**Submission to HSE re GSR and re Gas Safety in general**

**I, Stephanie Trotter OBE have run the independent, registered charity CO-Gas Safety since 1995, helped by other voluntary directors, mainly victims and MPs.**

**We have collected, collated and published data of deaths and injuries from unintentional carbon monoxide (CO) poisoning since 1995. We have also done what we could to help victims and their families since 1995. We have lobbied for safety improvements to reduce these unnecessary avoidable tragedies. We continue to undertake this work.**

**Please note that in September 2016 the Woking Coroner found that seven year old Zane Gbangbola, previously healthy, died of CO in 2014 although only 8% carboxyhaemoglobin was found in his blood. I personally do not agree with the finding but it is the verdict of the Coroner. HM Coroner Richard Travers has therefore found that CO is much more dangerous than even we thought.**

**Please note that estimated deaths and injuries from unintentional carbon monoxide poisoning cost the taxpayer £178 million a year.** Please see <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmcomloc/50/50iii132.htm>

1. **Re the Gas Safe Register**
2. Keeping the register

This has greatly improved under Capita.

As well as keeping the register there is also the checking and investigation from time to time. There are of course two types of investigation.

1. The first is simply that as part of the checking process for the register and presumably jobs done are inspected on a random basis. However, in our opinion the process should be made more public and it should be easier for organisations and the public to know how this is done. I don’t know how the normal checking type of investigation is done or why certain people are picked on – is this just random or is it risk based or a combination of both?
2. The second type of investigation is investigating complaints and incidents with procedures for possibly striking registered installers from the register. In our opinion this type of investigation should certainly be separated because GSR receives the registration fee if it doesn’t strike off. Therefore in our opinion there is a conflict of interest in one body doing both of these.

Due to this conflict even the first type of checking should also be done by another body.

1. There used to be a CORGI criteria. Now there are GSR KPIs. These seem to change all the time and are not accessible to the public. It would be very helpful if these KPIs were published and surely they should be accessible by the public? If there are commercial matters in them (e.g. prices), surely these could be redacted?
2. Are standard inspections of gas jobs done undertaken on a random basis? If inspection is not done on a random basis is there some reason for this? Are jobs chosen by the GSR or by the registered installer? If for practical reasons all jobs to be inspected have to be put forward by the registered installer this is another reason why all jobs should be logged (see further at 14 below). If jobs were logged there would be no need to involve the registered installer before or during the inspection (see 14 below). If a job has been done so badly that the job is unsafe and may have injured someone, surely the ‘job’ is a crime scene? Unless and until an inspection is completed it is surely impossible to make a judgement about whether or not the ‘job’ is a crime scene?
3. Are leaflets about CO (e.g. <http://www.co-gassafety.co.uk/wp-content/uploads/2015/12/leaflet-word-version-16-08-16-compressed-for-web-24.08.16.pdf>) given out to consumers on inspections? If not this is an opportunity to raise awareness which is not being used at the moment so please could this be done with perhaps the Gas Safe Charity funding this?
4. In what circumstances are investigations into gas work undertaken?
5. If a consumer or installer complains is about a job or registered installer is an investigation always done?
6. In our opinion investigations should be provided for consumers when they ask for them.
7. Do inspections/investigations still require the presence of the GSR installer who might have nearly killed the family? Perhaps because naturally so few officials at head office talk to victims and their families I need to state just how distressing this can be for the family and also how alarming. Allowing the registered installer to be present at ‘the scene of the crime’ also provides an opportunity for the evidence to be changed or lost. Even if the evidence is not changed, there is the issue of justice not only being done but being seen to be done. If the registered installer is allowed to be present could this please be changed? If the HSE is not willing to change this perhaps at least the investigation could be adapted in some way so the family has their own expert there too? Also, could the whole visit be filmed to ensure that the evidence is not changed?
8. Can other GSR installers report other firms to GSR for investigation on a confidential basis? Would this be possible? I am always being told of poor work done found by good gas safe registered installers and indeed the gas magazines often feature these. Such good installers feel impotent and angry about a system in which they say that they are trying to raise standards but there are many installers who don’t know what they are doing and are putting the public at risk. I have come across many installers who don’t know the difference between CO and CO2 or who confuse the two and/or who don’t realise that CO can be emitted from fuels other than gas. This is simply not good enough. To improve this and as a result of the death of registered gas installer, Matthew Nixon in 2000 from CO from using a petrol generator to power his tools indoors, we have created a course see <http://www.co-gassafety.co.uk/information/trainers-of-gas-installers/> Please note that Matthew had been in the gas industry for 6 years.

This is not an isolated incident as the deaths of Kelly Webster, 36 and Lauren Thorntonaged,10 in 2013 as a result of work done on a petrol generator on a boat on Lake Windermere by registered gas installer Matthew Eteson, have sadly proved. Please see <http://www.dailymail.co.uk/news/article-2302743/Lake-Windermere-deaths-Kelly-Webster-36-daughter-Lauren-Thornton-10-die-boat-faulty-generator.html> This was also a tragedy for Matthew Eteson and in our opinion amply demonstrates the lack of proper awareness of the dangers of CO by the general public as well as the poor training about CO for registered gas installers.

Could HSE please support our call for better training about CO from all fuels?

1. When inspectors from the Gas Safe Register inspect or investigate jobs, do the inspectors test each gas appliance for CO as a matter of safety? If so and if CO is found, do the inspectors provide Parts Per Million (PPM) of CO in writing to the consumer? Victims need PPM of CO for their doctors so they are not wrongly diagnosed and given the wrong, sometimes harmful treatment. If no CO is found it would also be helpful if this finding was put in writing and given to the consumer.
2. In our opinion, the GSR should be able to insist on Public Liability Insurance for all registered installers and operatives for the sake of everyone concerned. This would require legislation.
3. Appeals against being struck off are possible for the registered installer.

Is there any possible appeal by the householder or consumer who doesn’t agree that the registered installer should be allowed to remain on the register?

For such an appeal the householder or consumer might need someone to represent them. This could be the independent expert who was present at the investigation (see para 8 above) who could put the family’s side to the panel concerned with striking off. Please note that at the moment such an expert costs at least £2,000.

