Leaflet

Other (please state in the box below):

If yes or sometimes: What is the typical reaction to discussing risks with your patients?

Very Negative - Very Positive

If no: Why not? Select all that apply:

Lack of knowledge

Lack of time

Counter to other health promotion advice (e.g. anxiety)

Other (please state in the box below):

Air pollution risk awareness:

To what extent do you feel air pollution is a health concern for people in the area where you practice?

Not at all - Very much so

How knowledgeable do you feel you are about the effects of air pollution on health in the area where you practice?

Not at all knowledgeable - Extremely knowledgeable

Do you know where you can find reliable air pollution monitoring data for the area where you practice?

Yes

No

If yes, what source are you aware of (select all that apply)?

Met office

BBC weather

Local Authority website

Welsh Government

Charity websites

Other (please state in the box below):

Do you think that air pollution exposure should be a concern for your patients?

Yes,

Not sure

No

What patients do you consider to be vulnerable to air pollution? Select all that apply:

Respiratory

Cardiac

Mental Health

Older Adults

Paediatrics

Patients living near a busy road or Industry

Patients who use a wood burner in their home,

Other (please state in the box below):

How confident would you feel about advising patients on reducing their exposure to air pollution?

Not at all confident - Extremely confident

Barriers and needs:

Would you like to know more about the effects of air pollution on health?

Yes

Maybe

No

If yes or maybe: How would you like to learn more? Select all that apply:

Training

Signposting to reliable information

Other (please state in the box below):

If no: Why not? Select all that apply:

No time

I don't think it is important

It is not relevant to my patients

It is not my responsibility

Other (please state in the box below):

Would you like to know more about how to advise your patients to reduce their exposure to air pollution?

Yes

Maybe

No

If yes or maybe: How would you like to learn more? Select all that apply:

Training

Signposting to reliable information

Other (please state in the box below):

If no: Why not? Select all that apply:

No time

I don’t think it is important

It is not relevant to my patients

It is not my responsibility

Other (please state in the box below):

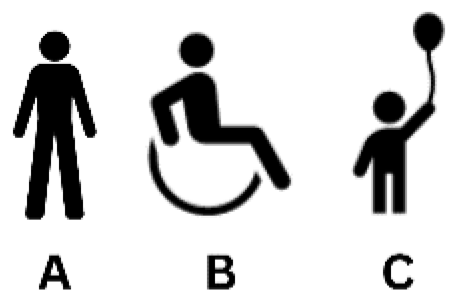
Please include here any other thoughts you have about air pollution and managing patient exposure. Please state in the box below:

Swansea Air Quality Literacy Survey (SAQLS)

Instructions to respondents:
This survey has been designed to assess awareness (literacy) around air quality and air pollution and its effects. There are 20 multiple choice questions in total. Please select what you believe to be the correct answer for each question:

Sub-scale 1 – Causes:

Q.1



If these three people were by the edge of a road, who would be MOST EXPOSED to air pollution from passing cars?

- A
- B
- C

Q.2
Town A and Town B are 10 miles apart. The emissions from a truck in Town A will mostly affect people in…

- Town A
- Town B
- Both Town A and Town B equally

Q.3
Which of these farming practices will have the biggest effect on how safe the air is to breathe?

- Ploughing
- Harvesting
- Fertilising

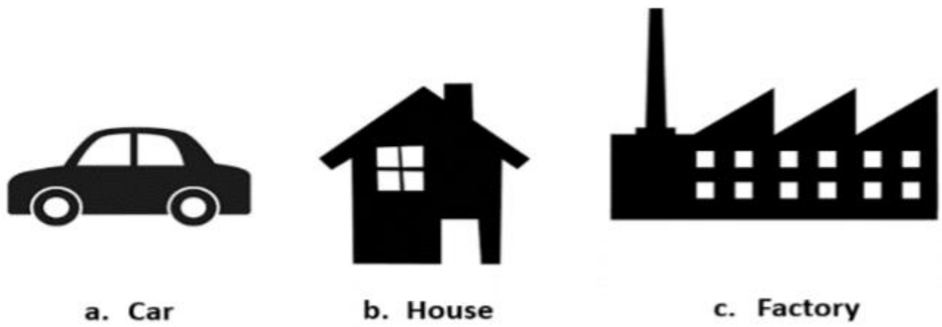
Q.4
VOC stands for ‘volatile organic compounds’. Which of these cleaning products would you choose for the best air quality in your home?

Bottles labelled:
- "Now with added VOCs!"
- "Now with zero VOCs!"
- "Now with all-natural VOCs!"

