

REPORT ON PROCEEDINGS BEFORE

PORTFOLIO COMMITTEE NO. 2 - HEALTH

**INQUIRY INTO HEALTH IMPACTS OF EXPOSURE TO POOR
LEVELS OF AIR QUALITY RESULTING FROM BUSHFIRES AND
DROUGHT**

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Virtual hearing via videoconference on Wednesday 10 June 2020

The Committee met at 10:00.

PRESENT

The Hon. Greg Donnelly(Chair)
Ms Cate Faehrmann
The Hon. Wes Fang
The Hon. Emma Hurst (Deputy Chair)
The Hon. Natasha Maclaren-Jones
The Hon. Taylor Martin
The Hon. Walt Secord

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The CHAIR: Good morning and welcome to the first hearing of the Portfolio Committee No. 2 inquiry into the health impacts of exposure to poor levels of air quality resulting from bushfires and drought. Before I commence I would like to acknowledge the Gadigal people, who are the traditional custodians of the land. I pay respect to the Elders past and present of the Eora nation and extend that respect to other Aboriginal people who may be joining us today on the internet.

This is the first of two hearings that we plan to hold for this inquiry. We will hear from Asthma Australia and then three separate panel representatives: a panel of unions focusing on outdoor workers; a second panel of unions; and, finally, a panel of medical organisations. Before I commence I would like to make some brief comments about the procedures for today's hearing. Like so many other things that we have needed to adapt in the face of the COVID-19 health event, the hearings for this inquiry will be conducted via videoconferencing. This enables the work of the Committee to continue without compromising the health and safety of members, witnesses and staff.

This being new territory for the upper House inquiries, I ask for everyone's patience and forbearance through any technical difficulties we may encounter today. If participants lose their internet connection and are disconnected from the virtual hearing, they are asked to rejoin the hearing by using the same link, as provided by the Committee secretary. Today's hearing is being broadcast live via the Parliament's website. A transcript of today's hearing will be placed on the Committee's website when it becomes available. All witnesses have a right to procedural fairness according to the procedural fairness resolution adopted by the House in 2018.

There may be some questions that a witness could only answer if they had more time or with certain documents to hand. In these circumstances, witnesses are advised that they can take a question on notice and provide an answer within 21 days. I remind everyone that Committee hearings are not intended to provide a forum for people to make adverse reflections about others under the protection of Parliamentary privilege. I therefore request that witnesses focus on the issues raised by the inquiry terms of reference and avoid naming individuals unnecessarily. Finally, I ask that everyone please mute their microphones when they are not speaking.

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MICHELE GOLDMAN, Chief Executive Officer, Asthma Australia, sworn and examined

CHERYLLEIGH PARTRIDGE, Person with lived experience, Asthma Australia, sworn and examined

The CHAIR: I now welcome our first witnesses. Ms Goldman, would you like to make a short opening statement?

Ms GOLDMAN: Thank you very much. Thank you for the opportunity to speak and represent the experience of people with asthma during the 2019-20 bushfire crisis. I introduce Cherylleigh Partridge to the Committee. Tragically, Cherylleigh lost her 19-year-old sister to an asthma attack when the smoke enveloped their town of Glen Innes. Cherylleigh shared with me that she never understood the dangers of smoke and is sharing her story and a call for action so that other families do not have to experience the same loss that they have tragically had to.

Cherylleigh has also had asthma for most of her life. Following a serious asthma attack about five years ago where she was rushed to hospital, she has been really diligent in managing her asthma. Despite this her asthma also flared up during the recent bushfires, so her lived experience will be important to the Committee today. The health impacts of smoke are largely invisible to the community. We know the number of fatalities due to the fires and sadly 33 people were reported to have lost their lives, but nowhere is the impact of exposure to smoke on morbidity and mortality recorded. Due to recent modelling we now have estimates that suggest that around 445 people died in the black summer bushfires due to smoke exposure, in addition to another 2,000 respiratory hospitalisations and 1,300 emergency department presentations for asthma.

Asthma Australia conducted a survey over six weeks in the December-January period and today we can share the experiences of the 12,000 people who responded. We know that for the 830,000 people with asthma in New South Wales bushfire smoke is particularly dangerous. Our survey revealed that the huge health impact of smoke meant that 94 per cent of people with asthma were experiencing asthma symptoms and were four times more likely to attend emergency departments during the fires. We also know from our survey that the smoke reached into other areas of people's lives; a quarter of people with asthma reported financial stress and one in ten reported a reduction in salary. The mental health impact was huge, too, with people experiencing new symptoms of anxiety and depression, and experiencing exacerbation of existing symptoms as they were stuck inside, afraid and unable to exercise or socialise. Anxiety is a very common trigger for asthma.

This is a complex issue and there is no silver bullet solution. Asthma Australia is calling for a comprehensive platform of policy reforms that is going to require a whole-of-government approach and collaboration between State and Federal governments. The good news is that we have seen how well this can work when we have been up against the crisis of COVID-19. Let us not wait for another bushfire crisis before we act.

The CHAIR: Thank you very much, Ms Goldman. That is a very concise and precise opening statement. Ms Partridge, would you like to make an opening statement yourself or would you just like to receive some questions from the members? Whatever suits you.

Ms PARTRIDGE: I am happy to receive questioning from the members this morning.

The CHAIR: Okay. On behalf of the Committee, we are very saddened to hear the news of the loss of a family member so tragically. I am sure your evidence that you will give shortly, over the course of the next half an hour or so, will be most valuable to us. Thank you for taking up a big challenge to come and, in a very heartfelt way, give personal evidence about a very difficult circumstance. Thank you for joining us today.

Ms PARTRIDGE: My pleasure. Thank you.

The CHAIR: I appreciate it very much. We will start now with questioning. To both our witnesses, we have members of the Committee from the Government, the Opposition and the crossbench. There is a good, broad representation of elected representatives here today on the Committee. Our normal way of proceeding is to share questions between them, to ask witnesses to comment on, elucidate or expand on certain things they may have said, and share the questions around. Is it okay if we do it that way?

Ms GOLDMAN: Absolutely.

Ms PARTRIDGE: Yes.

The CHAIR: Committee members, then—would someone like to get the questioning underway? Just identify yourself and identify who you would like to direct the question to. Would anyone like to start?

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The Hon. WALT SECORD: May I start?

The CHAIR: Yes. Please proceed.

The Hon. WALT SECORD: Ms Goldman, in your introduction you referred to modelling involving 445 people who you said died due to smoke exposure. Can you tell us a bit about that modelling and how you reached that figure?

Ms GOLDMAN: Yes. That was not modelling that we undertook. That was modelling that was published in *The Medical Journal of Australia*. I will double-check that with you—modelling that was led by Professor Fay Johnston. They looked at what exposure to smoke—what the health impacts were both in terms of mortality and also in terms of emergency care.

The Hon. WALT SECORD: In your submission you talk about the difficulties of measurement. Are there different levels of measurement and different systems in Australia?

Ms GOLDMAN: For small particulate pollution or for air quality in general?

The Hon. WALT SECORD: For air quality in general.

Ms GOLDMAN: There are differences between different jurisdictions in how air quality is measured, recorded and reported. One of the differences is in terms of whether it is hourly reporting or 24-hour averages. We have been focused on PM2.5, the small particulate pollution which is produced in high concentrations by bushfire smoke and which is breathed deep into the lungs and which can pass into the bloodstream. So it is a particular problem for respiratory disease and cardiovascular disease, and has been known to impact on cancers as well.

With PM2.5 we do acknowledge that the New South Wales Government improved its reporting over the course of the bushfires and moved from a 24-hour average to hourly. This is really important because when people are looking to the air quality data to understand what the quality of the air is to inform daily decisions—if I am reading data that suggests the air quality is reasonable but in fact it is actually hazardous and it just has not caught up with the averages, then I am going to go outside with a false sense of security and I will be caught unawares. The converse of that is true, too.

The other thing that we have recommended in our submission is an "air smart" campaign or a health promotion campaign. We need to improve the environmental health literacy of the Australian population. We can draw an analogy to the SunSmart campaign. In our early years we used to bask in the sun with no problems at all. As we learned of the dangers with cancers, we provided the community with a means to understand just how bad certain levels of UV were on any given day and to encourage them to take measures to protect themselves. We think similarly we need to take the same approach with smoke.

We are seeing the intensity and duration of fires increasing. We are now starting to understand the true health impacts of exposure to smoke and we need to ensure that the community both understand the potentially harmful impacts of exposures to smoke—which I think, from our survey, the community gets. The feelings of fear and anxiety were very strong. And we need to give them the tools to be able to understand what air quality is like at any given time on any given day in any given jurisdiction, and to have strategies that they can put in place to protect themselves.

Ms CATE FAEHRMANN: Thank you both for appearing today and for Asthma Australia's very excellent submission. I do want to ask you, Ms Partridge, about your experience and your sister's experience. I echo the Chair's words before of thanking you for coming on and telling this story. I remember the media covered this story of your sister to quite an extent, actually. It was heartbreaking to read at the time. But I wondered if you could tell the story of what happened to your sister, who I believe did pass away without anybody there in her home in Glen Innes as a result of the fire. The question I want to ask you after you tell that story is: Did she know what risk was posed as a result of bushfire smoke? But maybe if you just tell of that experience as much as you are able to and then some questions might arise from that.

Ms PARTRIDGE: Yes. Thank you, Ms Faehrmann. So my home-town community of Glen Innes had been battling with bushfires within a 100-kilometre radius since late September. In early November the closest fire front that came near our home was the Wyaliba fires, which actually claimed two lives, I believe, around 9 November. Those fires continued to burn, surrounding Glen Innes for close—they were in every direction. We had fires quite significantly for months.

In late November my sister was at home. She had spent the evening with my parents and she went to bed with no symptoms. She had lived with asthma since she was really small and she understood—we come from a

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family of asthmatics. So, she understood how to recognise her symptoms and to take her medication—her preventers—daily. She had never had a significant asthma attack that had led to hospitalisations or steroid medication. The evening she went to bed, she had no symptoms. She suffered what we have been told is a quite aggressive asthma attack. She was found in her bed with her phone torch on and her reliever medication quite close to her.

She did not have time to ask for help. I believe that she probably woke up mid-asthma attack. But as far as her understanding of the harmfulness of bushfire smoke—the communities out here do not have air quality monitoring the same way that metropolitan areas do. You can look outside and use common sense and go, "Wow, it's pretty smoky out there." But the understanding of what the levels are, and if they are hazardous, do not exist for regional New South Wales. The only reporting that came around about air quality, in a layman's terms way for 19-year-olds to understand, probably existed when the South Coast fires began and the Blue Mountains fires were covering Sydney CBD in smoke. That was when we began to hear that the air quality was hazardous and we need to stay inside. But for regional New South Wales that does not exist.

Ms CATE FAEHRMANN: Thank you. During the awful bushfires—which of course killed people directly—this is also a death caused directly by the bushfires as well. I am saying that not to sensationalise. That is the last thing I want to do. But the death count always comes from those impacted immediately, who are unfortunately caught by the fire front in those horrific circumstances. You would potentially say that this is a silent killer, if you like. In fact, the statistics that you pointed out, Ms Goldman, earlier on, indicate that this could potentially lead to more deaths than the actual fire front itself. Ms Goldman, do you feel like responding—Ms Partridge, if you do, that is fine—just to get the significance of that, based on the data and the statistics that are coming out?

Ms GOLDMAN: That is right. That is the point that we are trying to stress—that the health impacts of exposure to bushfire smoke have been largely invisible and are underestimated. And so, the modelling goes some way. This is one story but according to the modelling there are 444 other stories. There are a couple of other stories that came to our attention from either the media or from stories from paramedics, but we need to take the health impacts really seriously. We need to put in place whatever measures we can because the number is much larger than what is reported.

Ms CATE FAEHRMANN: So, P2 masks and a filter—what is your sister's name, Ms Partridge?

Ms PARTRIDGE: Her name is Courtney.

Ms CATE FAEHRMANN: Did she have access to any of that? Was there any communication about the potential increased severity and to take extra precautions?

Ms PARTRIDGE: No, not for regional New South Wales. We did not have access to those kinds of warnings or that kind of information. It was not until after my sister's passing—the South Coast fires took off after that period—when I began to see in the media that people were being recommended to wear P2 masks and to stay inside and to activate air filters if they had access to them. But that came after.

Ms CATE FAEHRMANN: Has that influenced any change in the community? I do not know how much the fire continued after Courtney's passing, but have there been discussions that your family has been involved with about seeing any change in that community, in terms of warnings about what you need to do on high PM2.5 days or high bushfire smoke days?

Ms PARTRIDGE: Not as yet. My family have continued conversations with Asthma Australia and the team there—with Michele—about how we can influence greater community awareness right across regional New South Wales. Glen Innes is only one small community that was impacted, but we know that a vast majority of New South Wales experienced this smoke. So, no, not as yet.

The CHAIR: Ms Goldman, in your opening statement you indicated that the way in which the government agencies were reporting particulate concentrations in the atmosphere improved over the course of the bushfire period, going from what I understood was a daily figure to a by-hour figure or a by-hour average. Could you please just explain that in a bit more detail, as you understand how that changed?

Ms GOLDMAN: Yes. So, it was not daily. It was still reported hourly but it was a 24-hour average, rather than an actual measure of the quality at that particular hour of time. What it meant was that you could read the number and know that that was the number for an hour ago, rather than an average of the counts for the last 24 hours.

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The CHAIR: What geographic area did that figure apply to? Obviously at any point in time there could be a scenario of multiple fires happening and multiple particulate matters.