1. **Registration of firm not operator.**

Rules of registration clearly apply here and operators must be listed on the register– this is good. Christine Bridge of HSE kindly sent me the rules of registration so I can see that this now carries much more weight than we had thought. However, with regard to the legal profession, both the solicitor and the firm have to be registered and so both could be struck off. Solicitors can’t directly cause a death or injury through their negligence but registered installers obviously can do so. Therefore it seems more important that both are registered.

I am still not sure how the gas registration system works at the moment for example what happens if an individual fails his assessment but continues to work for a registered firm? I have received information from Christine Bridge that failures of assessments are not received but that a pass is necessary for renewal. Therefore it seems possible that those who fail the assessment can continue undertaking gas work, at least until their previous assessment runs out.

We still think it would be better for both the firm and the individual to be officially registered (because it is possible for the firm to put unreasonable pressure on an employed operative) but this would almost certainly require legislation.

1. **Wouldn’t it be an improvement to the whole system if registered installers and individual installers had to show their registration number to the consumer before the work was commenced?** In this day and age surely such numbers could be put into an iPhone and checked by the consumer? **Surely registered installers (and we hope in the future the individual operatives/installers) could be given QR codes and this could be scanned by the consumers’ iPhone and the process could also log the job automatically?**
2. **In our opinion maintenance should be registered**. Perhaps maintenance could be registered with the GSR rather than the Local Authority as installations are registered. This could be done really easily now via iPhones as per 14 above. This would increase accountability and therefore improve safety.

We suggest that there should be a duty to scan the QR codes as a condition of registration plus an incentive to assist sweeten the pill, e.g. the registered installers and operatives with the most scanned jobs plus the most praise from customers as well as being checked for safe work, are automatically being put forward for an event to compete for ‘registered firm of the year’ and ‘registered operative of the year’ with a holiday in the Caribbean for four as a prize for each, perhaps sponsored by a manufacturer?

If the above cannot be done then at least there should be more recognition of installers. There should be more events where registered installers are listened to and rewarded. This would have to be carefully handled because of the danger of conflict of interest but perhaps the GSR could persuade the wealthy charities (GST or GSC) or manufacturers to pay for and organise this event? Such appreciation would in our opinion mean that the GSR was also appreciated and not seen as simply a money making machine which is how so many registered installers have told me they feel about the GSR. This is something they moan about to consumers which in our opinion leads the whole system into disrepute. We would really like to see the registered gas installers take pride in their work, training and registration. Their work is extremely important and our lives are in their hands. In my opinion their work is far more important than that of lawyers or accountants who merely have our money or possibly rarely our liberty in their hands, but never directly, our lives.

1. In our opinion technical guidance/mentoring is essential for reference for all registered installers but especially new registrants who will be very likely to need advice on old appliances. Does this exist?
2. Are there any rules on apprenticeship, e.g. the length of time an operative should be apprenticed for? If not, in our opinion there should be.
3. Is there any evidence that there is more dangerous work done by operatives who are new to the job or who have had no apprenticeship or a very short apprenticeship?
4. If there is no evidence, in our opinion it would be helpful if faulty gas work was studied and evidence of the cause of safety problems, obtained.
5. In our opinion there is an urgent need for an improvement with regard to accessing gas safe registered installers qualified under CMDDA1 to investigate fumes and/or investigations undertaken by independent court witnesses, expert in gas.
6. Could HSE please undertake a mystery shopper exercise to find someone qualified under CMDDA1 to test for CO and leave Parts Per Million in writing with the householder because even a solicitor, Debra Morris, found this almost impossible.

Debra Morris of Barratts Associate Solicitor

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I know from experience of talking to victims of CO poisoning since 1995 that some people who have been poisoned are often so damaged that they cannot even write letters and emails even those who are highly intelligent and educated.

1. The 5 year assessment.

In our opinion there is too much time between assessments particularly with new appliances etc. coming onto the market. Updates could be provided via email and perhaps meetings every month or two, with assessments every year to enable the courses etc. to be much shorter and cheaper. Could this be subsidised by the fuel industry? At the moment installers have to take time off work to be assessed every five years as well as pay for this.

It seems to CO-Gas Safety that installers bear the brunt of all the costs of safety as well as most of the responsibility, yet have no power and are mostly ignored if they try to make any representations (or so they tell us). Energy suppliers and manufacturers may also have their problems but they don’t tend to want to talk to us!

1. The GSR and/or the body that carries out the inspections and investigations should owe a legal duty to the public. This almost certainly would require legislation. However, this would in our opinion improve the status of the GSR and the opinion that most registered installers have of the GSR.
2. **More general points about carbon monoxide and gas safety**
3. Why is it that only installers of gas have to be registered when there are more deaths per user from CO caused by other fuels?\* This would require legislation.

*\*See page 27 of our 2016 press pack* [*http://www.co-gassafety.co.uk/wp-content/uploads/2016/01/Press-Pack-2016-final.pdf*](http://www.co-gassafety.co.uk/wp-content/uploads/2016/01/Press-Pack-2016-final.pdf) *We are about to bring out a new press pack 2017 but the proportion is the same.*

1. There needs to be increased awareness of the dangers of carbon monoxide poisoning and other gas dangers and this awareness should be paid for by a levy on the industry. A levy on the gas suppliers to pay for raising awareness and for research was recommended by HSC (now HSE) in 2000. CO-Gas Safety has lobbied since 1995 for such a levy on the whole industry for increased awareness and for these warnings to be prime time TV warnings backed up by social media, websites, victim support and research.
2. We suggest that the law should require annual servicing of all appliance powered by all carbon based fuels. This would of itself raise awareness, improve safety, prevent deaths and injuries from CO+ (i.e. CO and the other products/toxins produced as a result of combustion see <http://www.co-gassafety.co.uk/about-co/other-toxins/> ).
3. In our opinion cut off systems with automatic notification of emergency services perhaps should be fitted that alert the emergency services to emissions of CO. This would greatly reduce deaths and injuries. Cut off systems are available.
4. In our opinion, HSE needs to flag up carbon monoxide and gas safety with Ofgem. This could be done easily and cheaply if only the HSE would raise this and might make all the difference to Ofgem’s attitude and therefore to action on gas safety. Why did N. Ireland’s regulator ring fence funds to raise awareness resulting in prime time TV warnings yet Ofgem’s CEO won’t even see us? Please see our email to Dermot Nolan Ofgem’s CEO dated 04.06.16.
5. We have been saying since 1995 that the gas emergency service should carry and use equipment to test gas appliances for CO. This was also recommended by HSC (now HSE) in 2000. The reasoning behind this idea is until a test for emissions is undertaken using analysing equipment, how can anyone know whether or not there is an emission of a deadly gas that cannot be sensed using human senses, yet of which less than 2% 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/spctecosd30.pdf*](http://www.hse.gov.uk/foi/internalops/hid_circs/technical_osd/spc_tech_osd_30/spctecosd30.pdf) *see Para 74 table 23 page* *26).*

