

**From:** Stephanie Trotter

**Sent:** 07 September 2020 08:50

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**Subject:** Submission to Ofgem for RII0-2 and reply to response to CO-Gas Safety's FOI request

#### Dear Ofgem team RII0 – 2 please note

I am sending this email both as a response to the response made to the FOI request we made and also to be considered as part of our response to the Consultative Document attached in answer to question 1.

I also include answers to the questions in the Consultative Document RII0-2 Draft Determinations that I have made to questions 1-14.

Dear Jonathan, Rebecca, Matthew, Peter, Mary and Steve,

Thank you for the timely response to the charity's questions under the FOI Act, which I attach for your convenience. I am writing this as part of our submission to the Consultative Document

The independent, registered charity CO-Gas Safety was launched at the House of Commons in 1995 and its aims are to prevent deaths and injuries from carbon monoxide and other gas dangers and help victims and their families. We would be happy to answer any questions whatsoever, for example about our funding.

#### **Background to the Issue**

The charity has lobbied for two main changes since 1995.

These are:-

1. Awareness of the deadly gas carbon monoxide which can be emitted from any faulty heating or cook appliances powered by any carbon based fuel and how to prevent poisoning and
2. That the gas emergency service carry and use equipment to test gas appliances for CO.

These ideas came from talking to victims/survivors and families within weeks or months of the launch of the charity in January 1995.

In January 2000 CO-Gas Safety made a presentation to the HSE during which many victims spoke and told the HSE officials about their experiences. I attach our booklet dated February 2000 in which the accounts by victims and a chimney engineer made that day are included. In our opinion, these accounts visibly moved the HSE officials.

In August 2000, HSC/E made recommendations that reflect what we lobbied for. Time went by and we heard that the Chair of the HSE had a breakfast meeting with the gas suppliers who lobbied for the recommendations to be dropped. As far as we know neither CO-Gas Safety nor any other consumer or victim representatives were invited to this meeting. This seems extremely undemocratic and unjust. Sadly, these recommendations have not been implemented. We are told that things have changed but we see little evidence of this and consider that the basic needs for awareness and testing of gas appliances or at least the air when they are lit, are still very much needed, perhaps now even more so due to Covid-19.

Ofgem is allowing the gas distribution networks £30 million from April 2021-6 we were told to be spent on vulnerable consumers and CO.

How this is to be spent seems to largely be up to the four GDNs.

Considerable more millions seem to be available from Ofgem for 'innovation projects'.

With regard to Ofgem's energy network price control 2021-2026:-

1. '£25 bn with potential for an addition £10 bn or more is proposed for a five year investment programme to transform Britain's energy networks to deliver emissions-free green energy for GB.'
2. 'The fight against climate change means our energy system needs to change quickly and dramatically.'  
Allowing old, inefficient, gas appliances which have not been properly serviced to pollute the outside air, adds to climate change.
3. 'We plan to set (the GDNs) tougher targets for customer service, safety reliability and going further faster on green energy.'

Ofgem has a duty 'to protect the interests of consumers in relation to gas conveyed through pipes'.

Ofgem also has a specific duty with regard to vulnerable customers, although Ofgem has agreed that all customers, however wealthy or adequate, are vulnerable to CO.

In our opinion changing our energy system means attitudes of consumers need to change too.

Finding CO indoors and publicising this would persuade or nudge customers to change to greener energy.

We have many examples of people who have died of CO or been injured by it who are not elderly, poor or otherwise vulnerable, for example Zoe Anderson, aged 24, the daughter of Chris Anderson of TED talks who died of CO in England in 2010.

**The charity has urged and continues to urge Ofgem to encourage or insist that the GDNs use whatever funds it has available to provide more awareness of the dangers of carbon monoxide (CO) and other products of combustion and to test gas appliances for CO by the gas emergency service.**

In a recent FOI, request, speedily responded to by Ofgem, Ofgem concluded that there is **insufficient justification for extending the role of the gas emergency service.**

In coming to this conclusion, Ofgem seems to have failed to formally consult charities such as CO-Gas Safety other than, for example, in a casual way during meetings at APPCOG. Ofgem has not

invited CO-Gas Safety or other victim based groups, such as the Katie Haines Memorial Trust, to provide evidence with regard to this £30 million and further funds available, other than with regard to the Consultative Document.

Nor has Ofgem consulted with HSE which surely under the MOU, it is required to do? I attach the MOU for your convenience.

HSE is equally at fault, or more so, with regard to its failure to consult with Ofgem. We sent a FOI request to Ofgem which was answered promptly. However, we only received a response from a similar request to HSE on the 29.07.20 after we had sent a reminder about our FOI request made on the 02.06.20. I attach this response for your information.

I have set out further background and information in some detail below but start with a summary.

