

Air pollution awareness in health care professionals in Wales

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Communicating actions to reduce air pollution exposure

Background

- Ella Adoo Kissi-Debrah died on the 15th February 2015, aged 9.
- The inquest revealed matters of concern, in summary;
 - iii. The adverse effects of air pollution are not being sufficiently communicated by medical and nursing professionals to patients and their carers.*
- Health care professionals: what is the current level of understanding of air pollution and its effects on health?
 - Is there variability in knowledge within and between health professions?
 - Are there gaps in understanding, what needs are identified to fill those gaps?
 - What barriers do health professionals perceive to exist, preventing compliance with exposure reduction advice?

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Aims

A 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.

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Methods: Recruitment

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

We collected the survey data online 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).

January 2025 - respondents recruited via professional networks and social media campaigns. At intervals, we sent reminders and invitations for people to share the survey more widely with networks ('snowball sampling').

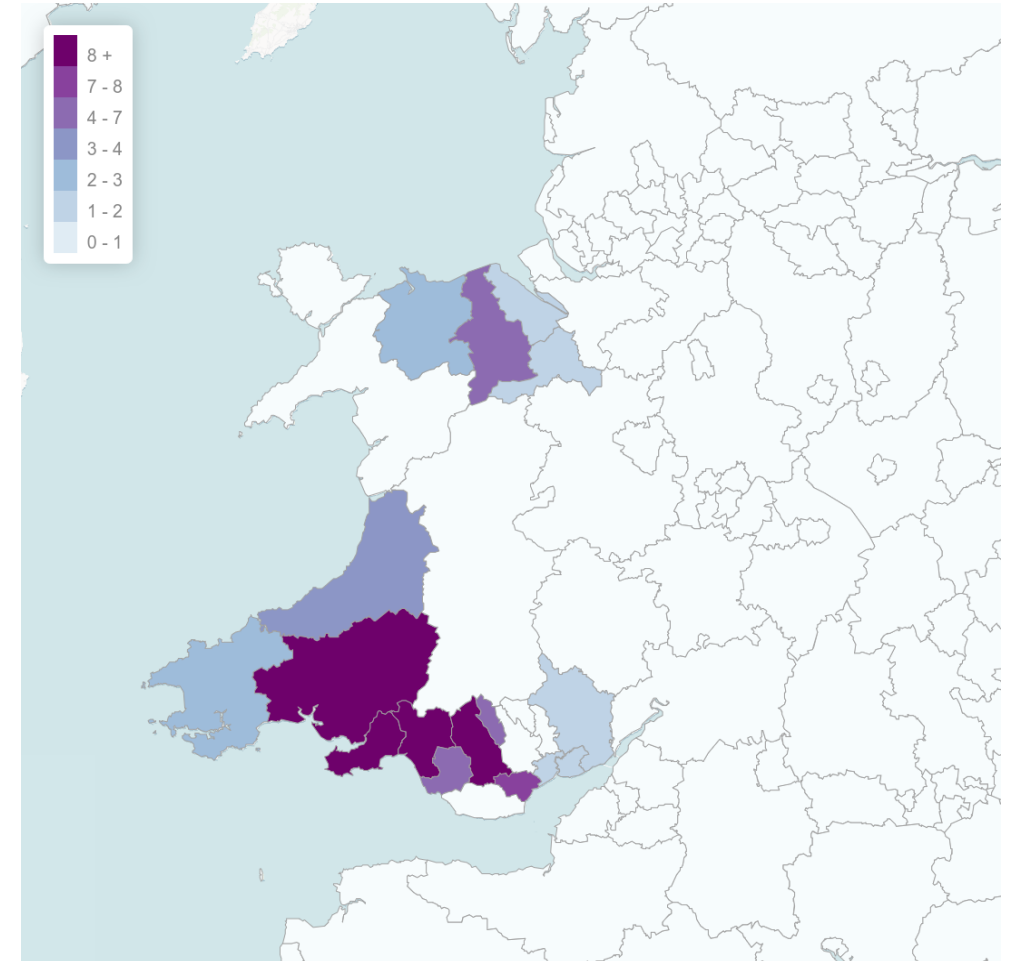
February/March 2025 - Directors of Public Health invited to share the survey widely. Under-represented health boards and professionals contacted directly and targeted posts in relevant social media groups. I

In total, 137 people responded (N=111 full data sets)

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Methods: Sample

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



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Methods: Survey

Key questions:

1. What is the current level of understanding, among medical and nursing professionals, of air pollution and its effects on health (including the Swansea Air Quality Literacy Scale; SAQLS)?
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?