In my opinion there has been a resistance from the industry to the use of analysing equipment. As a consumer who has talked to victims and their families for over 22 years about carbon monoxide poisoning, I just do not understand this. 26(9) of the Gas Safety (Installation and Use) Regulations is perhaps the root of the problem. Reg. 26(9) to me produces almost comical results were it not that the way things are done causes tragedies (e.g. the Mills case when Gerry Mills died a month after a visit from the emergency services, who wrongly suspected the safe appliance and didn’t test appliances using equipment such as a flue gas analyser). It seems to us obvious that analysing equipment will not take over the skill and judgement of gas installers and operatives but is surely a hugely valuable tool that should be used at every opportunity? Yet the Luddite attitude persists. Is the real reason for this persistent refusal to impose use of analysing equipment particularly by the gas emergency service because without such proof of CO, landlords and members of the fuel industry escape accountability due to the fact that the burden of proof is on the claimant? HSE made the correct recommendation that the gas emergency service carry and use equipment to test gas appliances for CO (in order that a dangerous appliance emitting CO could be identified) but no action has been taken by Government. HSE seems reluctant to press home their excellent recommendation. Why? Perhaps technology has come up with another way, see 27 above. However, it will no doubt be decades before all homes are fitted with such a device unless fitting such a device was made mandatory by legislation.

First Call Operators do now all have Personal Alarm Monitors for CO to protect employees as far as we know. However, as most consumers turn everything off and open the windows as they are told to do when they ring the gas emergency number the chances of finding CO is hugely reduced. Even so the Gas Distribution Networks have been surprised to find that their PAMs have alarmed. However, the existing procedure, while protecting employees and perhaps picking up odd incidents (e.g. unsuspected wood burner or CO from next door), does not identify which appliance, if any is emitting CO. There is also no rounding of the circle to make sure that consumers have obtained the services of a Registered Gas Installer to check/service the appliance. Some (Northern Gas Networks\*2) carry and use Flue Gas Analysers which is great improvement. In our opinion PPM of CO if found should be provided to the consumer in writing by the FCO.

*\*2 Please see* [*http://www.northerngasnetworks.co.uk/wp-content/uploads/2015/10/Giving-carbon-monoxide-nowhere-to-hide.pdf particularly at page 4*](http://www.northerngasnetworks.co.uk/wp-content/uploads/2015/10/Giving-carbon-monoxide-nowhere-to-hide.pdf%20particularly%20at%20page%204)*. This is very hopeful*.

1. We have been told that HSE takes very little or indeed no action on RIDDOR notices. In our opinion this brings RIDDOR notices disrepute and may mean that fewer RIDDOR notices are issued or properly filled out etc. Surely a registered installer who fills in a RIDDOR notice should be informed about what action has been taken by HSE? Surely also there should be a check undertaken to make sure the consumer is safe?

There seems to be no legal requirement for the HSE to take action on a RIDDOR. Surely the law should be changed or at least HSE for the sake of its own reputation should recommend that the law be changed?

1. In our opinion there need to be more prosecutions of illegal work, negligent registered installers and landlords. There also needs to be more funding for the HSE to do this. For the sake of its own reputation, surely the HSE should recommend this?

There were only 9 prosecutions of landlords last year according to

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1. In our opinion most agree that training needs to be improved and a good apprenticeship is essential. It would be helpful to undertake research on what a ‘good apprenticeship’ amounted to (see 17 & 18 above).
2. Are examinations and assessments honest and independent? In our opinion there should be spot checks and secret cameras as shown on TV in a recent report in the media of people having to pass English tests.
3. In our opinion there should be more opportunity for victims to provide input into the GSR. The fact that there are so many victim based organisations all working as volunteers should surely convince the HSE of this need.
4. In our opinion there should be help for victims but not from the GSR. The first thing victims need is for the ‘scene of the crime’ to be preserved (other than to turn the gas appliance off or disconnect the appliance). Secondly victims need gas experts, legal experts and medical experts. These tend to be almost impossible for victims to find and a body should be set up and properly funded by the whole industry to help victims to do this.

Then there is the issue of payment for the investigation. Consumers may need to sue and recover damages. Otherwise the results of negligence are paid for by the taxpayer.

Of course the best outcome for everyone is that awareness of the dangers and proper training and accountability mean no consumer is injured or dies so there is no need for legal action.

The Gas Safety Trust and Gas Safe Charity are well funded but victims tell me that I am the only body with a telephone number on the website who responds. Surely there should be more help for people who have been poisoned by carbon monoxide or other gas dangers than a person who has been running a charity as a full time volunteer since 1995, is now aged 67 and whose organisation CO-Gas Safety has no guaranteed funds?

Please note that most consumers can’t even access investigators and most investigations using expert court witnesses cost at least £2,000.

Please note that I helped the Corfu parents with medical help, expert help (Harry Rogers, but the parents had to pay for his investigation) and I recommended Leslie Thomas as their barrister for the inquest. Leslie is now a QC. Without our help, the willingness of Harry Rogers to fly to Corfu to investigate (itself requiring courage), the skill of the experts and the parents’ means and determination, the facts would never have emerged.

If the facts had never emerged how many more deaths might there have been?

In our experience the lack of preservation of the evidence, access to experts and the cost mean that there are many cases where CO cannot be proved in the UK. This means there is a Catch 22 situation which results in the following: without proof of CO, there is apparently no widespread problem with regard to CO poisoning. However, the consequence of this is that when CO has caused an injury or death but cannot be proved, the cost of those deaths and injuries fall on the taxpayer and the opportunity for lessons to be learned and lives saved in the future is lost.