### Summary

**The purpose of this submission is to provide evidence of justification for the need for awareness of the dangers of carbon monoxide (CO) poisoning & how to prevent it and also the need for the gas emergency service to test for CO as part of their duty with regard to vulnerable consumers.**

This email should be considered under number 1 in the questions put by the CD.

1. How can ordinary people protect themselves against a deadly gas which cannot be sensed using human senses, without widespread awareness of those dangers and how to prevent exposure?

2. Furthermore, if people are concerned about their gas appliances, how can they establish whether or not they are being exposed to CO except by free and/or at least available testing the emissions from gas appliances (or at least the air after such appliances are switched on)?

Such testing should be not only of the person. This is because CO leaves a survivor's blood or breath quickly, so carries the danger of a false negative with the survivor being sent home possibly to die of CO. It is surely more reliable to test the emissions from the gas appliances?

Although CO-Gas Safety has been raising this issue for over 25 years, Ofgem may not fully appreciate that it is almost impossible for an ordinary person to obtain a test of appliances (and therefore proof) of CO even for their medics or families. There is a qualification of Registered Gas Engineers, called CMDDA1 which enables a RGE to test for CO. However, how would a survivor know this?

The Gas Safe Register's inspectors can test for CO where work has been done in the past 6 months by a RGE. However:-

1. What about those who have not had work done within the past 6 months by a RGE?
2. The GSR's inspectors will not test an appliance in a rented property for CO without the landlord's permission. Please see attached GSR's policies 8.2. and 8.5. 8.5 basically encourages the householder to allow the RGE who may have done poor work to put that work right thereby destroying any evidence of CO.

Without such a test by the gas emergency service, a possibly brain damaged survivor is left to obtain the services of a Registered Gas Engineer to repair the appliance, which destroys any evidence of CO which would be helpful for medics, the NHS, employers and family members. The utter misery of this lack of proof is to be found illustrated by our 'Comic' strip pages 1 & 2 attached.

There is no check even made on that survivor to make sure that they have obtained a service from a RGE.

**How can Ofgem justify not making/persuading the gas emergency service test gas appliances for a deadly gas that can't be sensed using human senses, can kill or maim in tiny amounts and that many people haven't even heard of, let alone know how to prevent?  
Especially as HSC/E recommended both a levy on the gas suppliers to raise awareness of the dangers and that the gas emergency service must test for CO in 2000?**

### **Covid-19**

Symptoms of CO are similar to those of any virus, including Covid-19. However, unlike Covid-19, (at the time of writing at least), CO is easy to test for (so prevent future poisoning), immediately by testing the air and the emissions from cooking and heating appliances.

A further issue with regard to Covid-19 is that air pollution raises the death risk from Covid-19. Please see the Times, July 14<sup>th</sup> it was reported on page 11 that 'Air pollution found to raise Covid death risk' <https://www.thetimes.co.uk/article/air-pollution-found-to-raise-covid-death-risk-czm0jqfm6>. However, so far carbon monoxide has not been featured but we are very well aware of just how ill those exposed to CO become.

Furthermore, Brits spend over 90% of their time indoors where air is much more concentrated <https://road.cc/content/news/217728-brits-spend-92-all-their-time-indoors>. Therefore, it is surely vital to be able to test the air indoors and the emissions from gas appliances?

From the respected university research and indeed from a trial undertaken by Northern Gas Networks in 2011-12, CO seems to be widespread. Therefore, why isn't testing the emissions from gas powered appliances for CO undertaken by the gas emergency services?

**The need to test gas appliances for CO was described by our Patron Lord Hunt of Kings Heath at one of our events at the House of Lords, as a 'no brainer'.**

Professor Mark Edwards of St George's has supported testing gas appliances, please find attached.

An EDM tabled by Colin Breed MP in 2007 obtained the support of 121 MPs, including that of two members of APPCOG, Peter Bottomley MP and co-chair Barry Sheerman MP, please find attached.

Our 'Comic strip', pages 1 & 2 attached, illustrate the plight of survivors who are exposed to CO and seriously affected. We ask Ofgem to read the two pages of pictures and words, one of the winners of our poster competition kindly drew for us at our request.

**Capital cost of testing by the Gas Emergency Service - estimate £1.5 million.**

**Annual cost £0.5 million.**

Annual cost of victim support guesstimated by CO-Gas Safety £2.5 million.

The cost of providing testing is very low when considering the cost to the taxpayer of the known deaths and injuries (£178 million) and the allowance Ofgem is making of £30 million and far more millions under the innovation scheme.

**Why is such an obvious benefit to survivors, the NHS and the taxpayer being ignored?**

**Why is this unjust situation allowed to continue?**

While we appreciate that Ofgem may not have the power to impose a levy on the gas suppliers we are asking Ofgem to do what it can to implement the spirit of the HSC/E's recommendations, which are still so vital.