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Findings: Air pollution awareness and behaviour

The majority of respondents 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.

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

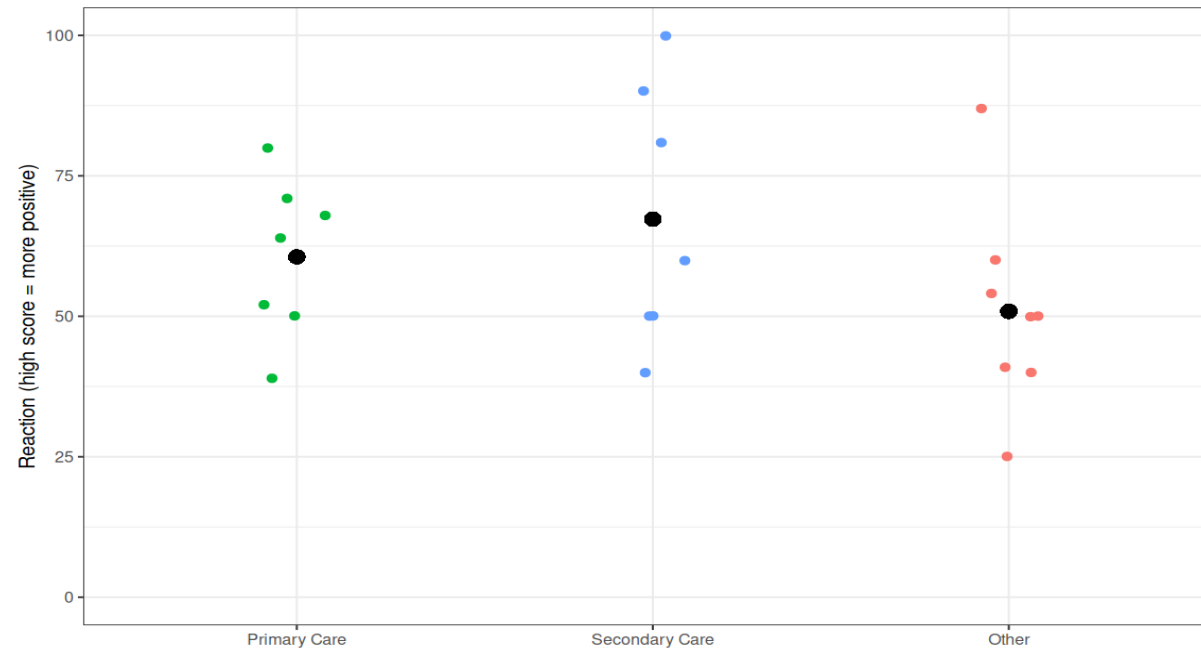
Many HCPs indicated that they would like more information about air pollution in the form of signposting to reliable information and (to a lesser extent) training.

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

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Findings: Discussing air pollution and health with patients