1. In our experience and opinion, it should be recognised that victims are a rich research resource for prevention and victims should be encouraged to put their views to the GSR and HSE etc. I have learned a vast amount from victims and their families and from our data. Research should be funded and encouraged.
2. Data of deaths and injuries are also vital to the improvement of gas safety. CO-Gas Safety has collected, collated and published data of deaths and injuries from unintentional carbon monoxide poisoning from faulty heating and cooking appliances as well as generators, tent lamps and vehicles etc. with regard to all fuels since 1995 but for how much longer? We have lost count of the number of funding applications we have made to the Gas Safety Trust! We made the most applications to the GST because data and research are in the remit they wish to pursue on gas safety. We have also made appeals to Energy UK and was finally allowed to make a presentation to Energy UK December 2015. I will add this presentation to the email I am using to send this submission.
3. There should be ownership of gas safety by one government department. The cross departmental committee has improved hugely but there is no one department responsible for CO and fuel safety and this makes progress very slow and difficult.
4. Black spot detectors should be made illegal because they do not rouse people from sleep or a CO induced stupor and provide a false sense of security. This will require legislation.
5. It should be illegal to sell CO alarms except those recognised by an existing standard such as EN 50291. This will require legislation.
6. Research is needed into natural gas and mercaptan (the odour added to natural gas which has no smell). We have always received complaints about illness and injury from gas leaks not CO. See <http://www.kumed.com/~/media/Imported/kumed/documents/kdhe-20methyl-20mercaptan.ashx> Recently, we seem to have been receiving more complaints but perhaps I have had some time to consider this, but medical experts mostly dismiss even the possibility of injury from exposure to leaks of natural gas.
7. Research is also needed into the products of combustion other than CO. <http://www.co-gassafety.co.uk/about-co/other-toxins/>
8. Landlords’ gas safety certificate. In our opinion this needs to be clarified and amended. This would only require an amendment to the statutory instrument below and so could be done relatively easily if HSE insisted. In our opinion this would really help to save lives. The landlord’s gas safety certificate is widely ignored and derided. See <https://www.theguardian.com/money/2013/may/09/landlords-agents-fail-tenants-gas-safety>

**Proposed Change to:-**

**The Gas Safety (Installation and Use) Regulations 1998**

**Reg. 36**

'Person undertaking the check must either undertake a service according to manufacturer’s instructions or, following procedures outlined in BS7967 part 4 (or succeeding similar standard), use a Flue Gas Analyser or similar equipment complying with EN50379 (or succeeding similar standards) to measure the combustion gasses for PPM (Parts Per Million) of CO and also the CO/CO2 ratio and make and keep a record of those measurements provided they are within the recommendations made by the manufacturer. If the measurements are not within the specifications made by the manufacturer, a full service must be undertaken and checked, using a flue gas analyser or similar equipment as above. Then a record of those measurements must be made and kept. *(Note such measurements using the QR details of the registered installer could be automatically sent to a cloud where it could be kept).*

Person undertaking the check will also ensure that at least one CO alarm to EN 50291 (or succeeding similar standard) is fitted in the property, in an approved position with reference to the standard, is within date marked on the CO alarm and is working effectively.’

We have the support of the Katie Haines Memorial Trust and Holiday Travel Watch. I then sent this proposed to Chris Bielby who said that he would raise this suggestion with the HSE. I have since asked him to support this and to see if the bodies he is chair of (Gas Safety Trust, Gas Industry Safety Group) would support this.

1. We find it difficult to understand why so few of the recommendations made by Baroness Finlay and APPCOG in 2011 and in 2015 have been implemented. I

reproduce both sets of recommendations with comments made at the time by CO-Gas Safety.

Note Documents included with this submission.

1. The questionnaire we submitted to Frontline in 2006.
2. The Power Point Presentation made to Energy UK December 2015.
3. The email we sent to the CEO of Ofgem dated 04.06.16.

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**RECOMMENDATIONS – Summary of recommendations made by the All Party Parliamentary Gas Safety Group inquiry chaired by Baroness Finlay in 2011. Comment by CO-Gas Safety in blue.**

1. The Government should remove VAT on all carbon monoxide alarms.

This could be good but will take time as will require agreement at EU level.

1. Mortgage providers and estate agents should include a declaration that the property has a carbon monoxide alarm and that appliances have been serviced by a Gas Safe registered engineer (or similarly registered for other fossil fuel appliances) within the last year.

Good but CO-Gas Safety is concerned that mortgage providers and estate agents are unlikely to co-operate. We do hope they do co-operate though.

1. The Government should ensure that all work under the Green Deal includes the installation of a carbon monoxide alarm and is carried out by a Gas Safe registered engineer (or similarly registered for other fossil fuel appliances).

Excellent provided similar arrangements brought in for carbon based fuels, other than gas.

1. The Government should ensure that under the NHS contracts for services GPs’ surgeries and A&E departments are trained to recognise the symptoms of carbon monoxide poisoning and have the ability to monitor for it, using the appropriate equipment whenever carbon monoxide exposure is suspected.

Very good but CO difficult to diagnose and medics notoriously poor at even thinking about CO as a possible cause of CO symptoms (The late Dr John Henry sent 200 GPs symptoms of CO. Not a single GP suggested CO as a cause). However, data loggers given out by GPs etc. could be very helpful, provided there are Gas Safe Registered installers, who can find the source of any CO.

1. Industry should collaborate with the Medical Research Council and other research funding bodies to:
2. Support studies that attempt to evaluate the prevalence of carbon monoxide poisoning across different population groups.
3. Set up a longitudinal study to assess the sequelae of acute and low-level exposure to carbon monoxide poisoning.
4. Facilitate a study of the neurological effects of repeated exposure to carbon monoxide at low-levels.

Good but we know CO is dangerous to health. CO-Gas Safety would prefer resources to be spent on prevention.

1. The Government should trial GPs prescribing a Gas Safety Check for suspected carbon monoxide cases.

Good especially if NHS would pay for this where people cannot afford this, but CO-Gas Safety would prefer ‘service’ not just safety ‘check’.

1. The Government should ensure that all coroners’ post-mortems routinely test for carboxyhaemoglobin levels, recording death from carbon monoxide poisoning as a distinct category and to notify this to a central register if a verdict is recorded only in the narrative section of the coroner’s certificate.