## **End of summary**

## **Further information**

### Why is the charity lobbying for testing?

The charity's view is that testing for carbon monoxide (CO) and providing parts per million of CO found in writing or digitally to those exposed would help the medics & NHS treating survivors to provide correct medical treatment, as well as helping those exposed and their families to understand the true cause of their injuries.

Such testing and proof of CO, where found, would also raise awareness of the dangers of carbon monoxide amongst the gas industry, the medical profession and the general public.

This awareness would also prevent further poisoning and death as well as save the NHS funds by providing the wrong treatment to those who have suffered long term damage and injury, sometimes brain injury as a result of CO.

### Practicalities and cost

Guesstimate

Approximately 3,000 First Call Operators each equipped to have a flue gas analyser at a cost of approximately £300 per person = £900,000.

Cost of calibrating per analyser = £100 per year x 3,000 = £300,000

So capital cost, say £1 million to £1.5 million to make sure costs are covered.

Annual cost of £300,000 to £500,000 to make sure costs are covered.

If CO is found, then the parts per million from a sweep test or test of emissions from individual appliances could be automatically uploaded.

It could be argued that extra time would have to be spent by the FCO in turning on the gas, relighting the appliances and undertaking a sweep test and that is probably true. A pilot project would assist in this. Perhaps however, it might prove more efficient to relight and test gas appliances because consumers would find this very reassuring; therefore in those cases where reassurance is required, perhaps testing would be quicker. At the moment, half an hour is allowed although in practice FCOs mostly turn off and leave in a few minutes.

Possibly extra time would have to be found in some cases so perhaps an extra £1 million would cover this. If data was uploaded automatically, this would become a valuable reliable data source, easily obtained.

However, a further allowance might have to be made by Ofgem to persuade the GDNs to cooperate.

A leaflet and/or information would have to inform the consumer how to obtain a full test and investigation of each appliance and/or a service. CO-Gas Safety could help with writing such a leaflet and providing this information. Please find our existing leaflet attached.

Those people badly affected would need a full investigation which might involve the HSE. Investigations by the HSE are generally only undertaken if there is a death from CO. Also, the HSE's investigation is concentrated on prosecution rather than gathering of evidence of exposure to CO to help the medics provide the right treatment and for a possible claim for damages for personal injuries. The HSE investigation is also privileged until all issues of prosecution are finished,

sometimes at least three years after exposure. Obviously, such a report or even prosecution is helpful to a survivor but is usually deficient with regard to issues the survivor needs investigated.

Ideally, there would also be a body that could fund those who can't afford such an investigation and provide victim support in the way we do. Such a body would have to be properly set up and funded.

**However, even if this was not provided, the basic sweep test\* and data would be a huge step forward and the cost of this is surely negligible.**

**So how can not doing this be justified?**

\*which tests the air in the room after the gas appliances have been relit and put back on as opposed to testing the emissions of each individual appliance.

### **Justification – background and evidence**

#### Legislative background Gas Act 1986

Ofgem has F4AA1 'a duty to protect the interests of [F5 existing and future] consumers in relation to gas conveyed through pipes'.

I have attached the relevant part of the Gas Act 1986.

Ofgem 'shall have regard to the interests of—

(a) individuals who are disabled or chronically sick;

(b) individuals of pensionable age;

(c) individuals with low incomes; and

(d) individuals residing in rural areas;

but that is not to be taken as implying that regard may not be had to the interests of other descriptions of consumer.'

In other words, (a) to (d) above are merely examples, not restrictive definitions.

In discussions with Ofgem it seems we are agreed on the legal issues in that everyone is vulnerable to CO.

Please let us know if Ofgem disagrees and if so, why.

Ofgem's response with regard to our opinion that Ofgem should require the gas emergency service to test gas appliances for CO, is that there is no justification for this.

**We ask under the FOI Act how Ofgem can possibly have come to this conclusion without even consulting the HSE, let alone discussing this issue with CO-Gas Safety and other interested groups and individual survivors?**

#### Brief background about carbon monoxide

CO can be emitted by faulty cooking or heating appliances powered by any carbon based fuel that burns (gas, coal, oil, petrol, wood etc.).

CO cannot be sensed using human senses but needs specialist equipment to test for CO.

Less than 2% of CO in the air can kill in between one and three minutes.

[http://www.hse.gov.uk/foi/internalops/hid\\_circs/technical\\_osd/spc\\_tech\\_osd\\_30/spctecosc30.pdf](http://www.hse.gov.uk/foi/internalops/hid_circs/technical_osd/spc_tech_osd_30/spctecosc30.pdf)

see Para 74 table 23 page 26

*'12,800 ppm Immediate effect, unconscious after 2 to 3 breaths, danger of death in 1 to 3 minutes'*

Fire fighters describe this as three breaths, the first, you do not realise there is anything wrong, the second breath, you suspect there might be something wrong but by the third breath you are not capable of taking action.