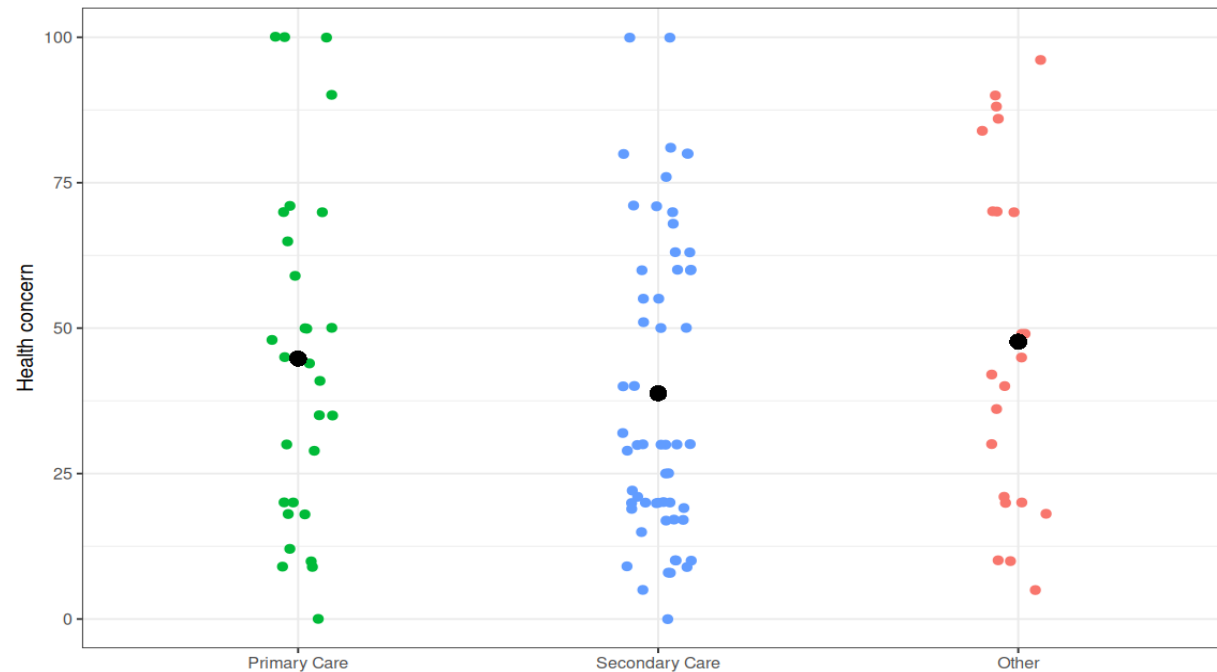
What is the typical reaction to discussing air pollution risks with your patients?



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Findings: Discussing air pollution and health with patients

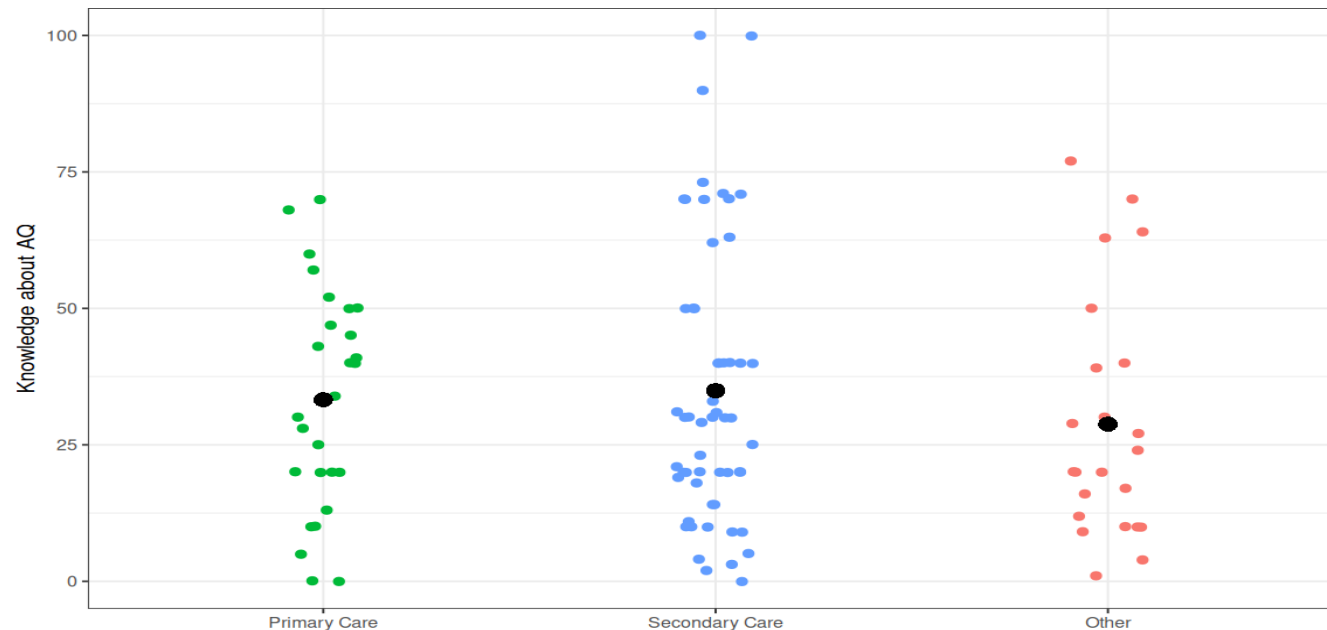
'To what extent do you feel air pollution is a health concern for people in the area where you practice?