Ms GOLDMAN: That is correct. The air quality index provides readings across a range of different pollutants for a range of different areas across New South Wales, but it is not exhaustive. One of the things we are calling for in our submission is to have monitoring in more regional and rural areas. As Cherylleigh has described, these communities are equally as impacted by fires—sometimes more so—than metropolitan areas. It is critical that people have data which gives them an indication of just how serious the air quality is at any point in time. That needs to be accompanied with the education which helps them understand what the different numbers mean and what actions they should take at different levels of air quality.

The CHAIR: We have the Government and government agencies coming on Friday afternoon to provide some further evidence to their submission. We can ask them this question. Did you know about the scope of the monitoring outside of the large population centres in New South Wales?

Ms GOLDMAN: Yes. We look at the air quality index and were monitoring the air quality index in New South Wales and in other jurisdictions very closely over the period of time.

The CHAIR: My question is the number of sites that are doing the monitoring—are you saying there is a limited number of sites outside the major population centres?

Ms GOLDMAN: Yes. There is a limited number of sites and they are not always operational at all times. We know there are some temporary monitors that are available. We think that is a great way to be able to provide more expansive monitoring in areas that are impacted by fires, because you can move those temporary monitors as needed, depending on where there is smoke and fires. What we are suggesting—and I leave it with the technical experts to develop the solution—is that more areas are monitored over the course of the fire season so we can provide this information to people.

The other point is that the information is currently accessible via the Government website, but we need to be able to push this information to people so it is easily accessible by their mobile phones. People are used to getting weather information, UV information and all kinds of information via their mobile devices. So, I think to make the information really useful and effective in helping people to reduce exposure and to reduce their health risk, it needs to be really accessible and provided in easy-to-understand formats.

The Hon. WES FANG: Thank you for appearing today. Ms Partridge, as my first opportunity to speak I also pass on my condolences to you and your family for the loss of your sister. My family have had asthma as an issue, particularly my sister and my late father, so I really have a sense of feeling for your loss. I just pass on my condolences and that of the Government as well.

Ms PARTRIDGE: Thank you.

The Hon. WES FANG: Ms Goldman, my question is actually directed to you. I have read your submission. I really appreciate that and I think it is very detailed, particularly at page 13 when you talk about the improving hazard reduction burning practices to minimise health impacts. I just wanted to drill down on that a little bit. Obviously the smoke that is generated from hazard reduction can create issues for those with respiratory illnesses when they are conducted. Have you done any work looking at, for example, fuel load, which is accumulating in areas, and the risk that increased fuel loads, increased non-management of large areas of burning in, say, national parks, would be contributing to the health impacts? Extending that forward, do you have an opinion on what we could be doing as land managers to minimise the amount of smoke generated by potentially clearing or allowing, say, grazing in national parks to reduce fuel loads on the ground?

Ms GOLDMAN: Thank you. I do note that there has been dialogue in relation to lots of different things around hazard reduction burns. It is a contentious issue in the media, including fuel loads. Asthma Australia does not have a specific position on that aspect of burning and preventing fires. It is beyond our technical expertise. But what I can say is that it is a complex issue and it needs to be balanced. One of the points we make in our submission around hazard reduction burns is we do not think the health impacts are considered in the planning and execution decisions as much as they should be. What this last bushfire crisis has shown us is just the extent and the scale of the health impacts, most of which, as I have said, are still quite invisible to us. We strongly advocate that in the planning the health impacts are a key variable.

It is one thing to reduce the risk of an uncontrollable fire, but that needs to be weighed up with the number of people who experience symptoms, who are required to present to emergency departments and who are missing time off work because they are ill with asthma. It all needs to be weighed together. The other point I would make is that we need to bring together all the important perspectives to come up with a solution. That includes looking

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to our First Nation people who have been managing the land for many thousands of years. We believe there are things to learn from them as well. Different areas will require different solutions. I do think the best hope for a good solution going forward is to have bright members of the community and their different perspectives come together and work out what is the right approach for that particular area at any point in time.

The Hon. WES FANG: Do you think it is potentially something that Asthma Australia should be looking to conduct some work into—setting aside all the different ideologies around what occurred—whether delaying hazard reduction burns, and allowing that fuel load to increase, would potentially create a greater issue into the future when we have bushfires that occur? Is that something your organisation might be looking to conduct some research on or some collaborative consultation on with other partners? How would you go about the process if you were to do so?

Ms GOLDMAN: We have certainly done and funded some research before the bushfire crisis, which endeavoured to give us a better understanding of the health impacts of hazard reduction burns and activities. One of the findings from the research we supported was that actually the health impacts from exposure to wildfires are greater than the health impacts from exposure to urban sources of pollution. We are always interested in supporting research which is directly related towards informing strategies that can help improve the health of the one in nine people with asthma, and the broader community, who are subjected to pollution. I think we see our role as connectors and facilitators, so absolutely to bring together different parties and to facilitate discussions. We would see that within our remit. But we are not technical experts ourselves and we are not a huge organisation. We have a staff of around 50 people, so we really have to focus on prioritising where we focus our efforts for the greatest impact.

The Hon. WES FANG: Thank you very much.

The Hon. NATASHA MACLAREN-JONES: My question follows on from what was raised by the Chair and also by Walt Secord in relation to the air quality index [AQI]. I am interested to know, and obviously we went to the one-hour recording during the bushfire, whether or not you see that there is a threshold to when that hourly reporting would activate? I am not across all the technical details, and these are things that obviously can be asked of the department when they come on Friday around how realistic it is to do that, but do you see that there is a threshold, or is it something that should just operate at all times in an ideal world?

Ms GOLDMAN: It is still operating, so the data was there. It was one of the things that we called for during the bushfires, that those jurisdictions that were not yet reporting hourly data did so, because the data is there to calculate the 24-hour average, so you might as well share the hourly data. It is more useful. That has continued. We think the next step is in making it more accessible in easier to understand formats. So if you look at the AQI, it has all the different pollutants and all the different places where there are monitors. There are colour codes which help the everyday person to navigate their way through it and then there is a separate table which suggests, "at this level these are the activities that you should or should not do". But we think that there needs to be a whole other layer added onto it.

It needs to be more accessible via mobile phones and we need to create thresholds in terms of, "at this level of air quality these are the actions that need to occur". At the moment there are loose statements like, "vulnerable people should not undertake vigorous activities." We think that there is another level of detail that needs to be added there. We are not starting with a blank sheet. There are some existing apps that already exist. AirRater is one which is not available in all jurisdictions yet, but the distribution of that was extended during the bush crisis because the community was demanding tools like this to provide them easy-to-understand, easy-to-assimilate information. We think investment in expanding the use of an app like AirRater could be enormously beneficial to the community.

There is also a research tool that underpins it, so people who use the AirRater app can volunteer to record their symptoms or when they attend hospital. It also provides an opportunity to create a really important mega dataset to help us better understand the impacts of different environmental triggers on health. We would suggest that pollen is another thing that is included in that app, so you have a one-stop shop for all the environmental triggers that impact on your health. Over time what AirRater is trying to do is develop an algorithm so it learns when you have symptoms and it can correlate, "at this level of air quality, you are going to experience symptoms." It can then be proactive in giving you messages like "avoid going outside today" or "avoid exercising today". We think that is the way forward. The bushfire crisis should accelerate investment in really useful research and health education information tools like this.

The Hon. NATASHA MACLAREN-JONES: The other question I had was in relation to your second recommendation regarding a national framework for air quality. I understand that there is the National

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Environment Protection (Ambient Air Quality) Measure, so I am interested to find out what you would specifically like to see addressed at a national level, and coming out of this inquiry?

Ms GOLDMAN: We would like all the national environment Ministers to participate in a council together and to have the remit to make changes to the National Environment Protection Measures [NEPM] to improve the way that we monitor and report different measures and to revisit what the standards are. I cannot remember offhand exactly what the standard is set at for PM2.5, above which it is considered an exceedance, but there is no safe level of exposure to small particulate pollution. We think it is time, especially given the crisis, that the standards be revisited, the standard at which you would assess whether or not there is exceedance and the actions to enforce where there are exceedances.

Whilst we have been talking about uncontrolled fires, there are also a lot of planned burn activities—not just hazard reduction burning, but industrial waste burning activities—which create high levels of these pollutants for different communities. We would like to see the environment protection authorities in all jurisdictions take a more uniform approach and enforce action when there is exceedances so we can be more proactive in protecting the quality of our air.

The CHAIR: I have a follow-up question from Ms Natasha Maclaren-Jones. With AirRater, is that available to be downloaded and used by people now in New South Wales, or is this something that was available for a short period and now is not available? Do you know the details?

Ms GOLDMAN: Yes, I have downloaded it on my phone. I was using it on my phone when I wanted to know what the air quality was like where my daughters play their soccer, whether it was safe for them to indeed to be outdoors playing soccer, or what it was like closer to my home. You can download it on your phone now. We do need greater investment to ensure that we have the monitors in all the right places to provide extensive coverage across Australia.

The CHAIR: I direct a question to Ms Partridge on this matter of you, your sister and your family's circumstance of suffering asthma. Was there the use of technology before the tragic loss of your sister, to access information to inform yourself about, on a given day, what it was going to be like in terms of particulate matter? Just forget the issue of the bushfire itself, which was the tragedy, but prior to that was there a practice in the family to access information? If there was, how did you do that, and are there any learnings from this that we might be able to take away?

Ms PARTRIDGE: For myself and my family, what I will say is that we did not actually know that this technology was available until after I had connected with Asthma Australia and one of the girls on the team pointed me in that direction. I think it is fair to say for the general public it takes something incredibly significant for you to look for the information yourself to access it. For us, we did not know this technology existed. I will say that I have downloaded that app personally. Where I am currently living there is no information available. It is there, it does exist, but it is not always helpful for the entire population.

The CHAIR: What you are saying, if I am correct, is that there is quite a lack of understanding in the asthma community and perhaps more broadly of the ability to download an app or access other information to help make informed decisions about what you are going to do on a given day in terms of monitoring the general air quality. Secondly, there is the issue anyway of perhaps there not being sufficient monitors in place across the State to be able to create the information which could be used to inform people who suffer asthma and other conditions.

Ms PARTRIDGE: Yes, I agree. There are just not enough monitoring stations throughout New South Wales.

The Hon. EMMA HURST: Ms Goldman, you mentioned in your introduction a little bit about anxiety and depression and how that is also linked to actually bringing on asthma. Can you give us a little bit more information about that? You mentioned that anxiety is growing around COVID-19, but if there are going to be bushfires in the area and there are risks associated with that, how can we incorporate information about depression and anxiety in the provision of healthcare information?

Ms GOLDMAN: Yes. Anxiety is a common trigger for asthma. It is a vicious cycle, because when you start to get breathless you naturally get anxious as well, so that further exacerbates symptoms. People with asthma are twice as likely to have anxiety and depression than the rest of the population. We try in all of our health and information services to take a holistic approach, to also cover mental health and wellbeing, to provide people with strategies and to direct them to those organisations who are better placed than ourselves to provide useful

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strategies, resources and support. I think one of the points I would like to stress, which we make in our recommendations, is an air smart campaign which also just picks up on the point that Ms Partridge made.

It is one thing to provide people with [inaudible] information, but people will only use things if they understand, one, that there is a serious issue, two, that they are personally at risk or will be affected and, three, that by taking certain steps they are going to reduce their own risk. I think the air smart campaign is something which needs to have access to greater air quality monitoring and reporting, but which is much broader than that and can educate people on the risks of exposure to smoke. People are really smart, and what we have learned over many years is that we can successfully influence positive behaviours around health if people understand what the impact of different things [inaudible] on, in this case, their airways and the role that different strategies play in helping to keep them healthy.

I just wanted to stress that because I think a comprehensive campaign which does that, which provides people with the right tools, but also educates them so they understand the risks and what they can do to minimise those risks, is really essential. That can incorporate strategies to improve mental health and wellbeing.

The Hon. TAYLOR MARTIN: I just have a quick question for Ms Goldman. Before I do, I thank Ms Partridge for her time and involvement in this Committee to ensure that what happened to her family and her sister surely is not repeated again to anyone else in the future. Ms Goldman, recommendation number six outlines that you would like to see the New South Wales Government provide support to people with asthma towards the costs associated with using air purifiers with a high-efficiency particulate air [HEPA] filter to avoid asthma flare-ups. Does this occur in any other jurisdiction that you know of, whether it is in Australia or elsewhere around the world? I have several HEPA filters going to lessen my own symptoms to allergic bronchopulmonary aspergillosis. It is a really good idea. I am wondering if there is a program anywhere else currently.

Ms GOLDMAN: I am not aware of it existing in any parts of Australia. It was something that came out very strongly in our survey. There were a portion of people who said that they did not have the means to protect themselves either by running air-conditioning for extensive periods of time—the costs of energy was too high—or to be able to purchase and run an air purifier was something beyond their means. That is something we feel really strongly about, because breathing is a human right and we do not think that only some elements of our community should have the right to cleaner air because they have the financial means. We were looking at the different schemes that exist which do provide subsidies for medical equipment.

People with asthma are not currently included on that list, nor are air purifiers part of the equipment that is listed, but we thought that that might be one mechanic which would enable people who cannot afford air purifiers to be able to access them during fires.

The Hon. TAYLOR MARTIN: Do you have any kind of idea of what threshold might be used for such a scheme, whether it is just being prescribed a ventilator or [inaudible]?

Ms GOLDMAN: It would be something that we would need to work with more [inaudible] with experts and, yes, obviously use an evidence base to help support that.

The CHAIR: We have just gone slightly over, but it has been a very, very useful commencement to our hearing to have two excellent witnesses give us some very detailed information from the broad perspective of the organisation, Asthma Australia, but also a personal example that Ms Partridge has been able to provide. Thank you both very much for participating today in this hearing. We may have some supplementary questions that arise from looking at *Hansard* that we would like to send out to you to provide some answer to. Our secretariat will liaise with you. There is a turnaround of about 21 days to do that. Would that be okay if we have some supplementary questions?