Yet the gas emergency service does not use equipment to test gas appliances for CO!

Note. The lack of 'justification' was cited by the gas distribution networks (GDNs) when we argues that all First Call Operators be provided with personal alarm monitors for CO (PAMs) yet they finally did so provide PAMs or their equivalent. Please read attached the case study of FCO, John Courtney.

We have heard that the GDNs are surprised at how often their monitors sound. This is particularly interesting because when the customer telephones the gas emergency number 0800 111 999 the consumer is told to turn off, open the windows and get out of the building. Therefore, by the time the First Call Operator arrives, any CO present in the air will have usually disappeared.

We have asked for the data collected by the GDNs to be shared and made public, but other than a very useful study by Northern Gas Networks, this has not been forthcoming.

### **1.Accounts from victims/survivors and their families which amount to evidence of why simple steps could prevent these tragedies.**

Quite quickly after launching, we found that the industry was reluctant to talk to us. However, the victims/survivors and their families were more than happy to talk to us. Within weeks or months some common denominators had emerged.

Families, especially those who had lost children typically said, 'We didn't even know what carbon monoxide was so how could we protect our child?' This was the most common comment and led us to putting forward awareness of carbon monoxide, how quickly tiny amounts can kill or maim and how to prevent CO, as the most vital action to take.

In 2005 frustrated by the lack of action by both industry and government, we launched a schools' poster competition to raise awareness of the dangers of CO because although we lobbied for prime time TV warnings, this competition was the only thing we, as a tiny charity with almost no funds, could afford to do.

Survivors of the poisoning told harrowing stories about the attitude of the medics and the medical treatment they received. Basically, survivors told us that medics don't know anything about CO or very little. We have heard that doctors only spend about 20 minutes of their training on poisoning in general and CO is hardly mentioned. Survivors were often told they were imagining very severe injuries, including brain damage. Survivors were often sent to psychiatrists yet amazingly they were usually sent back with comments such as 'this patient is obviously under severe stress but does not need me – please look for a physical cause'.

Often the survivors' own families did not believe them, although in my considerable experience of talking to people who've been poisoned for over 25 years, it is usually the women who are not believed by their partners. However, I have come across one or two men where this occurred.

Survivors have told us that the lack of belief is even worse than the lifelong injuries, they've been left with.

Employers do not tend to believe their employees. This may be understandable but naturally provides further distress to survivors.

### Why is there this disbelief?

This is due to lack of awareness of the dangers of CO and also to lack of testing of the air or the gas appliances for CO. It's Catch 22; without proof of CO, government and industry can say there isn't a

CO problem. Please see my article\* published in the New Law Journal based on over 25 years of experience, about how difficult it is for those suffering from carbon monoxide to prove CO even to obtain the correct medical help, let alone make legal claims that would lessen survivors' claims on the taxpayer and ensure that those causing the damage, pay.

\*<https://www.newlawjournal.co.uk/content/co-the-hidden-dangers>

Please note that this is supported by Debra Morris of Affinity Law who is quoted in the article.

Please also see attached the letter of Madelene Holdsworth, Senior Practice Director, Slater Gordon solicitors <https://www.slatergordon.co.uk/our-experts/madelene-holdsworth/>

## **2.Recommendations by HSC/E in 2000 yet never implemented**

In January 2000 we organised a presentation to HSE and seven survivors or families attended and gave their accounts on the 27<sup>th</sup> January 2000. Please see attached 'yellow booklet' which also contains the story of Lindy Maher with regard to the tragic death of Gary Maher and serious injury to Sheree Maher while abroad in Tenerife. Gary was Molly's son and Lindy, her daughter. Sadly, Molly died in April 2020.

The HSE officials who attended in January 2000 seemed deeply moved and we considered that this presentation was pivotal in the recommendations made in August 2000. I attach a nutshell and relevant extracts from the original recommendations.

The recommendations were made as a result of a fundamental review into gas safety and were made with the support of the majority of the stakeholders, who were largely industry, but the majority was not made up only of big corporate gas suppliers.

However, we heard some time after the recommendations were published in August 2000, that Bill Callaghan, Chair of the HSC/E had a breakfast meeting with the gas suppliers. CO-Gas Safety was not invited; nor were other groups interested in prevention or survivors.

After that meeting it seemed to us that the recommendations were quietly dropped and then later treated as 'old hat' or unnecessary. If only that were true!

## **3. Endless committees**

Vigil was set up by Sue Slipman, then of the Gas Consumers Council. No action was taken.

Work Groups set up by HSE after the recommendations were made. CO-Gas Safety had to lobby hard to even be included. Again, no action was taken.

COCAA set up by the Gas Safety Trust. Again, no action was taken.

