



# Covid Impacts

---

*...in collaboration with HSE, NEBOSH and BSC*

# NEBOSH Covid Impacts

## Agenda

- **Welcome and introduction**
- **Covid secure workplaces**, Dave Parr, British Safety Council
- **Testing face shields against a simulated human cough using a breathing manikin and fluorescence visualisation**, Dr Brian Crook, Health and Safety Executive
- **Mental health and dealing with grief in the workplace**, Dr Julie Riggs, British Safety Council
- **Rethink the Normal**, Dee Arp, NEBOSH

*...in collaboration with HSE, NEBOSH and BSC*

Covid Impacts

---

# Introduction to collaboration partners

*...in collaboration with HSE, NEBOSH and BSC*

# Health and Safety Executive, Science Division



- The Health and Safety Executive (HSE) is Britain's statutory regulator of occupational health and safety
- Their work covers a varied range of activities: shaping and reviewing regulations, producing research and statistics, investigating incidents and enforcement
- HSE's Science Division (HSE-SD), is based at the HSE Science and Research Centre in Buxton
- It is one of the worlds leading providers of workplace health and safety research, training and consultancy, employing around 420 scientific, medical and technical specialists across a wide range of disciplines.

# Overview

- The leading global organisation which provides health, safety and environmental qualifications.
- Since 1979 more than half a million people from around the world have studied for a NEBOSH qualification.
- Over 50,000 people each year take a NEBOSH qualification with our network of 600 Learning Partners in over 130 countries.
- Our qualifications are highly respected by governments, employers and our learners.
- Charitable awarding body.

# What we do

- Create qualifications that build the knowledge and skills which underpin competent performance as a health, safety and environmental professional.
- We are an awarding body:
  - Develop syllabuses
  - Accredite Learning Partners to deliver courses
  - Set and mark examinations
  - Issue Qualifications to successful students
- Accredited by the Scottish Qualification Authority (SQA)
  - UK-wide regulatory remit



# About us



We are a trusted leader in health, safety and environmental management.

As a not-for-profit organisation all our resources are directed to reducing risk and preventing injuries in the workplace, across the world.

For nearly 60 years we've been helping organisations develop and maintain effective practices.

We're consulted directly on legislation and campaign actively to raise standards.

**Our vision:**

**No-one should be injured or made ill at work.**

# About us



We offer comprehensive services in health, safety and environmental management, including audit, advice and accreditation.

We help develop, implement and maintain effective policies and processes in organisations and businesses of every size.



[www.britsafe.org/corporatebrochure](http://www.britsafe.org/corporatebrochure)





# NEBOSH Covid Impacts

---

**David Parr**

Technical Advisor – British Safety Council

*...in collaboration with HSE, NEBOSH and BSC*

## Section heading

- The mix of shared values, attitudes and patterns of behaviour that give the organisation its particular character. Put simply it is 'the way we do things round here'
- The 'safety culture' of an organisation could be described as the ideas and beliefs that all members of the organisation share about risk, accidents and ill health