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Findings: Professionals' knowledge about air pollution and health

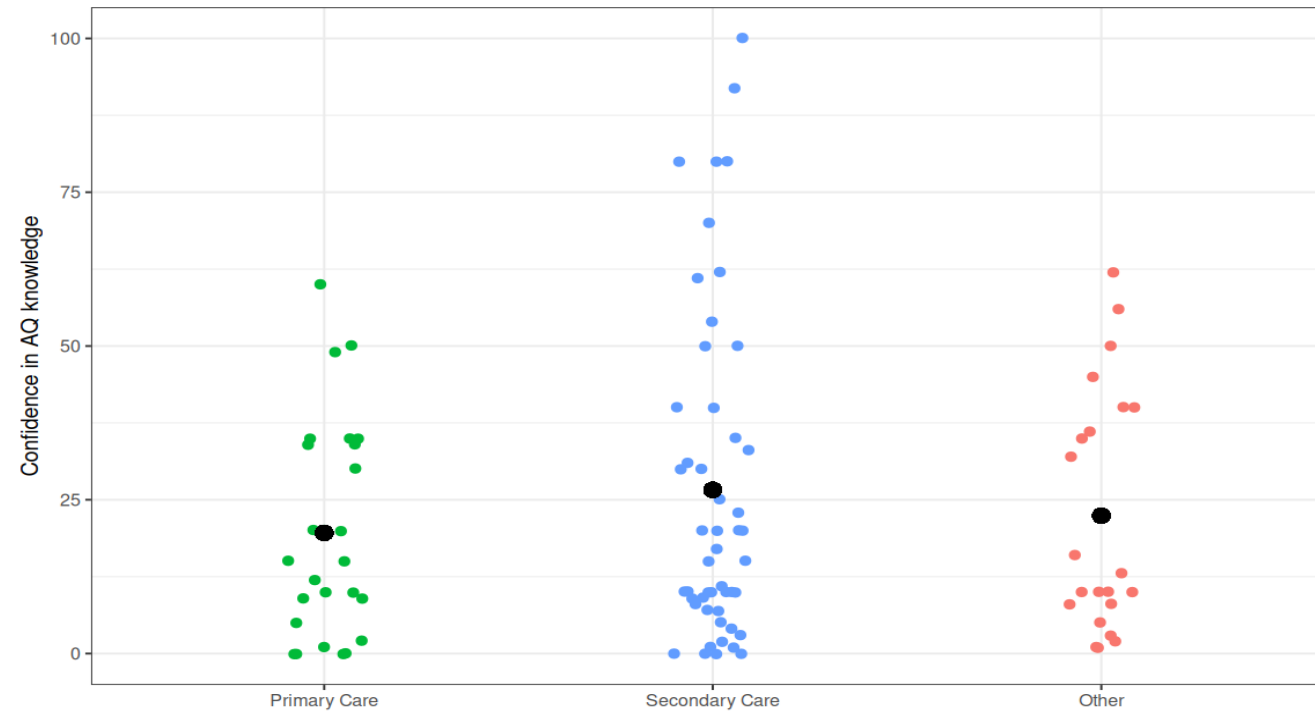
How knowledgeable do you feel you are about the effects of air pollution on health in the area where you practice?



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Findings: Professionals' knowledge about air pollution and health

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



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Findings: 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.