**Stakeholder group set up by Baroness Finlay, who made some excellent recommendations in 2011 (please find attached with CO-Gas Safety's comments in blue) but again, most of these have not been actioned.**

APPCOG has continued until now but in our opinion, little legislative action has been evident (EDMs, private members' bills etc.) and despite activities in the form of meetings, research, recommendations etc, very little has been actioned.

## **4. Cost of deaths and injuries fall on to taxpayer and victims/survivors not the industry.**

This present situation surely goes against the accepted mantra of polluters paying.

The cost of the known deaths and injuries is £178 million a year see

<http://www.publications.parliament.uk/pa/cm201314/cmselect/cmcomloc/50/50iii132.htm>



CO-Gas Safety maintains that there are many more unknown deaths and injuries. We have examples of where CO was only found after death more by luck more than by good judgement (e.g. the death of Katie Overton aged 11 ½ and that of Edna Lawrence – I attach case studies).

## 5. (a) Research

We have done what we can to read and study the research that has been published and extrapolate from the numbers found in the small studies to the whole population of the UK. This work by CO-Gas Safety can be found at <https://www.co-gassafety.co.uk/about-co/numbers-affected-by-co/> However, we have found the full original research very difficult to obtain despite frequent requests. We are also aware that we are not statisticians. Therefore, about a month ago we asked a statistician, who has helped us in the past with our data, Dr Craggs, to review this page and the documents we did obtain and we will let Ofgem know when this has been done. Hopefully, Dr Craggs will write a report about this research and if so, we will forward this to Ofgem and HSE for their consideration.

### (a) By UCL, Dr Ben Croxford in 2005

#### UCL's report

#### We attach the report and the press release by HSE.

Ben Croxford's report found that 50 out of 270 homes (18%) had levels of CO, which exceeded the WHO 8-hour average guidelines of 9 ppm. Of this 50, 26 (9.4%) exceeded the WHO 1-hour level (26ppm) and 10 (3.6%) exceeded the WHO 30-minute guideline value of 52ppm.

#### Note

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/families/bulletins/familiesandhouseholds/2017> In the UK there were 27.2 million households in 2017, resulting in an average household size of 2.4. 27 million times 2.4 = 64,800,000.

**3.6% of 64,800,000 is 233,280.**

- 45% of homes had received no information on the dangers of CO; and
- A higher prevalence of problem appliances was found in the homes of vulnerable people (young, old, those in receipt of benefits).

### (b) Study conducted by Liverpool John Moores University in 2011

Further research with similar findings has been undertaken by John Moore's university ([http://www.ljmu.ac.uk/NewsUpdate/index\\_123350.htm](http://www.ljmu.ac.uk/NewsUpdate/index_123350.htm) But this link doesn't seem to work anymore so see <https://www.emeraldinsight.com/doi/full/10.1108/SASBE-07-2013-0041>) More than 27,000 properties were visited. We have been trying for some years to obtain the full original research.

A study in 2011-12 by JMs measured CO levels in 109 homes over a number of weeks: it found that 24 homes had CO levels greater than 50 ppm (parts per million) – a level in which symptoms of poisoning, such as headaches, tiredness, and drowsiness can be experienced.

<https://www.ljmu.ac.uk/about-us/news/life-saving-research-into-carbon-monoxide> 12.03.2015

The research above was of huge concern but it was looking at relatively small numbers. Obviously, a larger study would assist so the charity was delighted to read from the link above that this was planned. 'The Gas Safety Trust (GST) also awarded a grant to LJMU to expand the study from two city centres to five counties by partnering with five Fire and Rescue Services, Merseyside, Cornwall, Bedfordshire, West Midlands and Oxfordshire. The funding is also supported by an in-kind contribution from the Council for Gas Detection and Environmental Monitoring (CoGDEM) whose

members have supplied CO alarms and data loggers to undertake a comprehensive CO investigation covering 75,000 households.'

### **That was five years ago – where is this research?**

Stephanie Trotter brought this up at an APPCOG stakeholder meeting on 10.03.20 but didn't really understand the response. However, in the minutes it was reported that Chris Bielby, Chair of the Gas Safety Trust stated that progress was being made but it was not yet ready for publication. Considering the serious implications of the existing small studies, we continue to lobby for this study to be finished and to be published.

We have since been told that this study has not been undertaken due to cut backs in the fire service. We are deeply disturbed that this did not seem to be revealed until we questioned this and pursued it. We also consider that due to these avoidable delays and lack of transparency, action should be taken to provide testing now.

Why has this research not been finished when the public was told in 2015 it was already funded by the Gas Safety Trust?

Please note that it is industry which funds the two main gas safety trusts and also Policy Connect which provides the administration for APPCOG, the All Party Parliamentary Carbon Monoxide Group.

### **WHO guidelines for indoor air quality: selected pollutants 15.12.10**

ISBN 978 92 890 0213 4

See page 70 second para from the bottom.