Sub-scale 2 – Sub-types:

Q.5
Is it more harmful to your health to breathe small particles of smoke or to breathe large particles of smoke?
- Small
- Large
- They are equally harmful

Q.6



If you were told there was a lot of **nitrogen dioxide** in the air, which of these would you most suspect?
- Car
- House
- Factory

Q.7
What is formed when polluting gases combine with sunlight?
- Fog
- Ozone
- Mist

Q.8
Which of these is the most harmful to the lining of your lungs?
- Atmospheric ozone
- Ground level ozone
- Cloud inversion

<u>Sub-scale 3 – Moderators:</u>

Q.9
A pedestrian walking down a road next to heavy traffic will be exposed to air pollution for longer with windspeeds of:
- 2 mph
- 10 mph
- 15 mph

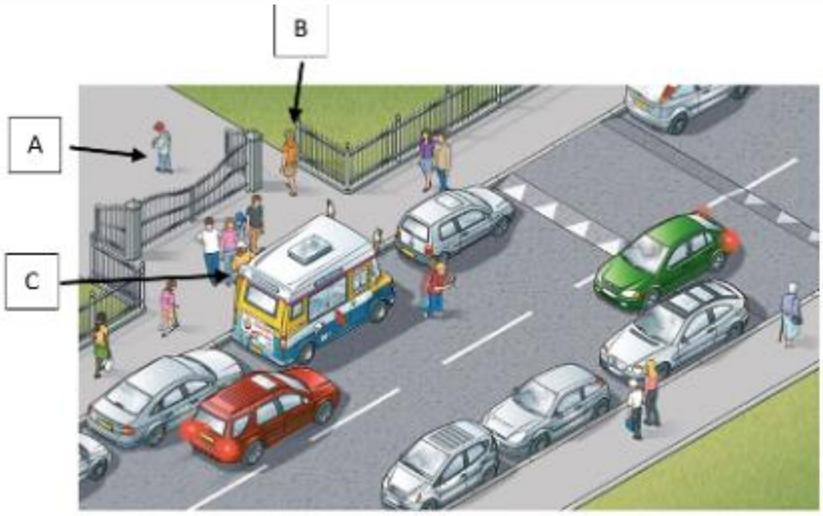
Q.10
In which of these locations is the air likely to be the cleanest?
- On a road through a valley
- On a road over a hill
- On a road through tall buildings

Q.11

Which of these smoke directions would indicate the most dangerous weather conditions for people walking around?

- At an angle
- Horizontal
- Straight up

Q.12



Which of these pedestrians will breathe the most exhaust gas?

- Persons A and B
- Person C
- All the same

Sub-scale 4 – Consequences:

Q. 13

Air Pollution contributes to mortality. What is the estimated equivalent number of deaths, associated with air pollution, in the UK each year for adults over 30 years?

- 50-100 premature deaths
- 29,000 – 43,000 premature deaths
- 900,000 – 1,000,000 premature deaths

Q.14
Which of these conditions is NOT related to polluted air in cities:

- Diabetes
- Dementia
- Athlete’s Foot

Q.15
Polluted air in cities has NOT been linked to:

- Infertility
- Phobias
- Hearing loss

Q.16
Exposure to traffic pollution is NOT strongly linked to

- Autism
- Dyslexia
- Depression

<u>Sub-scale 5 – Response efficacy:</u>

Q.17
Which of these actions would make it safer to burn gas or wood indoors?

- Opening an air vent
- Opening a window
- Turning on a fan

Q.18

Switching off a car's engine for 20 seconds at a red light:

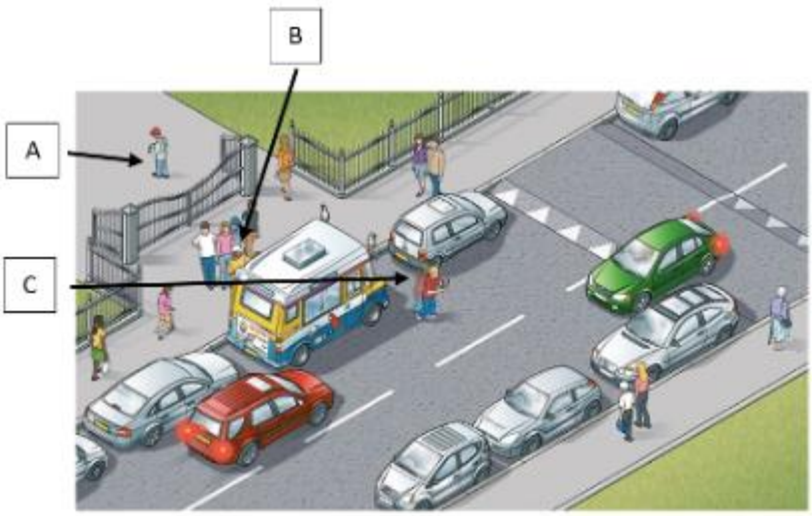
- Will have no effect on air pollution
- Will reduce air pollution
- Will increase air pollution from restarting your engine

Q.19

Which type of vehicle is worst for air quality?

- Petrol
- Hybrid
- Diesel

Q.20



Which of these people will be breathing the cleanest air?

- Persons A
- Persons B and C
- No difference