Excellent. We have been pressing for automatic testing of dead bodies for CO for years. Notifying a central register sounds good but care would have to be taken to make sure that deaths from house fires and suicide were excluded. (Note added January 2017 A pilot study funded by the GST is being started end of 2016).

1. Gas Distribution Networks should ensure that all Gas Emergency Service personnel are equipped with either personal carbon monoxide alarms, carbon monoxide detection equipment, or both.

Excellent especially if personnel are equipped with flue gas analysers or the equivalent which can test the emissions from appliances for CO and provide parts per million of CO in writing to the tenant and/or responsible person.

1. Ambulance Services should ensure that all their operatives have the equipment to monitor for carbon monoxide in the pre-hospital environment.

Excellent. We hope all emergency service personnel have Personal Alarm Monitors for CO.

1. Retailers selling camping and barbecue equipment, registered campsites and caravan sites should promote the dangers of carbon monoxide and the use of carbon monoxide alarms. The British Standards Institute should revise European standard EN 1860 to include a requirement for a prominent warning about carbon monoxide poisoning as part of the information on appropriate usage.

Excellent.

1. The Government should include carbon monoxide in the home safety module of the Personal, Social and Health Education curriculum.

Excellent. CO-Gas Safety has been trying to achieve this for some years.

1. Ofgem should regularly review and evaluate the effectiveness of the requirement for gas retailers to raise awareness of carbon monoxide.

Excellent. However, we would prefer a levy on the fuel suppliers to pay for prime time TV warnings and/or similar media publicity about CO. (Note made in 2017 – Why can’t we even obtain a meeting with the CEO of Ofgem about this?).

1. The Gas Safe Charity should support an All Fuels Carbon Monoxide Awareness Forum to coordinate cross industry campaigns, share knowledge and to strengthen links.

Good but from as early as 1998, CO-Gas Safety has experienced VIGIL, the HSE work groups and COCAA and while useful discussions took place, in our opinion these meetings took up too much time with too little progress being achieved with regard to awareness being raised and genuine preventive measures being taken to save lives and preserve health. The cost of attending such meetings is high for small charities such as CO-Gas Safety. (Note added 2017 – surely it’s time for action not more talk?).

1. The Government should update the Gas Safety (Installation and Use) Regulations 1998 to:
2. Make mandatory the use of flue gas analysers for installation, commissioning and maintenance, where specified by the manufacturers instructions (and manufacturers should ensure that those instructions. are updated to reflect the latest British Standards).
3. Include a full service of all appliances according to manufacturers’ instructions.
4. Require all rented properties to be fitted with an audible carbon monoxide alarm manufactured to the European standard EN 50921.

Excellent. We have been lobbying for rented properties to have all the appliances owned by the landlord serviced using a FGA rather than just a safety check for some years. (Note added 2017 – Legislation in Autumn 2016 only required CO alarms in England and Wales in private rented property with solid fuel which covered only 354,000 properties or 8.6% of the total).

1. The Government should consider both the public asset message and the possibility that new appliances may breakdown when determining the requirement for a wired-in carbon monoxide alarm in Part J of the Building Regulations.

Excellent. We would like to see this requirement covering all fuels not just gas.

1. The Government should bring regulation for the whole fossil fuel sector in line with that of the gas industry.

Excellent – CO-Gas Safety has been lobbying for this for many years. However, we would prefer the expression ‘carbon based’ to include wood etc., not ‘fossil’.

1. The Health and Safety Executive, working in partnership with industry, should create a central collation point for data relating to carbon monoxide injuries and fatalities, together with a dedicated helpline that would help act as a signposting service.

Excellent provided all carbon based fuels are covered, not just gas. However, it should be considered that victim organisations, such as CO-Gas Safety have a great deal to contribute because victims care passionately about prevention and can empathise with new victims. Care must also be taken to exclude suicides and house fires etc.

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**Comment 2014**

**CO-Gas Safety and others still cannot understand why prime time TV warnings were not recommended. The Cabinet office has a duty to put out public health warnings.**

**There are warnings about fire and smoking but we all know about these dangers.**

**APPCOG – Carbon Monoxide – FROM AWARENESS TO ACTION**

January 2015

<http://www.policyconnect.org.uk/appcog/sites/site_appcog/files/report/425/fieldreportdownload/appcogreport-cofromawarenesstoaction.pdf>

<http://www.policyconnect.org.uk/appcog/research/inquiry-behavioural-insights>

CO-Gas Safety is grateful to be supplied with the recommendations in a word document so that we can comment on each recommendation.

**Recommendations in black. CO-Gas Safety comments in blue.**

**Recommendation 1**

The Department for Communities and Local Government should second a full-time

staff member to coordinate activity within the department for carbon monoxide, and

to provide the Cross Government Group on Gas Safety and CO Awareness with a

dedicated person to lead and promote coordination of activity and resources.

An excellent recommendation which CO-Gas Safety fully supports. It would be helpful if this person’s name and contact details were published and generally available to all.

**Recommendation 2**

The Cross Government Group on Gas Safety and CO Awareness should develop and

adequately resource a coordinated data strategy for carbon monoxide incidents,

impacts and responses, to be led by Public Health England and coordinated with

current industry, academic and other efforts.

CO-Gas Safety also supports this recommendation especially ‘adequately resource’. However, how is this proposed to be accomplished?

Data from victim groups should also be included and hopefully funded where this is needed to continue this valuable work. Victims are a valuable research resource which has been overlooked or ignored. Victims and their families almost invariably want to help prevent future tragedies and know more about the details of each incident than almost anyone else. In our experience of talking to victims and families, they spend a good deal of time thinking about how the tragedy could or should have been prevented. Talking to people about this can also help victims and families come to terms with their loss. Obviously their views need to be checked but that is not hard to do because there are usually others to ask who can inform if there are any discrepancies. Also if a body such as CO-Gas Safety hears the same problems again and again from different victims and families over a long period of time, this repetition provides its own proof. Of course there does have to be a considerable amount of work done by someone to gather such evidence. At the moment this is certainly done by CO-Gas Safety in order to inform its opinions of needed safety measures. The only difficulty CO-Gas Safety has encountered is disbelief by people unwilling to check CO-Gas Safety’s information which it is very willing to have checked and to admit to mistakes and apologise.