Ms GOLDMAN: Absolutely.

(The witnesses withdrew.)

(Short adjournment)

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ALISTAIR SAGE, Senior Legal Officer, Australian Workers Union, NSW Branch, affirmed and examined

GARTH TONER, Organiser, South East Region, Australian Workers Union, NSW Branch, affirmed and examined

NATALIE LANG, Branch Secretary, Australian Services Union NSW & ACT, affirmed and examined

JAKE FIELD, National Safety and Training Officer, Maritime Union of Australia Division, Construction Forestry Maritime Mining and Energy Union, affirmed and examined

NATALIE WASLEY, Delegate, Maritime Union of Australia, affirmed and examined

The CHAIR: Thank you all for making yourselves available to provide some evidence to our inquiry today. It is much appreciated. This is a panel of trade union representatives, in large part representing people who work outside. All have provided a submission to the inquiry. It will be very useful now to be able to ask questions and have you elucidate some of the points that you have made in your submissions. As I indicated, the organisations have made submissions. Just going through them to clarify, the Australian Workers' Union's submission to this inquiry is No. 28. With respect to the Australian Services Union NSW & ACT Branch, your submission is No. 40 to this inquiry. The Maritime Union of Australia's submission is No. 42. All those submissions have been received and adopted as submissions to the inquiry. I will provide each of you with an opportunity to make an opening statement, which means there is no need to go through in depth what you have covered in your submission; that can be taken as read.

Make an opening statement and keep it relatively short, and then we will open it up for questions from Committee members, if that is agreeable. We will start with Mr Sage. You do not have to make an opening statement, but it is there for you to do if you wish to set the scene. Mr Sage, do you have an opening statement you would like to make?

Mr SAGE: Yes, thank you. The Australian Workers' Union [AWU] thanks the Committee for the opportunity to appear today in relation to this very important inquiry. Of course, in more recent months all areas of society—including the trade union movement, work health and safety [WHS] regulators and the Government—have been focused on the pandemic, but we must not forget that only a few months before that we faced the ravages of a catastrophic bushfire season. It is vital now, in the union's view, that we not sideline the urgent reforms needed as a result of that earlier crisis. The AWU represents over 20,000 workers in New South Wales and we have two parallel interests in this inquiry.

Firstly, as indicated by the Chair before, we represent workers in a number of outdoor industries, including civil construction, horticulture and quarrying and mining. Secondly, we also represent firefighting forces in the National Parks and Wildlife Service and State forests employed by the Crown. Those workers face and faced unique risks on the front lines protecting life and property. My colleague Mr Toner perhaps will speak more on that as a former firefighter now employed by the union as an official. We have made recommendations in our submission that broadly fall into three categories. Firstly, there is a knowledge gap. We recommended that there be targeted and immediate funding by the State Government to help us understand the health impacts of exposure to bushfire smoke in more detail. We have taken that recommendation from the experts themselves.

Secondly, there are some inadequacies in the current WHS framework dealing with poor air quality in workplaces. That is recommendations 2 and 4 of our submissions—perhaps most importantly, a recommendation that there urgently be a code of practice for outdoor work in the context of bushfire smoke issued by the regulator before the next fire season. The final category is recommendations specifically looking at issues facing our firefighters in our national parks and State forests—in particular, discrepancies in the personal protective equipment [PPE] and health monitoring for them, as opposed to other firefighters in the service of the State Government. The only other thing I wish to add is that we did attach four annexures to our submission, which we draw to the Committee's attention as well.

The CHAIR: Thank you, Mr Sage. That is very good. That is a very precise and very clear opening statement. Mr Toner, did you want to add to the comments of Mr Sage or wait for the questions?

Mr TONER: Thank you for the opportunity, but I will leave my opening statement addressed by Mr Sage and I will wait for questioning. Thank you.

The CHAIR: Thank you, Mr Toner. Ms Lang?

CORRECTED

Ms LANG: Thank you, Chair. The Australian Services Union represents workers in the airlines, shipping, travel, information technology, transport, social, community and disability services industries and the water industry. We have made a submission with a particular focus on the health impacts of exposure to poor levels of air quality on our members who work in the outdoor functions of the water utilities, such as Sydney Water. Sydney Water civil maintenance workers perform essential functions in the upkeep of Sydney Water's supply, including the urgent repair of water mains and pipes to ensure that water is available to households, businesses, schools, health services and, notably, to firefighters fighting bushfires. The supply of safe and reliable water to the people of Greater Sydney, the Illawarra and the Blue Mountains is essential for life.

Consequently, whilst non-essential work can be and was rescheduled, it is often unrealistic to reschedule all of the work until air quality improves or is less hazardous, especially when we consider the extended periods of very poor and hazardous air quality that we experienced during the summer of 2019 and 2020. Where urgent work continued, the union advocated for appropriate personal protective equipment, including P2 masks—an issue that, largely, employers agreed with the necessity of. However, there was a shortage of these masks and difficulties getting them to the essential workers on the front line, which clearly demonstrates a need for greater planning to ensure that this does not happen again. Outdoor water workers continued to perform their essential work through the 2019-20 bushfire season.

From this experience it is clear that we need greater regulation, information, short- and long-term health monitoring and personal protective equipment to minimise and respond to the associated short- and long-term health risks. It is likely that as our bushfire seasons lengthen, we will see more periods of very poor and hazardous air quality into the future. We must learn from the experience of this most recent bushfire season to ensure that all workers are safe and protected from these hazards into the future. I thank the Committee for considering our written submission and the inquiry for providing us this opportunity to raise these concerns and recommendations on behalf of our members.

The CHAIR: Thank you, Ms Lang. That was very clear and precise. Mr Field, would you like to make an opening statement?

Mr FIELD: Good morning. Thank you for the opportunity to provide some evidence here today. The experience of our members tells us that for outdoor workers engaged in strenuous work, the very obvious negative health effects presented once PM2.5 levels reached 25 micrograms per cubic metre and beyond. When those levels reached "very poor" on the New South Wales Air Quality Index at the time, with PM2.5 levels at or above 37.5 micrograms per cubic metre and PM10 levels above 75 micrograms per cubic metre, workers should not have been required to perform strenuous outdoor work. We note that there is no safe minimum level of exposure and we have included items to that effect that support that in our detailed summary to the inquiry. The new New South Wales interim hourly standard for PM2.5 is now sitting at 62.1 micrograms per cubic metre. For PM10, it is now at 80.1 micrograms per cubic metre.

We believe they are set far too high and they must be immediately reduced. This new standard almost doubles the Australian standard for PM2.5 of 25 micrograms per cubic metre. During the period from 30 October 2019 to the present, there was and still is a general unwillingness by employers to apply higher-level risk controls, which would have included rescheduling work to times when the air quality was better. Workers, particularly in our industry and across others, have had to risk their livelihoods on a number of occasions to reduce the impact of bushfire smoke on their health in the absence of any employer or regulator support. SafeWork NSW needs to develop much more detailed guidance for workplaces on how to apply the hierarchy of controls for air pollution, and employers must be directed to cease outdoor work and reschedule to times of better air quality.

The immediate and long-term quality of workers' health from the effects of this dreadful smoke need to be monitored and given precedence in the application of any controls. Although the periods of poor air quality across New South Wales ports were spread from 30 October to 3 January 2020, hazardous air quality tended to only occur in short periods of about four to six hours. Many maritime workers are on shift across a 24-hour spread, so those work times could have been shifted to the evening or night or on better air quality days. In terms of mitigation this would have been relatively easy for employers to engage with workers and find simple workarounds, but there is a real absence of guidance and enforceability by the regulator, which was exploited by employers to the detriment of workers' health.

We think the New South Wales Government must take urgent action to reduce greenhouse gas emissions sufficiently so as to ensure that global heating does not exceed 1.5 degrees Celsius, as global heating has been a key driver of recent drought, bushfires and poor air quality. In summation, if the bushfire and air quality crisis has taught us one thing, it is that workers must be considered an at-risk group. They simply do not have the freedom to follow health advice and reduce their own exposure unless their employer agrees. As we are approaching

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another bushfire season—hot and dry, as always—the agreement of employers, who have an overwhelming conflict of interest when it comes to continuity and productivity, cannot be the determining factor whether workers are exposed to hazardous air or not. Again, our detailed submission supports that opening statement. I thank you again for the opportunity to provide that here today.

The CHAIR: Thank you very much, Mr Field. That is very clear. Finally, Ms Wasley, would you like to make an opening statement?

Ms WASLEY: Yes. Thank you, Chair, and thank you to the Committee for the opportunity to appear. I was asked to appear to supplement Mr Field's evidence as a worker who was actually on shift during a number of those extremely hazardous days. I am happy to wait for the questioning but I just wanted to mention there was a significant number of physical as well as mental health impacts on myself and my fellow workmates across the industry and, obviously, a very steep learning curve for everybody at the time in terms of how to monitor, how to understand the air quality, how to use the PPE and the limitations of that and the experience of that. I am happy to answer questions related to that.

The CHAIR: That is excellent. Thank you very much. It will be great to hear that perspective. We will get things underway, then. We have Committee members from the Government, the Opposition and the crossbench. What we normally do is share questions around between ourselves and then get those persons asking the questions to identify who they are directing the question to so it is clear who will be receiving questions. Would someone like to get things underway? The Hon. Walt Secord, then Ms Cate Faehrmann.

The Hon. WALT SECORD: Thank you, everyone, for your submissions and your time. Ms Lang of the Australian Services Union [ASU], you mentioned that there were cases involving Sydney Water workers who did not have PPE. What did they resort to and what occurred when they were required to carry out repairs during dangerous air quality levels?

Ms LANG: Thank you for the question. We were able to have the non-urgent work rescheduled. But the urgent work, which is classed as category 5 or category 6 in the Sydney Water system, has a very significant impact on the community. This is when it would essentially disrupt or stop water supply or have a very significant environmental impact, so it cannot be rescheduled and it has to be responded to. Whilst we did advocate very early on for the need for the P2 masks to be made available, as that was the official health advice to be the appropriate PPE to be able to filter out those particles, Sydney Water placed an order for the P2 masks but it was really slow in being able to receive that order because of the general shortage that we were seeing in the community.

Instead, a number of the workers who were performing those critical functions were advised to wear just simply the dust masks that they ordinarily would have on hand for when they were working in a dust-filled environment. Yes, that was a very significant concern to us. Whilst we did work with members to make sure that members who had particular adverse health themselves were able to be deployed to other work and not have to respond to those situations, it was still a very significant concern for us that we would not have a State-owned corporation providing an essential function on behalf of the New South Wales Government to provide water supply, which is essential for life, to schools, childcare facilities, aged care facilities, health services and, indeed, to support the firefighting effort—that that would not be prioritised to have that essential personal protective equipment of the P2 masks fast-tracked to the front line.

The Hon. WALT SECORD: Did the masks eventually arrive? When did they arrive?

Ms LANG: For a lot of workers they did not arrive until the end of the bushfire season.

The Hon. WALT SECORD: I would like to ask a quick question to Mr Sage of the ASU.

The CHAIR: AWU.

The Hon. WALT SECORD: Sorry, AWU. What advice or guidance do you provide to workers who, in fact, are required to work during periods of poor air quality?

Mr SAGE: The advice the union would provide is that the work should only be continuing if it is safe to do so, consistent with the work health and safety legislation, and that the employer or the person with control of the business or undertaking is required to provide sufficient PPE and follow the hierarchy of controls to ensure that the workplace is as safe as possible. If effective controls cannot be put in place and the air quality is at a dangerous level, then work should cease.

The Hon. WALT SECORD: In your submission, you talk about work underway in California involving WHS. What is happening in California and are there learnings for us here?

CORRECTED

Mr SAGE: In California, because they also had a very serious bushfire or wildfire season recently, there was an emergency regulation issued by the regulator in California to place specific rules in effect for all workplaces, except for those in enclosed buildings with effective air filtration. What we have done is attach a copy of that regulation. Basically, there were some clear, enforceable rules which employers had to follow. The employer was required to monitor PM2.5 levels before shifts commenced and periodically thereafter by reference to the government monitoring data for the region. The employer was required to inform employees of the PM2.5 levels in the worksite and the protective measures that are in place to protect their health.

The regulation requires the employer to encourage employees to speak up if they have concerns about worsening health quality and any health issues—in particular, for vulnerable workers who have asthma and other conditions. Then, particularly importantly, it places clear requirements on when respirator masks are required to be provided and basically says at certain levels respirators must be provided if work is to continue and if you do not have respirators, work cannot continue. In those respects that regulation, which has been adopted on an emergency basis in California, is much more structured than what we have here. You could see that in a time of an emergency, it is going to be hard to implement those things in particular workplaces when there are clearly competing factors at play, especially where it is affecting an entire city. So there is a very serious economic question. It is difficult to see individual worksites taking those measures across the board without clear rules.

The Hon. WALT SECORD: Did you have instances or occasions where workers refused to work because of air quality and they were within their rights to do so?

Mr SAGE: I think our experience at the time was largely that workers continued working even if it was unsafe. We did have some occasions on some construction sites where workers did cease working, and I think we have referred to those at paragraph 38. So we did have a situation where workers did cease working on a construction site and went into their crib rooms, which were ventilated. But, unfortunately, there was not enough room in the crib rooms for the entire workforce so eventually, with my involvement, work was ceased at that worksite at that period of time.

The CHAIR: Mr Toner, I note that you are an organiser from the south-east region of New South Wales, which, as we know, was very badly affected by bushfires over Christmas and New Year period and into January. Is there anything that you would like to add to the comments of Mr Sage in terms of experiences on the ground of workers being exposed to levels of pollutants?