Swansea Air Quality Literacy Scale (SAQLS)

Example Questions:



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

- At an angle
- Horizontal
- Straight up

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

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

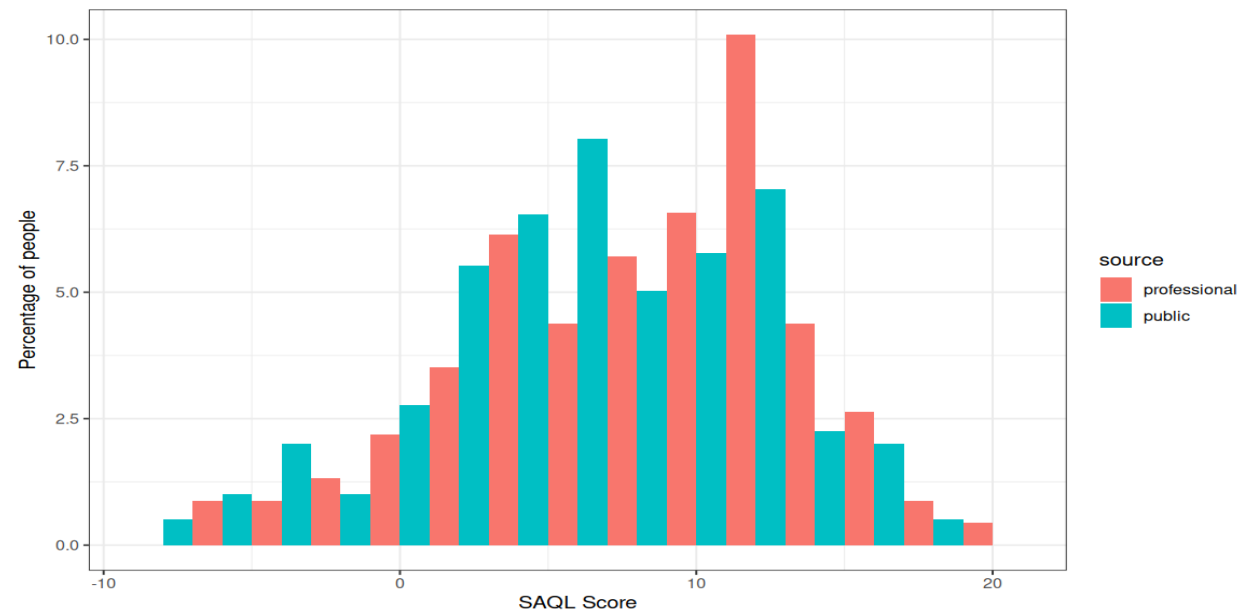
Is it more harmful to your health to breathe small particles of smoke or to breathe large particles of smoke?

- Small
- Large
- They are equally harmful

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Findings: The Swansea Air-Quality Literacy Scale (SAQLS)

Health care professionals' scores were significantly higher than members of the public 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.



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Findings: Qualitative Feedback

We also asked respondents to include any other thoughts they had about air pollution and managing patient exposure:

Desire for reliable information

- Patient advice
- Literacy
- Air quality information by area

Concerns raised

- Inequalities
- Infrastructure
- Time
- Patient anxiety

Importance of clean air

- Human rights
- Indoor air quality

Relevance not perceived

- Urban versus rural
- Speciality specific



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Findings: Qualitative Feedback

Desire for reliable information

"Lots of inconsistency and misinformation."

"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."

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



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Findings: Qualitative Feedback

Concerns raised

"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."

"...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."



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Findings: Qualitative Feedback

Concerns raised

"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."



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Findings: Qualitative Feedback

Importance of clean air

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

"My main concern is the poor indoor air quality.... Chronic Fatigue in kids used to be rare, but.... 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."

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Findings: Qualitative Feedback

Relevance not perceived

"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 [XXX] and surrounding area with many families being farmers, they do not view air pollution as an issue as its mostly rural with not as much traffic."



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Acting on the findings

Provide training that is time-efficient to improve air quality awareness in professionals.

Develop effective messaging to enable clear communication with patients.

Draw on/promote existing resources;

GAP, Asthma+Lung UK, BHF, NICE, etc

Include indoor air quality

Be mindful of the potential to increase patient anxiety

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Conclusion

The air quality in parts of Wales does not meet standards

There is no safe level of air pollution exposure.

There are actions that can help reduce air pollution exposure

Communicating these actions is challenging

This work does not exist in isolation;

The UK wide Committee on the Medical Effects of Air Pollutants (COMEAP) is reviewing the daily Air Quality Information System (AQIS)

The work complements the Welsh Government Clean Air Advisory Panel activity on improving communication around air pollution

Thank you
Any questions?



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