Fire & Rescue Services, due to their status as trusted messengers, and with success

in other areas of their work, should be enabled to take on a more prominent role by

increasing their CO safety remit. Working closely with Gas Distribution Networks and

other partners, Fire & Rescue Services can use local knowledge of an area to tailor

CO safety campaigns, and target those different characteristics within each area.

Data collected by Fire & Rescue Services should also feed into a central hub, with

consideration of technological advances and opportunities.

CO-Gas Safety supports this recommendation. The main problem is the failure to treat the place where the poisoning took place as a ‘crime scene’. There needs to be an agreed protocol imposed and people to test appliances for CO.

It is far safer to test appliances and homes than to test survivors who may have been in the fresh air for long enough for the CO to have disappeared from their blood or breath. Indeed there are huge dangers of false negatives when testing survivors & people being sent home and told to keep warm.

In our experience, fire fighters sometimes do register CO in a variety of ways but do not usually find the source or identify how many parts per million of CO the householder was exposed to. Nor are they registered gas installers. Such information is crucial for treatment and proof.

There is a further problem because householders etc. are not poisoned by CO alone but by CO+ (other products of combustion) which are not tested for and no CO alarm or CO analysing equipment is designed to alert.

**Recommendation 3**

Data on carbon monoxide levels and incidents should be collected and shared, with a

central hub approved through Ofgem supplier conditions, building on existing purely

incident-based data. To enable this, alarm and data collection standards should preempt

the large amounts of data soon to be recorded through ‘smart’ homes, and a

framework for pooling this with input from academia should be created. Public Health

England, with a remit to cover incidents involving all fuels, should be involved in the

population-level data work.

We will comment on the first sentence above first.

This is easier said than done.

CO-Gas Safety has collected, collated and **published** its 19 data and injuries/near misses from unintentional CO every year, now 20 years on its website. (Note added January 2017 now 21 years of data).

We have been lobbying the GDNs to do the same for several years but so far we have not received anything meaningful from them and we do not think they have agreed to exchange data between themselves, let alone provide this data to us, let alone publish. We hope progress will be achieved on this very soon.

With regard to data from smart homes we agree. However, at the moment it seems that smart meters will not be sensitive to CO. More worrying than this is that the meter changers will not be protected from CO when they visit a home and change the meter. We find this scandalous and have pointed this out endlessly at every opportunity to DECC but been ignored.

First Call Operators for the GDNs acting as the gas emergency service all have some protection now (PAMs or Gasco seekers for CO) yet they are not usually exposed to CO because the consumer is told to turn off appliances and open the windows when the consumer rings to ask for the emergency service. This does NOT apply to meter changers as far as we are aware. We sincerely hope that no meter exchanger dies of CO as a result of not being properly equipped for his or her personal safety.

**Recommendations 4 & 5**

- The Fire and Rescue Services Act 2004 should be amended to include a statutory

requirement for Fire & Rescue Services to include carbon monoxide safety in their

work.

- Fire & Rescue Services should nationally coordinate their data gathering and carbon

monoxide prevention activities through the Chief Fire Officers Association, building

on current incident-information gathering, and making it available to researchers,

public health professionals and other data portals (see Recommendation 3).

Currently, various bodies, charities and groups each use slightly different branding for

CO campaigning. The provision of a single icon, with a set of key messages, building on

the example of ‘Fire Kills’, will allow ease of use and recognition by the public.

We agree with this recommendation and support it but again this has been suggested endlessly over the years and the mere provision or use of a single icon is not enough, as COCAA amply demonstrated. There needs to be **adequate** **funding** for this to be successful and funding is always lacking.

Why didn’t this recommendation call for a voluntary levy on the fuel industry to accomplish this and if that failed, a Government levy to be imposed as was recommended by the Health & Safety Commission (now Executive) in 2000?

**Recommendation 6**

A single, coordinated carbon monoxide campaign brand, messaging, and set of

materials should be developed and made freely available for use through a national,

central portal. This could be related to a government department or a relevant

emergency service such as Fire & Rescue, and should be coordinated with industry and

charity campaigning efforts through the Carbon Monoxide All Fuels Action Forum.

We repeat our comment immediately above in blue.

With regard to the All Fuels Action Forum in our opinion this needs proper funding to achieve anything because without funding, the Forum is unable to take action and is merely a talking shop. Some action that did not need funding may have taken place but obviously there is a huge need for much more to be done, e.g. prime time TV warnings.

In our opinion, the Forum also needs to be less industry dominated and keener to take real action which is what victims and victim groups want.

Domestic Appliances and Environments

The range of appliances used in the domestic environment each pose unique CO

risks due to the different interactions people have with them. Natural gas boilers,

despite being the best-known source of CO risk, have been responsible for decreasing

numbers of incidents in recent years. Other sources, including gas cookers and wood

burning stoves, pose new risks which may not be as well recognised, and require extra

consideration by relevant bodies.

CO-Gas Safety agrees with this recommendation and supports it completely as our data collected so far, (however many deaths are missed), shows that, per user, gas seems safer than other fuels.

The context of ‘home’ is very important when considering behaviour – targeting safety

measures is difficult due to the unpredictable nature of people’s behaviour in their

home environment. Reflective of this insight, some social housing providers have

decided to minimise CO risk by replacing gas appliances with electric.

In CO-Gas Safety’s opinion it was often the gas cooker belonging to the tenants privately that caused the CO emissions so replacing with electric (as suggested by us at that meeting at the House of Commons about Hackney Homes but ignored and not put in the minutes), is a sensible way forward.

Additionally, energy behaviours are highly habitual and difficult to change. An effective method of

creating and reinforcing a repeated behaviour, such as annual servicing, is by linking it

to other behaviours. Associating these with a consistent servicing date, or a reminder

service, could help ensure servicing is done at the correct time. Consistent servicing

dates would be of particular use for the social housing sector, where access to the boiler

that requires servicing is a particular challenge.

The regular servicing of properly installed appliances by a competent person will act

as the best method in preventing CO production at source. All campaigning and advice

given to reduce CO poisoning incidents should promote a ‘belt and braces’ approach of

proper appliance use and servicing, along with the installation and use of BS EN 50291

Standard-compliant CO alarms as a vital back-up.