Mr TONER: Yes, absolutely. My evidence is more from a practical nature of 32 years being a firefighter and representing an array of industries within the CFS to New South Wales rather than the scientific side of it. I would like to open up that the PPE is the last form of defence and should never be seen as the primary form of defence for an individual. It is an important factor, but we have an opportunity to engineer and administrate some safety into our workplace that we should not lose sight of in the primary. Apart from that, there are many many actions. I will come from the point of view of firefighting. You cannot get out of toxic heavy smoke when you doing that work. The best you can hope for is a rotation in duties that will give you some relief during that operational phase. We called that, back in the day, the "smoky side of the fire" or the "happy side of the fire" depending on which way the wind was drifting or blowing and which side of the fire was toxic or non-toxic.

In that environment no PPE that we currently have, except for contained breathing apparatus, will keep an individual out of that toxicity. A mask or a wet cloth around the face gets you by. Quite often you see people getting down low on the ground to get some clear air so they can keep working. The second issue we have is also fatigue and heat stress management. The more layers of clothing you put on the surface of the skin of course the hotter the individual gets and that can add to a level of risk that will outweigh a potential risk of the inundation of smoke over a period of years. Someone could fall over on the fire line with heat. It becomes a lower priority to the people doing the work. In strenuous activity it is extremely important that people do have the right equipment, but quite often remove the equipment due to heat and heat stress situations. The best thing we were ever able to do was to introduce air conditioned vehicles to the fire line so we could have a controlled environment. With that, with cutbacks in Government funding and the like, a lot of those types of maintenance issues—

The Hon. WES FANG: Point of order: We have already addressed this, there are no cutbacks in Government funding. I ask you to address that point.

CHAIR: The witness is providing an explanation as he understands it. You may disagree, but he is entitled to express that position that he believes is correct.

The Hon. WES FANG: I understand that. I might believe in [inaudible] but that does not necessarily make that correct either. We have been through this in the Parliament. We know there is no cutback in Government funding and I ask you—

CORRECTED

CHAIR: That is not a point of order, as I think you appreciate, it is a debating point. I ask the witness to continue his evidence.

Mr TONER: I can reframe it. The prioritising of the funding, it probably is the end of maintenance of equipment effectively, and therefore little things like vehicle filters in cabins and things like that get overlooked in fire season. They are not always effectively maintained to work at best capacity. I am sorry to say, but I speak with 32 years of experience. All in all, from that side of my experience through to industries working within close proximity of active fire fronts and the issues that those workers were presented I think there is a hierarchy of control from the direct impacts through to people that may be not as directly impacted that could be addressed through, I believe, better mechanisms of engineering and administrative controls and not just to be relying on the PPE as the fix-all. That is about it. Thank you.

Ms CATE FAEHRMANN: Thank you all for appearing before the inquiry and for all your submissions. In the submission by the AW, Mr Sage, you suggest that the union has been requesting the provision of P2 masks from the government for National Parks and Forestry workers, is that correct? What has the Government response, if any, been to that? It is a general question to everyone given the impact of the bushfire smoke and we are still not out of the woods, so to speak, and we will have next year's bushfire season and we will have another bad one sooner rather than later. Have there been approaches by NSW Health or SafeWork to discuss with you the impact of bushfire smoke on your outdoor workers? If so, could you talk about what that is? We have them appearing on Friday. Mr Sage?

Mr SAGE: In our submission we noted that AW, on behalf of its members, National Parks and Wildlife Service has made requests on a number of occasions for a review of the provision of masks. My understanding is that is an ongoing request. We are still yet to be satisfied there have been any appropriate changes. For the reasons given in the submission: Our members have advised on a number of occasions that they were fighting very dangerous fires side-by-side with other firefighters employed by the government but far less well equipped in terms of they might have P2 masks and the Fire and Rescue firefighters have P3 respirators. And even more serious issues when they were fighting structural fires side-by-side both in terms of lack of equipment and lack of training for those kinds of fires. The second part of the question. We certainly would be seeking to work with SafeWork on a code of practice and other reforms as urgently as we can to try to get some more clear guidance out before the next bushfire season. We would certainly welcome that opportunity. Mr Toner might have more on the parks service.

Mr TONER: That pretty well sums it up. There are different funding models between different organisations which allow different organisations to have better equipment than others. If you went from say a combat agency such as Fire and Rescue and the Rural Fire Service of NSW they are far better equipped in relation to PPE than say the Forest Corp or National Parks and Wildlife Service, but we operate side-by-side.

Ms CATE FAEHRMANN: I did want to ask about the situation with the Government responding to the call to provide more frequent air quality by implementing that interim standard. A number of you mentioned in your submissions that it was higher than the previously hazardous air quality standard. Mr Field, it was in the Maritime Union of Australia submission, specifically. You said workers were "shocked and dismayed" that the New South Wales Government had done this. Could you expand on that? Do you have the background as to how the Government came to this? Or, did it just come out suddenly and you were notified of it somehow?

Mr FIELD: In terms of how the Government came out with it, I would not hazard to remark on that.

CHAIR: You can take it on notice.

Mr FIELD: I will take that on notice.

Ms CATE FAEHRMANN: We also have them here on Friday, so do not spoiler over it.

Mr FIELD: No worries. In terms of that statement in our submission, in the absence of any real ability to identify to our members and workers an up to date example of air quality we had to source that data from various means. At the same time employers were also attempting to seek that data from their own means. There were a whole host of shiny apps available that used US air quality indices and applied that to New South Wales information. We used the AirRater app, which was developed and operated by the uni of Tasmania and from that we were able to use New South Wales air quality index. At the time we were using it for this purpose. Prior to the standards being raised we were able to use that 25 microgram per cubic metre Australia exposure standard in the PM10 50 micrograms and apply that to the New South Wales air quality index in terms of what their index values inferred.

CORRECTED

At poor New South Wales air quality index had a poor numerical rating of 100 to 149, which is using the PM2.5 25 micrograms per cubic metre equation. There was some mathematics buried in the back end of the NSW Health website. We were able to perform a calculation that basically gave us a figure that related to PM2.5 for the indicator of poor: between 25 micrograms per cubic metre and 37.25 micrograms per cubic metre. At that 25 micrograms per cubic metre of PM2.5 I am referring to here specifically is where we started to get the increased first aid reports and the increased prevalence of symptoms—the runny nose, the watery eyes, the difficulty breathing, and the fatigue. And using that New South Wales air quality index we were able to develop—it may be attached to our submission—a table that we were then able to furnish our members with in terms of being able to identify, when they looked at the AirRater app, they could then interpret the figures that they were seeing for PM2.5 and PM10 on that app using the New South Wales air quality index.

I might add, at the time the advice was for the general public and the wording and language that was used by NSW Health in terms of what action should people take at those different air quality measures was, we believed, quite robust. We then adapted that in terms of the Work Health and Safety obligations under the New South Wales legislation to be able to put in place controls in line with those air quality guidelines and indicators using the AirRater app information gained from the New South Wales monitoring stations to provide information to workers and what they should do to mitigate their exposure during those increased times of poor air quality.

Ms CATE FAEHRMANN: Can I ask for Ms Wasley to comment from her experience as a worker?

CHAIR: I was going to as Ms Wasley to give some practical on the ground insight into the issues.

The Hon. WES FANG: I am happy for you to do that. I was going to ask which of the unions had written before the 2019-20 bushfire season to the relevant authorities and if they had not, why not? I am happy to take the question that you and Ms Cate Faehrmann are presenting.

Ms CATE FAEHRMANN: Just as Mr Field spoke of the advice provided by the Government and the situation of workers trying to find their own advice, firstly, I am interested on the impacts on workers and then the difference potentially that knowing about the 37.5 micrograms of the New South Wales air quality index. Is that PM2.5? The difference that may have made, whether you and your colleagues saw a difference there as a result of that certainty?

Ms WASLEY: Even at the lower levels of poor air quality, so poor or very poor, people definitely reported headaches, fatigue, eye irritation, things that Mr Field mentioned before. There was a noted difference between when the levels of PM10 were elevated because they were much more visible and had a more immediate impact, for example, on breathing. We do quite physical work and so you notice quite rapidly the impact of that physical PM10. We saw from monitoring the apps that quite often that was followed by the PM2.5. Even though visibly it looked as if the smoke had cleared somewhat the more dangerous smaller particulate matter had actually come in afterwards. So people were being asked by their employers to then go back out on the job or increase the length of their rotations because it looked like the air was at a better quality whereas the more dangerous particulate matter had come in.

The problem with the PPE in that situation is because it is a very high risk that we are working in we rely a lot on radio communications between our teams and you simply cannot speak through a rubber mask or a canister mask on a radio. People were removing their masks periodically or leaving them off for the period of that rotation, which was increasing their exposure. A lot of the levels are looking at exposure over an hourly period, we are on eight to 12-hour shifts. So, I think if we are looking at standards of regulations we really need to think about outdoor workers and the length of time they are actually out there in that environment. The physical impacts are very real. We had a number of people bringing their children's asthma pumpers to work, for example, and trying to use those. We had issues with being asked to use machinery that may have air conditioning but did not have proper seals or did not have the appropriate filters to filter out that appropriate particulate matter.

I think there needs to be a lot of education done across society that people understand that even if you are in a machine that you may not be safe. Even if you have a mask you may not be able to wear it for the duration or in a way that is appropriate for that period. The last point I want to mention is that it raised quite a lot of anxiety amongst workers, firstly, because people were forced to self-identify and say that they felt that they were more vulnerable and at risk and that isolated them within the workforce if they did not want to undertake a particular duty other people felt like they had to cover for them. Also, coming into this COVID season we know that people with respiratory illnesses are more susceptible after exposure to particulate matter. I think it is very important that people understand the real health impacts and how that can relate to pandemics and respiratory illnesses as well.

The Hon. WALT SECORD: Since COVID has there been an improved ability to access PPE?

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The Hon. WES FANG: Point of order: That question is outside the terms of reference.

The Hon. WALT SECORD: It relates to something said earlier and I am following it up. They were talking about the difficulty of them arriving and I wanted to know if it had improved since the fires.

The Hon. WES FANG: You actually referred to "COVID", which is delving into issues outside of the terms of reference.

CHAIR: If I understand correctly we are talking about the question concerning the relative availability of PPE late last year and early this year. Just forget about saying the word "COVID". The question of the relative availability of PPE now in June 2020. That is the framing of the question essentially and it is a perfectly reasonable question.

The Hon. WALT SECORD: Thank you, Chair.

Ms LANG: I guess, from our experience, there are two issues: One is around the availability of PPE, which we certainly saw was incredible difficulty during the particularly heightened risk levels of the bushfire smoke. The other issue continues to remain unresolved. Whilst we did see for those Sydney Water workers that PPE eventually making its way through, however at the tail end of the hazard as opposed to when we really needed it. The other issue was the fitting and training in the use of PPE. If workers are not trained appropriately and the PPE is not properly fitted then it does not have the efficacy that we require to keep workers safe. There is definitely still very much an outstanding issue around the availability of that training and that information and that regulation.

Mr TONER: The AW back Ms Lang's evidence 100 per cent. The PPE did eventually become available but the training is definitely lacking and the appropriateness of the PPE, whether it is up to standard or not is another question. We back her 100 per cent there.

CHAIR: It has been very informative to have you here and be able to drill down into your submissions. There may be questions on notice flowing from *Hansard*. There is a turnaround time of 21 days to provide answers to those question on notice. That will be incorporated into the evidence for the Committee.

(The witnesses withdrew.)

(Short adjournment)

CORRECTED

NATASHA FLORES, Industrial Officer, Unions NSW, affirmed and examined

SHAY DEGUARA, Manager, Public Service Association of NSW, affirmed and examined

CLAIRE PULLEN, Project Officer, Public Service Association of NSW, affirmed and examined

AMBER FLOHM, Senior Vice President, NSW Teachers Federation, affirmed and examined

KELLY MARKS, Research/Industrial Officer and Climate Emergency Coordinator, NSW Teachers Federation, affirmed and examined

The Hon. WES FANG: May I ask Ms Marks which role she is here representing—Industrial Officer and Climate Emergency Coordinator or the NSW Teachers Federation?

CHAIR: I have in front of me Ms Marks' employment title with the NSW Teachers Federation and it appears to be a dual role: It is Research/Industrial Officer and Climate Emergency Coordinator, NSW Teachers Federation. Ms Marks has that combined role at the organisation, is that correct?

The Hon. WES FANG: The reason I ask, Chair, is that in the meeting paper circulated the attendee was from the Teachers Federation. I was unaware which role Ms Marks was representing.

Ms MARKS: Chair, in both roles I am a Teachers Federation officer.

CHAIR: I confirm that the Unions NSW submission is No. 48 to the inquiry, the Public Service Association of New South Wales submission is No. 45 to the inquiry and the NSW Teachers Federation submission is No. 32 to the inquiry. They have been received and sit as evidence to the inquiry. I will invite each of the organisations to make an opening statement and there is no need to repeat what is contained within your submissions. The plan is to invite a representative from each organisation to make an opening statement and then we will open to questions across members from the Government, Opposition and crossbench.

Ms FLORES: I would like to thank the Committee for the opportunity to address the hearing today to discuss the Unions NSW submission into the inquiry into the health impacts of exposure to poor levels of air quality resulting from bushfire and drought. My submission is a brief submission focussing on section 84 of the *Work Health and Safety Act 2011*. I focused on this section because I am not a health practitioner or a thoracic specialist, although I have met with the thoracic society, and I do understand that breathing in dust, smoke, or any form of pollution is not ideal. There is debate around so called safe levels of breathing in certain particles such as silica but that is a debate for another time. I think the general medical consensus that I have been able to gather is that it is unlikely that breathing in any sort of particles, certainly not smoke, is safe at any time.