'Walker (130) states that the incidence of chronic carbon monoxide exposure in Great Britain is officially 200 per year, while at the same time "250 000 gas appliances are condemned annually". He speculates that if only 10% of these appliances give off significant amounts of carbon monoxide that reach the breathing space of residents, as many as 25,000 people every year may be exposed to carbon monoxide in their homes. The carbon monoxide support study (89) found that "only one case out of 77 was correctly identified (i.e. diagnosed) on the basis of symptoms alone" and that medical professionals were the least likely group to "discover" the fact of the carbon monoxide poisoning.'

See also at page 12, which provides a table of mean concentrations over an average time of 10, 15, 30 minutes then 1, 8, 24 hours. This was published in 2014 but refers to WHO 2010.

Pollutant	Mean concentration over averaging time						
	10 min	15 min	30 min	1 hour	8 hours	24 hours	1 year
CO (mg/m <sup>3</sup> )	–	100		35	10	7	–

Using the Lenntech converter – <https://www.lenntech.com/calculators/ppm/converter-parts-per-million.htm>

7 mg/m<sup>3</sup> equals 5.68 ppm (parts per million).

**Guidelines See also page 86**

### **The 24-hour guideline**

‘Chronic carbon monoxide exposure is different from acute exposure in several important respects, as noted above. Thus, a separate guideline is needed to address minimal exposure over 24 hours, rather than the 8-hour period used in the acute guidelines. The latest studies available to us in 2009, especially those epidemiological studies using very large databases and thus producing extremely high-resolution findings, suggest that the appropriate level for carbon monoxide in order to minimize health effects must be positioned below the 8-hour guideline of 10.5 mg/m<sup>3</sup>, possibly as low as 4.6–5.8 mg/m<sup>3</sup>. This is also essential since the minimal exposure time for this guideline is three times longer.’

#### Note to explain these levels

10.5 mg/m<sup>3</sup> = 8.9 Parts Per Million so call it 9 PPM

4.6 mg/m<sup>3</sup> = about 4 PPM

Extract first published in our press pack 2014 pages 6 & 7

The All-Party Parliamentary Carbon Monoxide Group strongly supports the inclusion of carbon monoxide poisoning as a high risk. The All-Party Parliamentary Carbon Monoxide Group’s inquiry, ‘Preventing Carbon Monoxide Poisoning’, heard evidence that carbon monoxide poisoning causes 50 deaths a year, 200 serious injuries, and 4000 minor injuries – which costs the Department for Health in England and Wales approximately £178m a year in medical and care costs, as well as creating immeasurable human suffering.

#### **(c) Study by NGN 2011-2012**

<http://www.northerngasnetworks.co.uk/wp-content/uploads/2015/10/Giving-carbon-monoxide-nowhere-to-hide.pdf>

This was a very helpful study.

NGN have approximately 2.7 (then 2.6) million customers & 200 First Call Operators (FCOs) - nearly 10% of UK's FCOs. FCOs are the people who go into the properties.

NGN trialled 40 FCOs covering 450,000+ customers (16% of their population).

NGN responded to 17,107 (16,216 + 991) suspected cases of CO = 3.8% of population under trial.

We don't know how many homes are occupied by trial's 450,000+ pop. but assume average 2 people per dwelling or 225,000 properties which suggests 7% of homes required a CO test - see

<https://www.statista.com/statistics/281627/households-in-the-united-kingdom-uk-by-size/>

Of 17,000 tests, 62 homes had CO - 0.03% of homes & 124 people under trial.

22 homes tested unknowingly had CO suggesting 0.01% of homes have this problem affecting 44 people under trial.

Extrapolating that 22 / 44 over UK's 28m homes suggests over 2,800 homes & **approximately 6,000 people are unknowingly exposed to unsafe levels of CO.**

#### Questions from CO-Gas Safety

1. Was CO tested for when the FCO arrived or at some other time?

If CO was tested for when the FCO arrived, the consumers would have been already told by the gas emergency line to turn off appliances, open windows and get out of the property so any CO is likely, in the majority of the cases, to have disappeared.

Also, we also don't know what method was used.

It would be very helpful to have these questions answered and have the full information.

We would like a trial testing randomly selected properties where the First Call Operator (qualified ideally as an independent gas expert court witness or at least to CMDDA1) turns the gas appliances back on and tests the air in the property for CO and then tests each individual appliance, if necessary leaving data monitoring equipment and at least one working CO alarm to EN 50291 in the property for several days or weeks. This is much easier to do now and it is possible to monitor such equipment online as well as upload results. However, naturally after over 25 years we want action now to protect consumers and obtain proof of CO where found, rather than yet more research.

#### **(d) Baroness Finlay's recommendations made in 2011**

CO-Gas Safety attaches a copy of these with CO-Gas Safety's comments in blue underneath. Most of these recommendations have not been implemented, yet are very similar to ours. Recommendation 8 is particularly relevant.