CO-Gas Safety agrees completely but following on from the comment about the tenants’ own gas cookers, it would be sensible for landlords to insert a clause into the tenancy agreement that no privately owned carbon fuelled appliances are to be used inside the rented property or outside, under cover or within, say 10 feet of the property.

A study by Hackney Homes/ Public Health England revealed that even within a fully

serviced housing stock, CO risk remained in a relatively large number of properties.

A lack of similar studies has led to difficulties in national-level comparison; however

the large number of alarm activations makes it clear that the provision of Standard compliant

CO alarms is an important intervention for the housing provider to make.

CO-Gas Safety agrees. This information requires detailed research to find out exactly why CO risk remains. We think a large number are due to the fact that tenants bring in privately owned carbon fuelled appliances but there are other possible factors such as the failure of flues, lack of sweeping, negligence of registered installers, lack of ventilation and possibly wrong regulations to consider.

**Recommendation 7**

Building Regulations should be amended to require social housing providers to fit

and maintain Standard-compliant carbon monoxide alarms wherever a fuel burning

appliance is installed, and providers should commit to replace fuel-burning appliances

with lower-risk versions in certain vulnerable situations.

CO-Gas Safety agrees and fully supports this but why not require landlords of all rented property to fit CO alarms to EN 50291? Why wasn’t there a call to amend the law to amalgamate the landlord’s continuing duty to keep the gas appliances in a safe condition with the landlord’s duty to undertake a gas safety check? This would provide clarification and improve safety.

**Recommendation 8**

The Gas Safety (Installation and Use) Regulations 1998 should be amended to

introduce MOT-style (13-month validity) appliance servicing rules, allowing the same

service date to be used annually.

Multiple mechanisms now exist for the energy sector to better serve vulnerable

customers. Targeting fuel-poor households with CO safety measures, such as gas safety

checks and CO alarms, will protect those energy customers most at risk of fuel poverty,

and potentially CO poisoning. The increasing air-tightness of homes, while welcomed

in the context of energy efficiency, may inadvertently cause increased risk from CO.

CO-Gas Safety agrees but in our opinion, prime time TV warnings about CO and the need for proper regular servicing etc. has not been tried first. Our inclination is to see if this would produce results before pursuing a more draconian approach. Furthermore, there is a risk of lack of enforcement. Also CO does not only kill or affect the poor – the rich are vulnerable too.

Perhaps if there was greater awareness medics might also consider CO, which at the moment they generally do not. See <http://www.mirror.co.uk/news/real-life-stories/thought-early-dementia-three-years-5930721>

**Recommendation 9**

Ofgem’s Consumer Vulnerability Strategy should include within energy supplier

Priority Services Register requirements, the provision and installation of Standard compliant

carbon monoxide alarms for vulnerable customers.

CO-Gas Safety supports this but also considers that the energy suppliers could do a great deal more generally and not just for the ‘vulnerable’ – all are vulnerable to CO. The problem for Ofgem is that HSE does not make it clear that CO is a safety issue of great public concern. If only HSE would take this step, then Ofgem would be able to act with regard to the gas suppliers. In our opinion HSE needs to be approached by all concerned. We have tried many, many times and been ignored. We implore APPCOG to do this and also to appeal to the fuel industry and particularly the wealthy gas suppliers and manufacturers.

**Recommendation 10**

The UK Government should introduce a boiler replacement scheme with a view

to Green Deal energy efficiency measures, tied in the first instance to the energy

supplier Priority Services Register to target the most dangerous appliances in the most

vulnerable situations.

CO-Gas Safety supports this recommendation. Our data shows that boilers are the most serious offender with regard to deaths from unintentional CO (24%) with room heaters next at 17%.

**Recommendation 11**

The Department of Energy and Climate Change should ensure that results and

recommendations emerging from research into the risks associated with increased

air-tightness of homes are appropriately incorporated into Green Deal assessments and

guidance.

CO-Gas Safety supports this recommendation but more funding is needed for research. Why is there no call for funding?

**Recommendation 12**

An ‘Innovation Standard’ for carbon monoxide alarms should be created, allowing

flexibility within existing rules without compromising safety, to encourage the design of

novel carbon monoxide detection applications.

Alarm provision needs to be combined with education on the purpose and importance

of the equipment, and in some cases, installation. Free giveaways of alarms have led to

some remaining unused, ignored or unfitted.

CO-Gas Safety agrees. Why was £3.2 million provided from public funds to publicise and buy smoke and CO alarms for landlords with regard to the Smoke and Carbon Monoxide Alarm (England) Regulations 2015\* when some of that funding could surely have been spent on prime time TV warnings and perhaps research?

\*[**http://www.parliament.uk/business/publications/hansard/lords/todays-lords-debates/read/grandcommittee/934/#c934**](http://www.parliament.uk/business/publications/hansard/lords/todays-lords-debates/read/grandcommittee/934/#c934)

**Recommendation 13**

Providers of ‘Home Care Plans’ of annual heating system servicing and maintenance,

should include carbon monoxide alarms as a ‘default’ option within each package.

CO-Gas Safety supports this. However, CO alarms although really helpful particularly with regard to saving lives are not in our opinion the whole answer. Education is also vital, for example Roland Wessling and Hazel Woodhams both knew all about CO and had done the right things at home and had a CO alarm. However, that didn’t mean they knew they should not put a cold to the touch used barbecue inside the tent. As a result of this lack of knowledge Hazel sadly died and Roland nearly died and was injured. This is why leaflets (see ours which can be downloaded from <http://www.co-gassafety.co.uk/resources/leaflet-about-carbon-monoxide-poisoning/> )and more vitally, prime time TV warnings and other educational measures (e.g. our CO Awareness competition for primary school children) are so important to prevent people suffering from CO in the first place or suffering CO at low levels over a long period of time (which would not set off a CO alarm) or suffering from the other products of combustion, which a CO alarm is not designed for.

**Recommendation 14**

Carbon monoxide alarm manufacturers, in line with an updated alarm Standard,

should simplify alarm installation instructions, and include cartoons and single-page

checklists for easier interpretation of fitting.

Improvements in detection technologies also provide two other key areas of

opportunity to promote CO safety; connected alarm and home appliance systems, and

increasing data-recording which could contribute valuable information for CO safety related

work (see Recommendation 3).