The long bushfire season of 2019-2020 created an unsafe environment for all exposed to the smoke. Sydney was a very unpleasant place for months. Medical specialists have said that they do not know the long term effects that this exposure will have. That may not become evident for years to come. As an advocate for workers my submission focusses on the practicalities of working in such conditions. I do not propose the shutting down of industries. I do, however, propose the provisions allowing workers to cease work when they perceive work to be unsafe be policed effectively by the regulator, which in New South Wales is SafeWork NSW. I also propose that industries with largely outdoor workforces where alternative safe work may not be available or may be difficult to find begin to contemplate alternatives now.

Some outdoor industries have inclement weather provisions. I suggest that industries that do not have alternative working arrangements or provisions which take into account dangerous air quality begin to prepare for future summers where we are likely to experience the same extremes of weather.

Ms PULLEN: The Public Service Association [PSA] thanks the Committee for its invitation to give evidence today. Our union represents almost 40,000 workers in New South Wales. We are employed in a variety of roles primarily in New South Wales government such as prison officers, administration workers, firefighters, conservation officers, park rangers, parliamentary staff including your special constables and the staff assisting your committees, animal welfare regulators and workers in ministry of health and transport. Our membership includes workers with disability, Aboriginal workers, and workers for whom English is a second or third language. Sixty-five per cent of us are women and 45 per cent of us are regionally based.

As the pandemic has made us all acutely aware, people look to government for guidance and support during times of crises. Our members fulfil that function but are not always well equipped to do so. Our public service is not growing commensurate with our population and we are adding to their work with bushfires a predictable and urgent increase factor. We are asking our public servants to do more with less.

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Our members do what it says on the box: They serve the public in a variety of functions including assisting citizens to live and work safely when air quality is poor. As the response to the pandemic shows PSA members are good at what they do but preparedness is a function of resourcing. Fewer resources mean poorer preparation. Preparation and guidance is what the taxpayers of New South Wales pay for and our members deserve to be better equipped to deliver it. They also deserve to be protected from the hazards that arise from doing the work. Our submission sets out in detail how we think this can be done. If the fire season this year follows last year we are eight weeks away from the beginning of the fire season. It might be hard to believe given the weather today, but based on last year eight weeks.

Among our membership are not just workers who are exposed to poor air quality in a variety of ways but workers with disability and chronic health problems that poor air quality exacerbates. The same is true for the members of the public that our members look after every day in their variety of roles. The New South Wales Government can better equip our members to protect themselves and the people of New South Wales. The New South Wales Government is in a key position with the Environment Protection Authority and SafeWork NSW to increase resources to enable this to happen at work and in our communities. As the bushfire royal commission recently heard, 80 per cent of the Australian population was impacted by bushfire smoke over the 2019-20 summer at an estimated health cost of \$2 billion.

An extra 445 people died that would not otherwise have died as a result of these fires. Contrast this to the COVID-19 pandemic where our death toll thankfully remains very low at 102 nationally. It does so because of the response from Government. In our view a similarly robust approach should be taken which requires staffing and budgetary commitments from the New South Wales Government.

CHAIR: Thank you for that opening, it was clear and precise.

Ms FLOHM: We would like to thank you for the opportunity to contribute to the inquiry and appear as witnesses today and for taking the time to read our submission. This is a critical and ongoing matter for our members. On 12 November there were 80 fires burning across New South Wales. It was widely reported at the time via experts that due to the air quality the public should stay indoors. Teachers were, however, again on the frontline without any measures to protect their health and safety and that of all on site, including their students. Hundreds of teachers were ringing the employers WHS hotline to seek advice on how to minimise the risks on the impacts that they, their colleagues and students were suffering.

Smoke was inundating classrooms, playgrounds, schools and TAFEs across New South Wales. Many teachers reported that they could barely see in front of their face. Teachers in schools on the mid North Coast forced the employer at that time to take responsibility for the health and safety of all on its site by evoking the issues resolution process from the WHS procedure. My colleague Ms Marks can address that matter in greater detail.

Finally, the employer—the Department of Education—issued advice on 19 November, a fact sheet, which is contained in attachment A of our submission. This advice did not only not resolve the matters, but actually caused greater confusion for our schools. It was absolutely unimplementable in a practical sense. It is also noted that SafeWork NSW was also unprepared to provide agencies such as the Department of Education with clear advice and guidance on hazardous air quality. Unless we do something to take action now on climate change this will be a frequent occurrence in our schools and measures must be put in place to address the root causes.

The CHAIR: That has completed the opening statements from the respective organisations.

The Hon. WES FANG: My first question is to Ms Flohm in regards to her opening statement. You said that we need to take action to address root causes to protect workers into the future. Does that mean you would be supportive of increased burn-offs to reduce fuel loads on the ground and/or measures to reduce build-up of fuel loads, such as razing in national parks and the like?

Ms FLOHM: Sure. Thank you for the question. I will refer you to my colleague Ms Marks to talk on the impacts of climate change.

The CHAIR: Ms Marks, it is over to you.

The Hon. WES FANG: To the actual question, it actually was not about climate change. We were talking about addressing the root causes and I am interested in your position about the root causes of fuel loads on the ground and the build-up of fuel load and how we address those and what your position is with regards to protecting your members.

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The CHAIR: Are you clear on the question that has been directed, Ms Marks?

Ms CATE FAEHRMANN: Point of order—

Ms MARKS: I am clear on the question but it does not seem relevant to this inquiry and our submission has not addressed it because of that.

The Hon. WES FANG: That is kind of my point. It seems to be a very focused submission that does not address what is often recognised as part of the concerns.

Ms MARKS: I disagree with you that that is—

The CHAIR: Ms Marks, if you are not in a position to answer the question because you do not have sufficient information, you can take it on notice if you wish. If you do not want to answer the question you do not have to answer the question. It is up to you. A question has been asked of you, it is up to you to decide what to do with that question. I consider it in order: it is a question that fits into the remit of this inquiry.

Ms MARKS: It is not something that federation has been investigating at this time.

The Hon. WES FANG: So then my lead-on question from that is: Why has the federation ignored what is widely reported to be a great contributor to the bushfires that we saw in the 2019-20 bushfire season? If they have not considered that, have they actually failed their members by not addressing that issue?

Ms MARKS: We have made a submission to the NSW Independent Bushfire Inquiry, which you are welcome to read if you would like, Mr Fang. I think most people in New South Wales watching for the outcomes of that inquiry, as well as the royal commission into natural disasters. I do not think it is clear at all that that was a factor and I do not think anybody at the moment could comment on that without any doubt.

The Hon. WES FANG: Okay, I am going to flip that response then and say, Ms Marks, if that is the case, how are you able to make a submission purely dealing with climate change when—and, look, I have been following the royal commission closely, obviously. I live in Wagga and we had a number of bushfire issues around the Tumut/Tumbarumba/Batlow area and I was actually there for that. I know that the submissions to that have been around fuel loads and the management of national parks and the like—how we allow build-up of fuel loads on the ground. That is definitely being addressed by the royal commission. How the Teachers Federation has made a submission that has clearly no acknowledgement that that was a contributing factor to the smoke in the areas around New South Wales at the time, I would contend that that is an absolute failure by your organisation to—

Ms MARKS: Again, where is—

Ms CATE FAEHRMANN: Point of order—

The CHAIR: Is there a question there, Wes, or are you making a statement?

The Hon. WES FANG: Yes. I would like her to address why the Teachers Federation feels that that is not part of the contributing factors to the air quality.

Ms CATE FAEHRMANN: Point of order: I ask the member to direct his questions in relation to the terms of reference of the inquiry. He is badgering the witness. Witnesses have every right to submit what they wish to an inquiry such as this. In fact, every single submission I have read for today—every single one—mentions climate change. I think the member is wasting time and I would ask you to direct him to treat the witness respectfully. They all have the right to appear as witnesses and be treated respectfully and the Hon. Wes Fang is not doing that.

The Hon. WES FANG: To the point of order: I believe I am asking the question respectfully. I have read the submissions, I have considered what is there and I have looked at the terms of reference. I am asking a question that an organisation, such as the Teachers Federation, which represents its members, has made a submission and I believe that it has been lacking in those certain areas. I am trying to elucidate on that component—

The CHAIR: Order! That is your opinion. The specific matter that you are directing the question around is not expressly covered by the terms of reference to this inquiry—

The Hon. WES FANG: Chair, look, it has been used on me a number of times—

The CHAIR: Order! I am speaking. It is not expressly covered by the terms of reference. You have bowled the question up to the witness, the witness has provided an answer in reference to other submissions that

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the organisation has made to other inquiries and that is the answer that has been received. I think you have received your answer. Do you have another question?

Ms CATE FAEHRMANN: We do.

The Hon. WES FANG: I wanted to ask if the Teachers Federation was prepared to look at other causes and expand and make a supplementary submission.

The CHAIR: That is a matter that the organisation can take on notice if it wants. It has already made a submission to the inquiry and it can take that on notice if they wish. Is there any other response from either witness from the Teachers Federation before I move on to another member?

Ms FLOHM: Thank you, I wish to respond to that. Teachers Federation policy and direction is decided by its State council and its annual conference. It is not a matter for parliamentarians to direct such a process. It is the members—the 62,000 members—who inform the direction of our policy.

The CHAIR: We will move on.

The Hon. WALT SECORD: I have a question for Natasha Flores. In your submission—I think it is page 6 or 7—you have referred to a deep concern about workers having to argue with their employer about whether it is safe to work or not. What do you propose or what would you like to see as a framework to go forward?

Ms FLORES: Thank you, Walt. It concerns us at Unions NSW that we hear from our affiliates quite frequently that workers or groups of workers who take cease work action under the WHS Act are often accused of taking unprotected industrial action. In an environment such as the one we have just experienced in Sydney, there were many workers—outdoor workers particularly—who felt that they could not safely work in the outdoor environment. Unfortunately, some of those employers believed that what they were doing was taking unprotected industrial action, where they were actually saying, "No, we are not." Taking a cease work action under the WHS Act is not ceasing work per se, it is asking the employer to provide you with alternative safe work. My concern is that there will be industries where it will be very difficult to find alternative safe work for large numbers of workers who work primarily in outdoor settings.

Some industries have worked very well to deal with this situation and I propose that the employers or work industries that do not at the moment have any sort of backup system for these sorts of situations, begin to consider right now what they may do in the future when we are faced with similar situations. For example, the building industry has inclement weather provisions. I would suggest that certain industries and, certainly unions, need to be able to sit down together and discuss these things. Obviously, having provisions within an enterprise agreement would assist and also having these provisions within awards when it comes to renegotiating awards, would definitely be helpful moving forward. What we are looking at is a solution to preventing health issues further down the track. We are not necessarily—in my submission I certainly was not looking at bushfires and climate change.

I accept the fact that this may be the new normal—to quote our Premier—and if it is indeed the new normal, then we need to accept that we do not know what the health impacts are going to be and we need to protect workers to ensure that in 20 or 30 years' time we do not see deaths arising from these summers. Unfortunately, I do not believe that the regulator is always helpful in these matters; employees are often questioned. My understanding of the Act is that if I, as a worker, feel that undertaking a particular task will be unsafe or could cause imminent or immediate harm then I am able, under the Act, to say, "No, I do not wish to perform this task, I am ready to perform safe work. Please find safe work for me." As I said, it is not going to be easy in some industries, but it needs to be considered now so that we are ready for the next season. I hope that helps.

Ms CATE FAEHRMANN: Thank you everybody for appearing. I might go back to the Teachers Federation to ask a question that actually matters in terms of teachers and students. You said in your submission that the Department of Education's advice to schools was effective and timely in relation to fires but, unfortunately, its response to the associated air quality hazard was not. I want to check, since those fires and the bushfire smoke affected so many students, has the union been contacted by the Department of Education or anyone else in Government to begin a process of changing the protocols and advice and information before the next fire season? I am wondering if there has been any action there that you are aware of.

The CHAIR: Are either of the witnesses from the Teachers Federation able to answer that?

Ms MARKS: Thank you for the question. The department has established a new executive director position of the bushfire release strategy and federation officers have had a lot of meetings with that person and

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her team, along with lots of other stakeholders in New South Wales. Unfortunately, air quality has not been a primary focus. I have to be honest with you, the fact sheet version 3 that is in our submission still remains the advice that is on the department's website—the only advice. Certainly, we are having ongoing discussions with that executive director, noting that, as Ms Pullen alluded to, we may have bushfire season starting within the next two months. So that is an ongoing discussion that we are having.

Ms CATE FAEHRMANN: Okay, thank you. I have another question, as well, for the Public Services Association. I am interested to know, you mentioned quite a bit—in fact, this is relevant to Teachers Federation as well—about building standards. Obviously there have been a fair few submissions that have raised this point in terms of different circumstances for work in the buildings that people have to work in. The same question applies, I suppose, in that has there been any—I think one of your recommendations was around building standards. I wonder if you could talk a bit more about that and whether there has been any movement since you made your submission in regard to progressing/improving the situation before the next fire season?

Mr DEGUARA: I will answer that. In relation to that there has not been any movement. What we found during the bushfires, particularly in regional areas—the mid North Coast and other areas—is that your actual offices are fairly safe, but other sorts of buildings, such as schools—where we have members as well,—Service NSW, where there is a direct customer interface, the things such as air conditioning were not able to work effectively. If you are in a contained office it is probably the best place to be, whereas if you are in transit between workplaces or you are in a shopfront it becomes difficult. We have people up in Port Macquarie, for example, in office areas, who had to open their doors and have people come in, so we had to take interactions there—both in TAFE and other government agencies. They had the bushfires surrounding them for weeks and weeks. I think the other side of that is that if there are not safe standards then there needs to be, as Ms Flores was suggesting, a de-escalation.