#### **(e) Research by Dr Connolly at John Moore's university.**

This research can be found <http://researchonline.ljmu.ac.uk/id/eprint/11785/>

Stephanie Trotter of CO-Gas Safety attended a conference in Lille at which Dr Connolly gave a talk.

Stephanie and Dr Connolly corresponded and have come up with the following for inclusion into this submission to Ofgem.

Dr Connolly has explored the lived experience of 11 participants who are coping with unintentional exposure to carbon monoxide (CO) using Interpretive Phenomenological Analysis. (IPA). A useful definition can be found

<https://hes32-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fen.wikipedia.org%2fwiki%2finterpretative%5fphenomenological%5fanalysis&umid=ba5a5609-f222-4d73-a8cc-a0e6fbaaf71e&auth=768f192bba830b801fed4f40fb360f4d1374fa7c-613204a1857ba3f30071e5d788f36e521d321117>

However, this seems to amount to exploring the lived experience of people who have been exposed to CO.

#### **Background**

There are about 60 deaths a year from preventable CO exposure in England and Wales and those who survive exposure may be injured and have long lasting burdensome sequelae (effects). Most research is from healthcare professionals and not from the point of view of those who have experienced exposure and those who have been bereaved by exposure. People who don't die or who are not rendered unconscious have a very difficult time and there's so little out there about people who have a lower level exposure. Some of those exposed have told Dr Connolly that the fact that medics and sometimes their own families do not believe they have been exposed to carbon monoxide, is even worse than the life long injuries they've been left with.

The data was analysed using IPA where four superordinate themes emerged: 'traumatic experience', 'power justice and judgement', 'identity and connectedness' and 'everybody seems to be in the dark'.

## About CO

WHO guidelines. The 24 hour guideline is obviously the most appropriate for people in the home. This is about 6 PPM of CO.

Participants fell into two broad groups – one group was affected by higher levels of CO over a short period and the other was affected by lower levels over a longer period. Of course, few survivors could ‘prove’ exposure to CO at all, despite having symptoms, sequelae, and/or clear environmental signs that CO exposure had occurred. Nor could they provide measurements in parts per million.

Healthcare professionals who suspect that someone has been exposed to CO often rely on an environmental history (clear information about, for example, a faulty appliance or a generator that has been used inappropriately) as well as looking at the condition of that person and taking a blood test to ascertain the levels of carboxyhaemoglobin. These blood tests need to be taken very quickly once the person is away from the source of the exposure as levels of carboxyhaemoglobin dissipate rapidly.

Another important issue is that CO exposure symptoms can mimic the symptoms of many conditions, including viruses (such as Covid-19), and many healthcare professionals know very little about CO. They will test the blood (or breath) where CO exposure is suspected but they don’t seem to understand the significance of a false negative result in the light of the person’s environmental history and symptoms. Healthcare professionals may not be fully informed and that also applies to members of the public. Nor do healthcare professionals have any recourse to free CO alarms to EN 50291 to give to those who report symptoms similar to CO exposure. Therefore, the only safe step is to obtain a test on the air in the property and the appliances powered by carbon based fuels, plus a CO alarm to EN 50291. Such a test is currently almost impossible for an ordinary person to obtain.

‘In interviewing the 11 participants I observed the added distress caused to the participants by the lack of proof of their situation, which could be provided in the form of ambient air testing, or testing suspected appliances for CO. I find the lack of testing for CO, to which so many people may be exposed while cooking meals and heating their homes is something which should be addressed as a matter of urgency. The lack of proof leads to an assumption that CO is rare, and this contributes to a lack of awareness, knowledge and understanding of this preventable danger.’

### **(f) Cases, the experience of CO-Gas Safety since 1995 and further support for testing gas appliances by the gas emergency service and raising awareness.**

#### The Mills case

In our opinion, death was caused as a result of the First Call Operator not having equipment to test the emissions from the boiler for CO. I attach the signed account.

Gill Wing case study which I attach.

Her doctor failed to take her case seriously partly in our opinion, due to the lack of testing leading to lack of awareness and the arrogance of assuming that the poisoning was her fault when it was the appliance next door.

Sue Westwood <http://www.co-gassafety.co.uk/one-survivors-story/>

Doctors wrongly assumed she had taken cocaine.

The Katie Overton death which I attach.

In our opinion the pathologist didn’t even think to test for CO because of this assumption that CO is rare when we know it’s not. As a result, Paul Overton was suspected of killing his stepdaughter and the rest of the family, two adults and two young children, nearly died of CO ten days later. It was

only after this incident that Paul contacted the police and pathologist and luckily some of Katie's blood had been kept and was then tested and CO confirmed as the cause of death.

Angela Pinkney death – I attach the case study by her brother.