Medical and healthcare professionals have a vital role to play in the detection, diagnosis

and treatment of CO poisoning incidents, as well as the prevention of further incidents.

At the same time, the difficulty of diagnosing CO poisoning is well recognised, as is the

recognition that official mortality and morbidity statistics underestimate the number of

people affected by CO poisoning.

CO-Gas Safety supports this and has already commented on medics etc. Medics are not trained in CO and CO is very difficult to diagnose.

**Recommendation 15**

Public Health England and the Department of Health should review the effectiveness

of existing tools used by medical and healthcare professionals for approaching carbon

monoxide issues with specific groups, such as algorithms for midwives, with a view to

identifying and developing further examples.

CO-Gas Safety agrees and supports this.

The real problem however is not the algorithm but the lack of access to properly qualified gas safe registered installers who can test gas appliances for CO. It is obviously vital for safety to identify where the CO is coming from and ideally for treatment and proof it is important to prove how many parts per million of CO is being emitted or indeed none.

To find someone to test gas appliances for CO and provide Parts Per Million of CO to the consumer the consumer has to:-

1. Access the Gas Safe Register website <http://www.gassaferegister.co.uk/>
2. Click on advanced search. What consumer would know how to do this?
3. Put in post code.
4. Search for firms offering ‘fumes investigation’. Why would a consumer know this?
5. Contact said firms and ask if they employ someone qualified under CMDDA1. If so, ask for their name and check under the GSR. Ask also how much it would cost to test appliances for CO and give PPM of CO in writing.
6. When that person turns up the consumer has to check to make sure it is the person with the qualification CMDDA1.

We have not yet found a consumer able to do this although the Gas Safe Register has told us they will help by telephone. The GSR has refused to change this. The HSE has also refused to deal with this.

(Note 2017 – this has changed somewhat but is still as difficult if not more so.)

There is an even worse situation with regard to testing appliances powered by other fuels as we do not think there is an equivalent to CMDDA1. Then there are the other toxins in the products of combustion (see <http://www.co-gassafety.co.uk/about-co/other-toxins/> )

**Campsite and Boating Environments**

The environments outside of the home in which CO poisoning incidents occur, such as

campsite and boating environments, need to be addressed separately from the home

context. Campaigning to improve CO awareness and safety in these environments can

be a real challenge, especially as the consumer may be in such an environment only for

a short time. They may also bring with them a ‘holiday mind-set’ that entails different

attitudes to risk than when in the home environment.

Multiple high profile fatal incidents in recent years have highlighted the danger of

disposable and other portable barbecues and camping stoves being used or kept inside

tents. Clearer risk information, segregated cooking areas and the provision of alarms

are all safeguards for campsite CO safety. Ensuring suitable alarms are readily available

and clarifying the recommended action following alarm activations are all important

actions, especially with increasing advisory messages to carry CO alarms on holiday.

CO-Gas Safety agrees with this recommendation. We are also concerned with the other products of combustion in barbecue lighting products and barbecue fuel.

**Recommendation 16**

All campsites should provide isolated, clearly marked areas for barbecue use and

disposal.

CO-Gas Safety agrees with this recommendation

**Recommendation 17**

All recreation parks should offer suitable carbon monoxide alarms to purchase, or

loan for the duration of stay. These could include those developed through a new,

‘Innovation Standard’ to ensure optimal performance in these environments.

CO-Gas Safety agrees with this recommendation

**Recommendation 18**

Carbon monoxide alarms should display clear ‘next steps’ following an alarm

activation, either on a fold-away area or on the external casing, including moving to

a ventilated area and calling a relevant emergency service. These instructions should

differ for ‘outdoor environment’ alarms designed through a new, ‘Innovation Standard’.

Large, temporary accommodation areas such as those at festivals contain many

different locations of CO risk, including tents, caravans, catering vans and so on. A

single warning symbol or icon (see Recommendation 6) would be a valuable trigger in

people’s minds to improve safety in these environments, to unify and simplify warnings

around recognition of the symptoms of CO poisoning.

CO-Gas Safety agrees with this recommendation. It would also be helpful to coordinate this symbol with prime time TV warnings.

**Recommendation 19**

Public Health England should commission and support a study of low-level carbon

monoxide exposure in leisure and recreation environments, similar to those

undertaken in homes by Liverpool John Moores University.

CO-Gas Safety agrees with this recommendation but points out that the other products of combustion should also be tested for.

**Recommendation 20**

Festival organisers should ensure that staff receive carbon monoxide promotional

material and information during training, to enable them to act as trusted ‘safety

ambassadors’ internal to the festival population and create a multiplier effect of safety

awareness. Ambulance and medical staff at each festival should be a part of this

process.

Boats, used for either leisure or professional activity can provide a high-risk

environment for CO poisoning. Engines and/or cooking and heating equipment often

produce the gas in close proximity to confined habitable quarters. Boat users may not

be responsible for the maintenance regime of fuel-burning appliances on board, and

may be using the boat only temporarily or for leisure purposes. Detection therefore

becomes increasingly important as a line of defence against CO poisoning.

CO-Gas Safety agrees with this recommendation.

Again wouldn’t prime time TV warnings be ideal to assist with this?

**Recommendation 21**

The Maritime and Coastguard Agency, in line with the 2014 ‘Eshcol’ Marine Accident

Investigation Branch Report, should include in the Code of Practice for the Safety of

Small Fishing Vessels a requirement for a Standard-compliant carbon monoxide alarm

to be fitted in the accommodation on all vessels. Similar requirements should be carried

over to vessels used on inland waterways, including those for hire and other purposes,

regardless of the fuel type used on board.

CO-Gas Safety agrees with this recommendation.

**Comment by CO-Gas Safety in 2017**

**Could HSE please read our recommendations made to Frontline which I am sending separately and which we made in June 2006, the recommendations made by APPCOG in 2011 with our comments in blue and the recommendations made by APPCOG in 2015 with our comments in blue.**

**These are repetitive because so little action has been taken.**

**We have asked to see the CEO of Ofgem (email dated 04.06.16) and been ignored.**

**We have asked to see the new Chair of HSE and been ignored.**

**We have asked to see the Chief Medical officer without success.**

**We have seen Barry Sheerman MP and asked him for help in seeing the above and received no help so far.**

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