We have had the ability during COVID to work from home and make alternative arrangements. We can do that—we have proven we can do that—and we could do the same for bushfires and allow people to also avoid public transport, which was also—some of the lines in Sydney, for example, were without adequate air conditioning and atmosphere. I think we have talked about that a bit in our submission, so I do not want to go over it again. But people who are vulnerable should automatically, similar to COVID, be able to be excluded from certain shopfront activities and job redesign, such as working from home or other locations. Then there is also everyone else. We have people who put the wet stuff on the red stuff, as they say, and firefighters in national parks—the Rural Fire Service—we have members who have had parts of their lungs removed. So there is no doubt that this stuff—bushfire particulates—does harm your lungs.

They have not been smokers, they have been otherwise healthy people. They have had 30 years of exposure and then had medical consequences. That workplace cannot really be adjusted apart from personal protective equipment [PPE] and alternative air, but the actual workplaces where everyone else sits, they should be adjusted. There were people reporting not being able to see their work colleagues on the other side of their offices because of the smoke inside some of these offices. That should not happen in the modern day.

Ms FLOHM: I wondered if I could supplement Mr Deguara in relation to Ms Faehrmann's question, if that is okay. The situation as Mr Deguara described—many of our members work together in schools—the situation in classrooms is that they are enclosed spaces and the advice from the department was to stay indoors. The problem with that, and hence my reference to the unimplementable, is that when you open the door the smoke comes in and, of course, then everybody is contained in that room for up to six hours because that was the advice—not to go outside. While we could try to minimise risk by moving into greater spaces, such as a library—that is one option—we have schools with up to 2,000 students, so they are not actually feasible options in terms of the implementation.

And going outside was not an option. Nothing has changed, to go to your point. Nothing has changed in relation to the way in which classrooms are constructed. Many, many public schools across New South Wales do not have air conditioning. But in the case of those that do, it did not matter because as students come and go between classes, et cetera, then you have the opening of doors and the entry of smoke. So, the situation is now, as we enter the next season, as it was in the last.

Ms CATE FAEHRMANN: I have one more question for Ms Marks. You included climate change in your submission and, in fact, as I mentioned before, every submission has mentioned climate change that I have so far read for this inquiry. Why did you feel compelled to mention climate change in your submission as an organiser for the Teachers Federation? Why did you want to impress upon this Committee that climate change also be considered when we are considering air quality in recommendations to the Government?

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Ms MARKS: Thank you for that. Since about 2007 the Teachers Federation has had a very strong policy position about climate change and same with the national union, the Australian Education Union. Last year, as there were quite a lot of global climate strikes, the federation council, which meets eight times a year, discussed this matter quite regularly and passed motions in support of those student strikers. A lot of them, of course, are around our own students and we wanted to show our support and solidarity with them. I might just say that the last February council, which was the first State council after the bushfire season, which was devastating for a lot of our members in schools and TAFE and continues to be, we noted the Garnaut report quote from 2008, which was:

... fire seasons will start earlier, end [slightly] later, and [generally] be more intense. This effect increases over time, but should be directly observable by 2020.

Further, we also noted that there was stark advice, not just in 2008 but during last year, from, for example, those former fire commissioners. Council has unanimously and repeatedly noted that the disaster over the summer was a crisis that should have been averted. I hope that answers your question.

The Hon. WES FANG: I was just curious as to how Ms Marks would have avoided the situation?

Ms MARKS: One thing you could do is ask Mr Deguara from the PSA how many public servants have been removed who actually do the work that you are talking about—the experts who do the hazard reduction, for example.

The Hon. WES FANG: We discussed this earlier. There was no reduction in funding, particularly to the Rural Fire Service, and those comments should be struck out as out of order because—

Ms MARKS: I did not say the RFS.

The Hon. WES FANG: We have seen an increase in funding from the Government and I invite Ms Marks to actually respond to the question that I asked.

The CHAIR: Can you ask the question again to the witness and the witness can answer it as best she can or, in fact, decide not answer it?

The Hon. WES FANG: In Ms Marks' response to Ms Faehrmann's question before mine she stated that the situation should have been, I think, avoided—I am paraphrasing and I do not want to put words in your mouth. I am just curious as to how Ms Marks would have implemented that?

The CHAIR: That is the question.

Ms MARKS: Me personally?

Ms CATE FAEHRMANN: Point of order—

The CHAIR: There is a point of order.

Ms CATE FAEHRMANN: Is the Hon. Wes Fang seriously asking Ms Marks, who has come here from the NSW Teachers Federation to answer questions from us in relation to air quality, what she would have done to stop the bushfires? His question is clearly ridiculous. He is badgering the witness and, as I said before, he really needs to treat the witness respectfully, who is here talking about air quality, which has had a serious impact on teachers and students over the last summer. He is actually treating the entire topic like a joke and it is pretty disgraceful, I have to say. It is embarrassing.

The Hon. WES FANG: To the point of order: I was only referring to the evidence that was provided by the witness. When the witness says that it is a situation that should have been avoided—we are talking about catastrophic bushfires after three years of drought and fuel loads on the ground—I am curious as to how the witness is able to make that statement and, having made that statement, what evidence she is able to provide in order to back up that statement. Obviously, when the Hon. Cate Faehrmann says that the question is ridiculous and out of order it is only based on the statement made by Ms Marks. So, you can draw your own conclusions as to that evidence.

The CHAIR: We are not reflecting on members or persons giving evidence to this inquiry. Ms Marks, is there anything else you wish to add to what you have already said before we move on to the next question from another member?

Ms MARKS: No.

The Hon. WALT SECORD: This is to the Teachers Federation. Were there any requests for provision of PPE to schools or did principals in any case recommend or seek them out?

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Ms MARKS: I can answer that. There was one very strange example on the mid North Coast of a principal who was trying to do the right thing, they were following the fact sheet trying to minimise the risk at the local level, and they were going to go out to a pharmacy and source masks for every staff member and every student. The issue is, that is not the clear advice from either NSW Health, or the Department of Education or SafeWork NSW and it still isn't—and it is not for COVID, either. Those matters are unclear for our members. So, to summarise, no, there was no clear request for PPE and there was certainly no advice that you should use PPE, even when Port Macquarie was at 1,000 or over for hazardous air quality. Even in those circumstances members asked, "Is that something that should be done?" But they were referred to this fact sheet that is in front of you, which does not mention PPE.

The CHAIR: Can I jump in and ask the three organisations providing evidence this morning and this afternoon whether they have any recommendations for us to consider with respect to this inquiry? As you know, after deliberation we produce a report and flowing from that report our recommendations back to Government. Do you have any specific recommendations you think we should consider, arising from this inquiry? If we start with Ms Flores, is there anything specific that you would like us to turn our mind to?

Ms FLORES: We would like to see the regulator more involved in future situations, where workers do find that they are unable to work from wherever they are working. I agree with Mr Deguara in that COVID has taught us that many more of us than we thought are able to work from home and if that is certainly possible then workers should be able to work from home without any sort of problems from their employer. Generally speaking, it has worked well during COVID and I am of the belief that it will probably continue beyond that. I agree there are insufficiencies in buildings. It is a very difficult area because all of the schools—and this is an industry I have come from myself; I began as a teacher. There are a lot of old buildings out there that do not seal particularly well. I work in one myself. It is a beautiful heritage building, but on a very bad day the air would be quite nasty inside the building and we were, on a few occasions, sent home.

As for air conditioning, I think that it is a very good point made by Mr Deguara—that air conditioning is inadequate in many cases and, in many cases, does not exist. So, we have many workplaces that do not have adequate air conditioning. I understand that possibly shopping centres are one of the locations with rather good air conditioning, as a result of wanting to ensure that diseases such as legionnaires do not infect their workers and, obviously, shoppers. In the future, given that I do believe in climate change—I do not wish to argue that, I believe scientists around the world are correct and I believe this will be an ongoing situation for us unless we take global action.

That is a debate for another time but, if we are to live in a world where we have a bushfire season which lasts for potentially six months, we will need to think about the way in which we conduct work, the way we build buildings, air conditioning and the way we treat workers if they claim that they are unable to work in certain situations. I do not think it is acceptable for employers to question workers when they say they are unwell because the air quality is extremely poor. This is a situation that is happening. People should not have to come up with a doctor's certificate to say they have asthma in extremely poor air quality. They should be taken as genuinely—we know that the air quality was terrible, we know it was terrible for everyone, regardless of health. There are people, as was mentioned by the PSA, who were in very good health who have suffered since then and there will be people who have health issues who will also suffer.

Workers who say, "I am undertaking a cease work, I cannot work in this weather, I am going to be sick", should be taken at face value and not questioned, not sent to doctors. They are not saying they are refusing to work, they are saying they are unable to work in particular circumstances and this is something that, as a society, we will need to deal with. That may involve further work with SafeWork, with government, with unions and other stakeholders—employer groups, et cetera—moving forward.

The CHAIR: Thank you. Does the PSA have any particular matters it would like to direct our attention to?

Ms PULLEN: I would commend our recommendations in our submission to the Committee—we had 10. To pick up on what others have contributed, far be it from me to tell the New South Wales Government how to spend its money, but if it is looking for an infrastructure spend to boost employment during a pandemic, perhaps fitting schools with air conditioning and public buildings with air filtration might be a decent place to start. Also, ensuring that the work at home provisions that have been made available to our members continue—that is certainly part of work we will be doing ongoing into the future, but worth noting for the record. The other thing to note is that the NSW Environment Protection Authority [EPA] and SafeWork have lost staff. They are no longer staffed at the levels they were at a time when New South Wales had fewer citizens. So, ensuring that those agencies are properly staffed and equipped, in our view, would be critical.

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The third point I would raise, again, goes to our submission. As this inquiry particularly asked for submissions around vulnerable people—people with disability, people for whom English is a second language, people with chronic health issues—there is a workforce that, if you look at what the New South Wales Government provided during the bushfire crisis, is missing. There is not someone who has translated the Department of Planning, Industry and Environment [DPIE] website into languages other than English. If you google "Sydney air quality" and you get past all the commercial providers that purchase the ad space, and you get to the DPIE website, which is below the fold on a desktop, it is only in English and it does not display on a mobile. I am only speaking from my marketing background here but the idea that someone will find your website for you and read it in English and put up with not being able to look it on a mobile, that is something that would see even the most junior marketing person disciplined or lose their job.

It is not good enough, particularly given what we have just seen during COVID-19, where we had wall-to-wall advertising—download the COVID app, get on the website. I can tell you which category of vulnerable worker I am in because of the work that the Federal Government did, but we do not have an equivalent workforce in New South Wales that is spending time saying, "Should we put some ads on Facebook to target people who live in Sydney or for asthma support groups?" We do not have people translating our government websites and data around air quality into languages other than English and we are not doing the work to make sure that—again, using the DPIE website as an example, it is inaccessible if you are using a screen reader because you are vision impaired. There is a cohort of work that is not being done to protect citizens. It is a cohort of work that should be done by New South Wales public servants and they are in agencies that are subject to both budget efficiencies, which means cuts, and labour expense caps.

The CHAIR: Thank you, that was very helpful. Are there any final comments the Teachers Federation would like to make in terms of specific recommendations we should be looking at?

Ms FLOHM: As outlined in our submission, access to air quality monitors is really critical so that schools are able to see the level of air quality hazard and respond accordingly. That would certainly be one of our recommendations. The other is providing very clear and consistent guidelines and advice to schools about what they must do in these circumstances. Coming late and providing advice that is unimplementable escalates the anxiety and, we would argue, the impact of the health and safety of workers. We must have really clear procedures informed, of course, by SafeWork and others, that take schools to what exactly they must do in these circumstances that go to the WHS Act and the minimisation of risk. We cannot have a situation that we just had in November, where people are told, "Look, if you are not well, go home", because that is not how schools operate.

You cannot send lots of teachers home in a school because, as I mentioned previously, that has an additional impact on the other staff, et cetera. So we would call for very clear policy and procedures in that area. The third thing that we would seek to recommend would be greater protection for vulnerable workers. I note that has also been raised by others. Certainly it is the case, as we have seen in the pandemic, that those who have respiratory illnesses, et cetera, are described as vulnerable and are dependent upon the guidelines. In this case, we must identify those vulnerable and we would argue that they should have access to special leave in the same way in which public sector workers do now, in order to work from home flexibly if required or access leave if they are not well.

The CHAIR: Thank you very much. On that note, I thank all our witnesses and the three organisations represented by those witnesses for making yourselves available today. It has been very helpful to give us the opportunity to specifically address some questions to you, which augments what has already been provided in your useful submissions. Thank you all very much, we appreciate your participation in this inquiry.

(The witnesses withdrew.)

(Luncheon adjournment)

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DANIELLE McMULLEN, President, Australian Medical Association (NSW), affirmed and examined

BEN EWALD, Convenor, Special Interest Group on Air Pollution, Doctors for the Environment, affirmed and examined

KRISTINE BARNDEN, Member, Royal Australian and New Zealand College of Obstetricians and Gynaecologists, affirmed and examined

The CHAIR: First of all, I invite any members of the Committee who have open any apps from other tablets or iPhones or what have you to close them down. We have got a bit of background noise this afternoon that we did not have this morning. With that said, I commence the session this afternoon and welcome our three witnesses. Thank you very much for making time available this afternoon. We know that you are all very busy and we do appreciate you setting aside some time this afternoon to provide some evidence to this important inquiry.

Before we get things underway, I confirm that from the point of view of your respective organisations we have received your submissions. Thank you for those. They have been incorporated as evidence to the inquiry. The submission of the Australian Medical Association (NSW) [AMA] stands as submission No. 31 to this inquiry. With respect to Doctors for the Environment Australia [DEA], that submission stands as No. 24. With respect to the Royal Australian and New Zealand College of Obstetricians and Gynaecologists, its submission stands as No. 30. Those submissions can be taken as read; all members have had an opportunity to read them and study them before the hearing today. I now invite an opening statement from each of you. If you could keep that statement reasonably short it will open up more time for us to have questions asked of you.