Doctors at the Radcliffe Royal Infirmary didn't even think of CO and sent Angela home to die.

Case study of the late Sandra Smith by her husband Robert Smith.

Sandra suffered for many years as a result of her exposure to CO and she never stopped trying to warn others.

Professor Mark Edwards of St George's.

He supports testing for CO by the gas emergency service.

EDM in 2007 tabled by Colin Breed MP basically urging the HSC/E's recommendations should be implemented and signed by 121 MPs including two members of APPCOG.

The trial by NGN shows that it is practical for the gas emergency service to test gas appliances for CO.

It seems a basic need for prevention for people to be informed of the dangers of CO and how quickly less than 2% of CO in the air can kill or maim.

It also seems very basic to provide a test of gas appliances for CO so that those who have been poisoned can at least be informed and be correctly treated for their poisoning.

We submit that we have submitted ample evidence to show justification. However, if you want to ask our us for any further information or evidence, please don't hesitate to do so.

Please note CO-Gas Safety is an independent, registered charity receiving donations from victims, associated bodies and industry including Kane International, a UK flue gas analyser manufacturer. CO-Gas Safety has person it pays for hours worked, who is responsible for data collection, analysis and publication. All directors work as volunteers and the charity has no CEO.

#### **List of documents attached.**

1. Answers to questions 1-7 to the Consultative Document 'RIIO-2 Draft Determinations Gas Distribution Annex'.
2. Response from Ofgem to our FOI request.
3. Yellow booklet containing the presentation made to HSE officials on 27<sup>th</sup> January 2000.
4. Recommendations nutshell of the two main ones and the relevant original recommendations made in August 2000.
5. MOU between Ofgem and HSE.
6. Response from HSE to our FOI request.
7. Gas Safe Register's policy 8.2 & 8.5.
8. 'Comic strip' pages 1 & 2.
9. CO-Gas Safety's leaflet about CO, latest version.
10. Relevant part of the Gas Act 1986.
11. Case study of John Courtney, First Call Operator for Wales & West Utilities.

12. Baroness Finlay's recommendations made in 2011 as a result of her work for the All Party Parliamentary Carbon Monoxide Group of which she is still a co-chair.
13. Case study of the death of Katie Overton aged 11 and half and that of Edna Lawrence to show how CO can be missed even in death.
14. UCL's research by Dr Ben Croxford.
15. HSE's press release about this research.
16. The Mills' case.
17. Case study about Gill Wing showing her treatment by the medics and their reaction to her exposure to CO.
18. Case study of the death of Angela Pinkney, aged 35 by her brother.
19. Case study of the late Sandra Smith by her husband Robert Smith.
20. Professor Mark Edwards of St George's.
21. An EDM tabled by Colin Breed MP in 2007 obtained the support of 121 MPs.

#### **List of letters of Support**

1. Gas Safety Trust, Chris Bielby.
2. Matt Cole who has worked extensively in the gas industry. He has already sent his letter to Ofgem but we also include it.
3. Jason Perrins of Fireblitz, manufacturer of CO alarms.
4. Madelene Holdsworth, Senior Practice Director Industrial Disease, Military Law and Medical Negligence, Slater Gordon, solicitors.
5. Emma-Jackson Phillips - daughter of a man who died of carbon monoxide poisoning.
6. Frank Brehany – please note that he does not wish his contact details to be made public because he lacks the resources to deal with contacts from members of the public.
7. Jim Kinnibrugh, chimney expert. He is sending his letter direct but we are also including it.
8. Gill Wing, CO survivor.

Yours Sincerely

Stephanie Trotter, OBE (Mrs)

President & Director of CO-Gas Safety

Please note some messages going into junk mail so if no response please text me 07803 088688.

**Press Pack 2020 now available – our 25<sup>th</sup> anniversary edition please see <https://www.co-gassafety.co.uk/wp-content/uploads/2020/02/Final-proof-12-Co-gas-safety-press-pack-2020-IMPO.pdf-18.02.20.pdf>**

Please watch our one minute film about Sue who had carbon monoxide poisoning – could save your life <http://www.co-gassafety.co.uk/one-survivors-story/>



Winner of the Safety Initiative 2017 H & V Awards

From Left to Right:- Host, Russell Kane, Roland Johns CO-Gas Safety, Stephanie Trotter, OBE President & Director CO-Gas Safety, Adrian McConnell representing the GDNs & Presenter is Chris Bielby, Director of Industry Liaison, SGN

CO-Gas Safety is an independent registered charity run almost entirely by volunteers.

[www.co-gassafety.co.uk](http://www.co-gassafety.co.uk)

Company Number 3084435

Charity Number 1048370

If you are having problems getting through to me please either email or phone my mobile or 01983 564516 or possibly 01483 561633 or send me a text with your number and I'll call you back. Thank you. Mob. 07803 088688

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