Dr McMULLEN: Our brief statement to summarise, as you have read the report, is that bushfire season starting earlier and finishing later, along with the extreme weather conditions caused by climate change that we have seen over the past few years, is making fires more intense and difficult to control. Because of that, we think that New South Wales needs to put in place a strategic emergency response to natural disasters that looks at coordination between central, regional and local organisations with a recognition of the important role of general practice and primary care.

Studies on the acute effects of exposure to bushfire smoke show that there is a substantial health burden associated with bushfire smoke and hazard reduction burns, including premature death, and that in particular young children, older people, pregnant women, outdoor workers and people in lower socio-economic groups are at greater risk of the health effects from poor air quality. Research into the effects of poor air quality in Indigenous people is lacking and should be a priority for future research, as well as the health impacts on other vulnerable and at-risk groups. The devastating 2019-2020 bushfires in New South Wales were unique, in that their extended period of bushfire activity resulted in residents experiencing poor air quality for longer periods of time than previous seasons. Again, we need more research on the medium to longer term exposure risks to bushfire smoke.

Communication is key in protecting the health of New South Wales residents. We think that information must be timely and relevant for different populations, taking into account their differing ability to use electronic technologies. Specific information regarding air quality forecasts and pattern of PM2.5 concentrations would help people make decisions about their outdoor activities and workplace risks. Climate change is expected to have direct and indirect impacts on people's health. In addition, climate-related disasters including persistent and severe drought are associated with significant mental health risks. Current policy and planning frameworks need to take into account the likely impacts across the health spectrum of air quality.

Dr EWALD: I suppose what I can add to this discussion is a bit of a dive into the epidemiology of the health impacts of air pollution. Air pollution exposure to smoke, such as the fine particles that are in smoke, causes exacerbations of heart and lung disease but it also causes these diseases to occur at a fundamental level. The exacerbation of disease shows up in the people getting sick during bad air days and going to hospital, some of them dying from it. Since we wrote our submission there has been a paper published in the *Medical Journal of Australia* [MJA] showing that there were 417 deaths attributable to the bad air days and 3,000 admissions over the last summer—that is for Queensland, New South Wales and Victoria.

Those are the acute effects, but air pollution also has chronic effects. You can think of it here like all the other risk factors for, say, ischemic heart disease, including poor diet, high blood pressure and cholesterol, and air pollution contributing fundamentally to these disease processes. When a person whose heart disease is due to air pollution actually has their heart attack it may not be on a bad air day; it might be on a day with perfectly good air. The total air effect is not just the sum of all the one-day effects. When this has been examined

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epidemiologically the chronic effects are about five times bigger than the acute effects. I have got no argument with the numbers in the MJA paper—counting up the number of deaths—but those are only the acute deaths. There is a chronic disease burden that will play out over the next year or five years or 10 years which will be quite a lot larger.

In my submission I calculated out one way of working out what that burden may be, but there are a lot of unknowns in those numbers. Those numbers are presented on the basis it is better to be approximately right than precisely wrong. Other people may bring up different numbers for the same kind of issues. I think there is a chronic disease burden and that it will be bigger than that acute burden. As we have already heard, these fires have happened with just 1 degree Celsius of warming. When we get to 1½ degrees Celsius or 2 degrees Celsius of warming these sort of things will become much more severe and much more common. We need responses to that, which I guess I can talk about shortly.

Dr BARNDEN: The extent of the effects of air pollution on pregnant women and their babies is I think, from my review of the literature, very often underappreciated and not taken into account. A pregnant woman and her fetus are uniquely vulnerable to the effects of air pollution. The physiological changes of pregnancy mean that pregnant women receive higher doses of airborne toxicants than other adults do and their cardiovascular system is already under stress from the demands of pregnancy. Air pollution, including short-term exposure to bushfire smoke, has been shown to increase the risks of pregnancy complications such as pre-term birth, small babies, gestational diabetes and high blood pressure. These outcomes can then lead to long-term health issues for mother and baby.

A fetus is exquisitely sensitive to the environment around its mother, with hormonal and inflammatory changes in the placenta being the main mediators. Air pollution can affect organ growth and development, damage DNA and change the way that genes are switched on and off. There is a growing body of evidence that exposure to chronic air pollution in utero increases susceptibility to heart and lung disease, obesity and diabetes in later life and has been associated with lower IQ and behavioural disorders. These are insidious effects it may take decades to appreciate. There is less research on short-term to medium-term events such as bushfires, but I think there is no reason to expect that the effects would not be any different.

For most women the effect of exposure to the moderate levels of bushfire smoke seems to be fairly minor. However, many women have increased levels of vulnerability. They may be exposed to background high levels of indoor and outdoor pollution, high levels of psychosocial stress, poor diets and underlying health conditions. These are in themselves risk factors for adverse outcomes in pregnancy and they also potentiate the effects of polluted air. Due to the pervasive nature of air pollution this is a major public health issue. Fossil fuel use leads to air pollution and climate change. Climate change further exacerbates air pollution and poses risks to health in a number of other ways; by far the vast burden of these is felt by children. Beyond the negative health impacts of air pollution and climate change, Australians are increasingly being denied the opportunity to enjoy a healthy natural environment with all of the positive health benefits that brings.

The CHAIR: Thank you, Doctor. That sets it up very nicely for our members to ask questions. Doctors, what we normally do is that we have members really just jump in and ask questions and we rotate between our members, so it is a pretty fluid arrangement. The members will identify themselves and then identify which doctor they would like to direct the question to. Who would like to get the questioning underway?

Ms CATE FAEHRMANN: I am happy to if no-one else does, Chair. Thank you all for appearing today and for the good work that you continue to do in this space. I go firstly to the clean air strategy. We have heard a couple of reports in the media in recent days firstly that it was not going to be, the New South Wales—

The CHAIR: Ms Faehrmann, can I interrupt? We have got a lot of background noise, which is like little squeaks. I am not quite sure where that is coming from. Firstly, if people have a tablet or phone or whatever with apps open please close them now. Secondly, if you are not speaking can you please mute your microphone? That may assist us in getting better audibility. Ms Faehrmann, please proceed.

Ms CATE FAEHRMANN: Thank you. I will start with the clean air strategy. Flicking between submissions on my computer, it was mentioned in the Doctors for the Environment submission on page 7 that this needs to urgently be finalised. The AMA may have also mentioned it as well. Dr Ewald, would you like to comment about the importance of the Government releasing that—I think it has been delayed now for a few years—and whether you are aware of any consultation on that, whether you have been participating in it and why you think it is important it should be released?

Dr EWALD: We have taken part in a number of consultation processes over the years. There was the load-based licensing system—started a review process which has never finished—and the clean air strategy. We

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wrote submissions to that process. We went to a Clean Air Summit back in 2017. A lot of public consultation went on and those strategies have never seen the light of day. That is very disappointing to the community groups that have taken an interest and got involved. We think there is a rapid need for New South Wales to have a clean air strategy to deal with all the regular everyday controllable sources of air pollution. I do not think a clean air strategy can stop bushfire smoke but it could address the issues that are occurring every day of the year.

Ms CATE FAEHRMANN: I have another question for the AMA. I wanted you to expand on—I think this is a particularly good example that you refer to in your submission in relation to the Hazelwood health study, which was the study that investigated the health outcomes of populations that were exposed to six weeks of smoke from the 2014 Hazelwood coal mines in Victoria. Are you able to expand on what was found in that research?

Dr McMULLEN: I do not have further information in front of me other than what was in the submission, but I can take that on notice and get a broader summary provided back to this group if that is helpful. Otherwise, one of my other colleagues on the panel may have other information about the study itself.

The CHAIR: That would be great. Do either of the other two doctors have any comments about the Hazelwood study?

Dr BARNDEN: No.

Dr EWALD: No.

The CHAIR: Okay.

Ms CATE FAEHRMANN: Okay, no worries. I do have another question. A couple of witnesses this morning spoke about the fact that the New South Wales Government, I think after several weeks of the bushfire—I do not have the exact date—issued new a New South Wales interim hourly average standard, because we were only using the daily average standard. I think for PM_{2.5} this was 62.1 micrograms per cubic metre and for PM₁₀ it was 80.1 micrograms per cubic metre. I have two questions in relation to this, if you can assist. Firstly, are any of you aware of how the Government would have come to that? I put that question to all of you. Secondly, what are your views on that? Should it be better than that? Is it fair enough, given the circumstances?

The CHAIR: Any of the witnesses can jump in if they wish.

Dr EWALD: We addressed this in the DEA submission. I could not find any epidemiology done on one-hour exposures to try to set what the level should be. Given that the 24-hour standard for PM_{2.5} is set at 25 micrograms it seems reasonable to me to set the one-hour standard at maybe double that level. That is more or less where it is. When I looked through the days of the bushfire season, if it went over 50 micrograms it went over 62 micrograms. If it went up to 100 micrograms or 200 micrograms I do not think it makes any difference whether your cut point is at 50 micrograms or at 62 micrograms. I do not know how NSW Health arrived at those one-hour levels but I think they are reasonable. If we are looking at a level at which you would, say, cancel community sports events or you would suggest people do not work outdoors if they have got any kind of heart or lung disease they seem to be reasonable values to me.

Ms CATE FAEHRMANN: Just a point of clarification, sorry, to Dr Ewald, or actually to explain further for the Committee in relation to this: What is the importance of having the average hourly standard on top of the daily?

Dr EWALD: If it is a terrible air day and you are making a decision, well, should the kids' soccer go on today or should we cancel it because of bad air, if you are relying on a 24-hour average then, firstly, you do not know what that is until midnight has passed, so that is not so practical. Secondly, the air quality can be very different in the morning and the afternoon—the wind changes direction and the smoke is blown somewhere else. I think that there is a place—for practical applications like when to cancel school sports days it is useful to know on an hour-by-hour basis what it is likely to be and to have a standard to judge that against. That is where it fits in. For myself, all my urban transport I am doing on a bicycle. I can decide whether I am going to wear my particle filter that day riding to work based on what the air is at that moment, not necessarily what it was yesterday.

Dr McMULLEN: We would be supportive of those statements as the AMA—what Dr Ewald just said—for those reasons, too.

The CHAIR: Thank you, Doctor. Would any other members like to jump in with a question?

The Hon. WALT SECORD: Chair, I have a question.

The Hon. EMMA HURST: Chair?

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The CHAIR: Who is speaking?

The Hon. EMMA HURST: Both the Hon. Walt Secord and I have put our hands up.

The CHAIR: We will start with the Hon. Emma Hurst and then go to the Hon. Walt Secord.

The Hon. EMMA HURST: Thank you, Chair. I have a question for Dr McMullen. You said in your submission that the New South Wales Government needs to put in place a long-term strategic health plan. Would you give us a bit of a run-down on what are some of the key things you believe should be in that?

Dr McMULLEN: With relevance to this Committee, we thought that—obviously the focus of this Committee is on air quality, so we would be supportive of a longer term strategy that has in place what Government's response will be to the likely worsening of air quality with climate change. That is both the communications strategy to health professionals but also to the general public about what to do in cases of poor air quality days, but also if we were to see another disaster event like the 2019-2020 season what strategies are going to be in place to protect our communities and whether that is the provision of personal protective equipment [PPE] supplies to at-risk members of the public. That is just to give an example, but it is that type of step-wise strategic approach to air quality that would be important.

More broadly, we do expect that given climate change that environment-related health impacts will grow—whether that is due to more hot days, more drought-affected communities—we feel that it is upon New South Wales to think about the health impacts of climate change and have a strategy going forward as to what is being done to address some of those risks.

The Hon. EMMA HURST: I have one other question, for Dr Ewald. You talked a little bit about the fact that air quality is already deteriorating. Can you maybe give us a bit of a background about what has caused that deterioration and how we incorporate that existing deterioration into what the Government response is going forward?

Dr EWALD: The background sources of everyday air pollution apart from bushfires—there is very large input from coal-fired power stations. The power stations in New South Wales have extremely generous licence conditions and pollute at levels of up to 10 times what would be allowed in Europe or North America. These licence conditions are about 30 years out of date. Things like SO₂ scrubbers and nitrogen dioxide capture are not required on New South Wales power stations, where they would be required at power stations anywhere else.

The vehicle standards are lagging. The Euro 6 car exhaust standards have been in place in Europe since I think 2014 but have never been adopted here. We used to have the excuse that the Australian car industry needed time to catch up, but since we do not have a car industry anymore that excuse does not exist anymore. More rapid adoption of cleaner vehicle standards would make a big difference.

The Hon. WES FANG: Sorry, Dr Ewald—I think fuel standards also play an issue with Euro 6 engine implementation. Is that correct?

Dr EWALD: Yes. There is a problem that the fuel standard in Australia is also not up to scratch. Australia's fuel standard matches about those in Mexico, allowing high levels of sulphur in fuel. Cleaning up the fuel standards is part of being able to adopt the Euro 6 vehicle standards.

The Hon. WES FANG: So there are no [inaudible]?

Dr EWALD: There is a number of steps in allowing it to happen. A small part of it that could be easily fixed is railway locomotives. We have no standards for railway locomotive exhaust in Australia when standards have been in place in Europe and the US for 20 years. A recent proposal to make Australian locos meet a thing called tier 2 standards—which have been in place in the US since 2005—was recently taken out to public consultation and proposed licence conditions were put up, but there was an industry backlash and even those very mild regulations seem to have been overturned. So we are having a great deal of difficulty making any progress in bringing even these simple technological solutions to air pollution up to the standard that is required in most other comparable countries.

The CHAIR: Thank you, Doctor. Can I pose a question to the three doctors about the situation in Australia with respect to—obviously the New South Wales jurisdiction is a large one in and of itself, but then you have the Commonwealth jurisdiction, which obviously is separate and it is the Federal jurisdiction—the issue of having compatibility of standards and movement towards the compatibility of a set of standards that is singular as opposed to multiple. Do any of you have any thoughts about that? Or is it appropriate that a State could have

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its own standards and that framework of having the two standards working against each other sets a bit of competition going to try to reach a higher level over time? What are your thoughts on that?

Dr EWALD: Sorry, standards for what?

The CHAIR: With respect to air pollution and particularly pollution associated with high particulate levels.

Dr EWALD: Emission standards for power stations are set on a State-by-State basis and that is partly because the technology is a bit different from place to place. In Victoria they are burning brown coal; in New South Wales, black coal. The features are a bit different. Vehicle standards are governed by Australian design rules, which are implemented on a national basis. A State cannot go its own way there. The air quality standards for ambient air are set under a thing called the NEPM—the National Environment Protection Measures—and these are negotiated through a COAG kind of process. They are uniform standards across the country, although when the coarse particle standards were reviewed a few years ago Victoria did take a tougher position on PM10 than New South Wales and the other countries. So there has been some divergence about what standard is in place—

The CHAIR: Okay.

Dr EWALD: The NEPM is currently under review for sulphur dioxide, nitrogen dioxide and ozone and we expect that will be a uniform set of standards across the country, although that process is much delayed and we do not know where it is up to.

The CHAIR: Thank you, Dr Ewald. The Hon. Wes Fang, did you have any questions?

The Hon. WALT SECORD: I had some questions.

The CHAIR: I apologise, Mr Secord. You have the call.

The Hon. WALT SECORD: Thank you, Chair. My question is to the AMA and Dr McMullen. In your submission you talk about P2 and N95 masks. What advice did your association give to doctors dealing with their patients about the effectiveness of the masks during the bushfires?

Dr McMULLEN: That was challenging at the time. I think that even extends back to our other calls in our submission for better health advice both to the healthcare sector and to patients about the impacts of air quality. I think during the time of the bushfire smoke there was a lot of contradictory and confusing information in the public domain about how dangerous the smoke is or is not and how effective masks can or cannot be. Obviously since then we have also seen the discussion of mask efficacy in the COVID pandemic. While it is a different thing that you are trying to block, similar issues were having to be communicated about mask design and mask fit.

As you hopefully now all know more, the P2/N95 masks only work effectively when there is a good seal around the mouth and nose, which is particularly difficult for people of some different racial backgrounds or different face shapes, men with beards—there are other factors that can affect a mask fit. We certainly saw problems during the bushfire season where people were choosing to use a mask and not using it effectively. Also, there was the question about who should be using masks. It was difficult to find evidence-based information at that time about who should be wearing one or not. More guidance on that would be of benefit to the healthcare sector—presumably a focus on people at higher risk of the health implications of bushfire smoke or people who are required to be outside because, as we have said, we try to minimise outdoor exposure but there is certain occupational exposure that you cannot avoid or certain outdoor activities that cannot be avoided that are having, as we said, a step-wise approach to knowing what advice to give on bad air days.

The Hon. WALT SECORD: You made reference to the sealing of the mask around the face and things like that. Is there a problem with masks that come from China or other jurisdictions because of facial shapes and things like that?

Dr McMULLEN: It is more that different brands do have different fits. In a healthcare environment it is actually a reasonably common practice when we are using them as doctors for protection to have fit tests, and different brands will just fit different people. It is not necessarily about the quality of the mask, which is a separate issue that I do not have the expertise to comment on. Presuming you do have a good quality mask, they will still be different shapes and sizes. Communicating that to the public—even the basics, that a mask needs to fit—is one factor in its effective use.

The Hon. WALT SECORD: One last question: Did you or your members find that masks gave people a false sense of security during the bushfires?

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Dr McMULLEN: As we have said I think throughout, the wearing of a mask is clearly not going to be the only solution. We cannot advocate for people to continue their usual outdoor sport while wearing a mask. It is both unlikely to be fully effective because of fit issues and also they are just—you actually cannot run around the block and wear a well-fitting N95 mask. I do not know if anyone has tried; it is uncomfortable and impractical and is not going to be the whole solution. But likewise, telling people to stay indoors for two months if we have another season like we did is also not a solution. Yes, there were probably some people thinking that masks were saving them from the bushfire smoke when, in fact, they were either not wearing it properly or not wearing it all the time. We also just probably do not have enough evidence as to how effective those masks are at blocking bushfire smoke, which one of my colleagues may have.

Dr EWALD: I have got something to add there about masks. I agree that wearing medical N95 masks is impractical if you are out there trying to exercise, but there are masks made for sports activities from countries where—especially for cycling—in cities where there are bad levels of air pollution. They do a much better job. The features are that it has a filter that the air has to pass through to get in and then it has a valve, the exhaust valve for the air to get out again. That stops the build-up of humidity and too much heat inside the mask. These masks are quite comfortable for doing hard, physical, aerobic kind of exercise in. I think this is an important question, because if there is just one bad smoke day, okay, the best advice is stay indoors and do not do anything. But if it goes on for a month, people need exercise for their general health and for their mental wellbeing and for continuing kids' sports activities and the rest of it.

If this is going to be the new normal we should be looking into these sports-type masks that can be worn—they are reusable masks. They are quite comfortable to wear while exercising hard and they do a good job of filtering out particles down to a micron or so. Such masks exist. Mine cost me about \$50, but that is a sort of specialised sports item. I am sure if they were mass produced they could be made for \$10 or \$20. I think that eventually a school uniform will include a hat and a mask that you wear on sports days. When it is a bad air emergency the kids will be out there playing their sport with a mask on.

Dr McMULLEN: Can I just add there, though, that we would strongly advocate that the masks and these solutions are not a preventative model and we really should be working harder to prevent the deteriorating air quality rather than working—yes, the guidelines need to be there, but the focus should be on prevention rather than fixing it with a mask.

The CHAIR: Dr Barnden, you had your hand up a couple of minutes ago. Did you have a point you wanted to make?

Dr BARNDEN: Yes. I was just going to say that I did reference an article in my submission that did discuss the issue of masks. It was I think written from a Chinese perspective about urban air pollution, but they raised very much that issue that there was a concern that unless people were properly educated around the use of masks that it could cause a false sense of security and people may spend more time outdoors than they needed to, thinking that they were safe, and thus actually cause more harm. There is that reference in my submission.

The CHAIR: Thank you for that. That is helpful. I ask this question to all the doctors: This morning we had witnesses who in their evidence spoke about the need for the improvement and enhancement of the monitoring of air in New South Wales—that is, the quality of the air—and the better communication of information to people at risk, with respect to what might be particular issues associated with the quality of air. I am wondering, on the issue of the air monitoring and the communication to people at risk, if you have got any comments or observations to make about either of those issues?

Dr McMULLEN: That fits well with our submission. My understanding is that air quality, as it is currently measured, the measuring points are few and far between and that work could be done to improve the localised reporting of air quality. In terms of communication with the general public about air quality, yes, we would be supportive of an education campaign to teach the public what air quality means, who is at risk and come up with a consultative framework—obviously with peak bodies—to work out how best to communicate with people, especially those at risk, as to what to do in the event of poor air quality days.

The CHAIR: Thank you, Doctor.

Dr EWALD: In the Hunter Valley there is a system where people can sign up to air quality alerts. They will get a text message on their phone if the air exceeds certain standards. I do not know if that exists across the rest of the State.

The CHAIR: No, but that is certainly worth noting. That is in the Hunter Valley, as you understand?

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Dr EWALD: Yes. It is run by the New South Wales Government; it has been going for a while. That could well be updated to have shorter time periods on it, so it is not just the one day average but the hourly [inaudible] to be included in that. Of course, the places that have monitors are geared around chronic exposure. There is a bunch of monitors in Sydney and some in the Hunter Valley. There are not any ambient monitors up or down the coast in places that usually have pretty clean air, but in a bushfire emergency of course they had terrible air. So the EPA does have capacity to do emergency monitoring and they did set up an emergency monitor at Port Macquarie over the summer, but they have only got one of those, I think; they have not got capacity to do it all up and down the coast.

The CHAIR: Okay.

Dr EWALD: So outside of Sydney, Newcastle and Wollongong there is really no monitoring done on a routine basis and outside of a bushfire emergency there is really no need for it. So I do not know how it can be got around. Maybe monitoring should be set up just for the purposes of managing bushfire emergencies.

The CHAIR: Have any other members got questions they would like to bowl up to our witnesses?

The Hon. WES FANG: I just wanted to thank all the witnesses for their submissions and evidence today. I thought the submissions were balanced and full of information. I just wanted to thank the AMA for also including reference to drought. I think it is really important to recognise that it has had a substantial impact in the State, including with the Bourke bushfire smoke issue; so thank you very much for making that reference and for all your submissions.

The CHAIR: Okay, if there is no final question—

Ms CATE FAEHRMANN: I do have one, if we still have time, Chair.

The CHAIR: Yes, we do.

Ms CATE FAEHRMANN: I just wanted to refer to the report that has come out that the Committee was sent by Dr Fay Johnston and I think a number of you have referred to, which has that death count from bushfire smoke—an estimated 445 smoke-related premature deaths in the 2019-20 season. It says that there were estimated smoke-related health costs of \$2.02 billion. So 445 smoke-related premature deaths in addition to 3,340 hospital admissions, and there is a chart here on this paper that we were sent which has obviously the 2019-20 hospital admissions through the roof. Just referring to that 445 figure, I wanted to get your views around the fact that those figures are not recorded in the actual deaths from the bushfires that are reported in the media—when we hear about the death from bushfires we hear about those that are directly related to the fire front, those tragic deaths, if you like—and why you think that is.

We have also just seen the awful 102 deaths from COVID, there is so much media attention, of course, in a global pandemic, but can we do anything about the fact there seems to be far less focus on these higher numbers of deaths as a result of bushfire smoke? Perhaps Dr McMullen, Dr Ewald and Dr Barnden (inaudible).

Dr McMULLEN: I think you raise a good point there and it certainly speaks to all of our submissions about the importance of highlighting the health effects of not just bushfire smoke but also the dust storms and other drought-related air quality issues along with the health impacts of climate change. If the Government could do whatever possible to bring that into the vernacular of the public that yes, as you say, we have got the acute death count but that there is such a whole lot of morbidity, illness and death related to the environment that people really should start talking about it both from the whole perspective and also the economic consequences of more illness, sick days, those types of things which may get more attention from different sectors.

Dr EWALD: I have been reading that paper—I have got it right here on my desk. I think it is a bit of a misapprehension about what they did. They looked at how bad the air was from day to day and calculated how many deaths they would expect that air to contribute to, but it does not actually say "bushfire smoke pollution" on anybody's death certificate. So these deaths are due to heart attacks, they are due to strokes, they are due to exacerbation of lung disease, and those diseases are all multifactorial; so a lot of things contribute to one of those health events when it happens. So very few people's death certificate will say "died of bushfire smoke", so what is in this paper is a prediction of what they would expect to have happened based on how bad the air was and the epidemiology that is known about more such events on bad air days. So this is not actually an observed a number of deaths; this is a predicted number of deaths.

The CHAIR: Thank you for clarifying that.

Ms CATE FAEHRMANN: I have skimmed it, I must say, because it just came through, I think, yesterday for us, but the chart that I am looking at does not have the actual deaths, it is just what they assume. I

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thought it was also talking about an increase in hospital admissions and an increase in deaths from respiratory-related diseases.

Dr EWALD: It is an expected increase in hospital admissions; it is not an observed increase. This is working out how many extra bed days they would expect given that the air was like that.

The CHAIR: Do you have anything else, Ms Faehrmann?

Ms CATE FAEHRMANN: Possibly just to confirm with the AMA that there was an increase, however, in terms of actual hospital admissions, just to confirm in relation to this study even if this was a predictor that there was a 30 per cent increase. I think one submission that—

Dr McMULLEN: My understanding is that there was some actual increase, but again, NSW Health would have the numbers for that. I thought there was, but I do not have the numbers on it here, but we can get back to you, plus NSW Health would have their numbers in terms of emergency department presentations and admissions and should be able to map that back to the same time last year.

Ms CATE FAEHRMANN: Yes, your submission does actually say it. It does not have a page number but it does say "Health authorities recorded a 30% increase in ambulance call outs across NSW, and hospitalisations for respiratory issues rose by 25% in early December 2019."

The CHAIR: Dr Barnden, did you have any final points that you wanted to make or picking up on any of the questions that have been asked in the last few minutes, just to wrap it up?

Dr BARNDEN: I guess my only comment would be about the additional hospital admissions, perhaps additional mortality from our perspective as obstetricians and looking at effects on pregnancy. We are looking at perhaps somebody who might have a premature death in 30 or 40 years because of bushfire smoke in utero now, and that it something that is never really going to be picked up on, but it is something that we do need to consider.

The CHAIR: Doctors, all three of you, thank you so much. It has been great to have your expert evidence this afternoon. The submissions in and of themselves are of a high quality, but it has been great to be able to ask you some very specific questions, and your answers have been very precise and clear. Arising from reading the *Hansard*, members may have some supplementary questions that they would like to ask of you. What we normally have is an arrangement of a 21-day turnaround time where our secretariat will liaise with you individually or collectively regarding additional questions and if, you are agreeable to them, if you could provide the answers back to us for that, and that will be incorporated into the evidence to the inquiry.

Once again, on behalf of the Committee, thank you very much, and on behalf of the Parliament, thank you for the great work that you do as medical professionals. It has been a very challenging time for us in New South Wales and in Australia and the world certainly in the last number of months, and the medical profession have been at the very forefront of providing the care and support and the needs we have had to have met because of the events that have been occurring. So thank you very much.

(The witnesses withdrew.)

The Committee adjourned at 14:35.