NEBOSH Covid Impacts

---

# **COVID-19 : A Risk Management Approach**

**Safeguarding Workers Health, Safety and Wellbeing**

*...in collaboration with HSE, NEBOSH and BSC*

## Managing COVID-19 Within the Workplace

### Two Stage Approach

#### ***Risk Management : Planning***

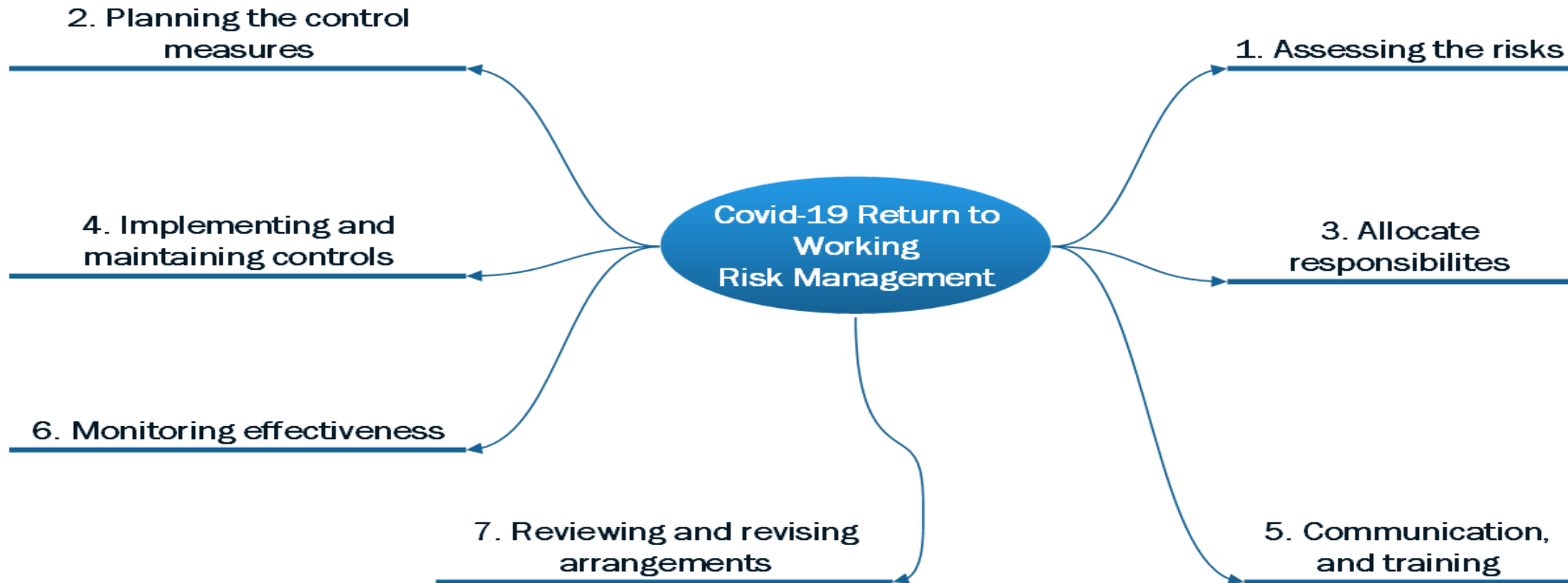
Assessment, Planning and Implementing Controls, Roles and Responsibilities, Communication and Training, Monitor and Review

#### ***Control Measures : Implementing***

Contact Avoidance, Health Control and Surveillance, Social Distancing, Personal Hygiene, PPE, Workplace Cleaning, Workplace Ventilation

## NEBOSH Covid Impacts

# Managing COVID-19 Within the Workplace



## NEBOSH Covid Impacts

# Managing COVID-19 Within the Workplace

Essentially, a risk assessment must consider the following two questions:

- ❑ Where within the workplace can people come into direct, close contact with others or touch potentially contaminated surfaces, equipment, and materials?
- ❑ What activities are undertaken which give rise to the opportunity for transmission?

Conduct an analysis of workflows to identify where products, items and people move through the workplace.

Use floor plans or site layout plans to identify locations where people might interact or assemble.

From this you can identify contact points or potential congestion hot spots where there may be an elevated risk of transmission.

*...in collaboration with HSE, NEBOSH and BSC*

# Implementing Infection Controls

Avoid all personal contact			
Health surveillance and exclusion	Social distancing	Personal hygiene	Workplace cleaning
PPE (except in medical / care activities, when dealing with known cases)			
Workplace ventillation			

## Infection Control in the Workplace

### Avoidance of Personal Contact

Work at home if possible

Decide who is essential to be in workplace

Protect vulnerable / high risk employees

Keep in touch with those who work / stay at home

Gradually increase the numbers who need to return to workplace once you have shown that the protection measures are sustainable



NEBOSH Covid Impacts

## Infection Control in the Workplace

### Health Surveillance and Screening

Vaccination

Workplace testing for higher risk staff

In-work protocols for dealing with someone who develops symptoms

Health declarations for visitors / contractors



*...in collaboration with HSE, NEBOSH and BSC*

## Infection Control in the Workplace

### Social Distancing

1m - 2m for all work activities, unless it is not practical (rather than inconvenient)

Physical separation – routes and common areas, workstations

Arrival and departure times – including breaks

Personal behaviours & adherence to the separation distances

Protective screens for public facing staff

Signs & information

Supervision at “hot spots”

*...in collaboration with HSE, NEBOSH and BSC*

## NEBOSH Covid Impacts

# Infection Control in the Workplace

Frequent hand washing / sanitisation

Additional facilities washing, sanitiser dispensers

Sealed waste bins

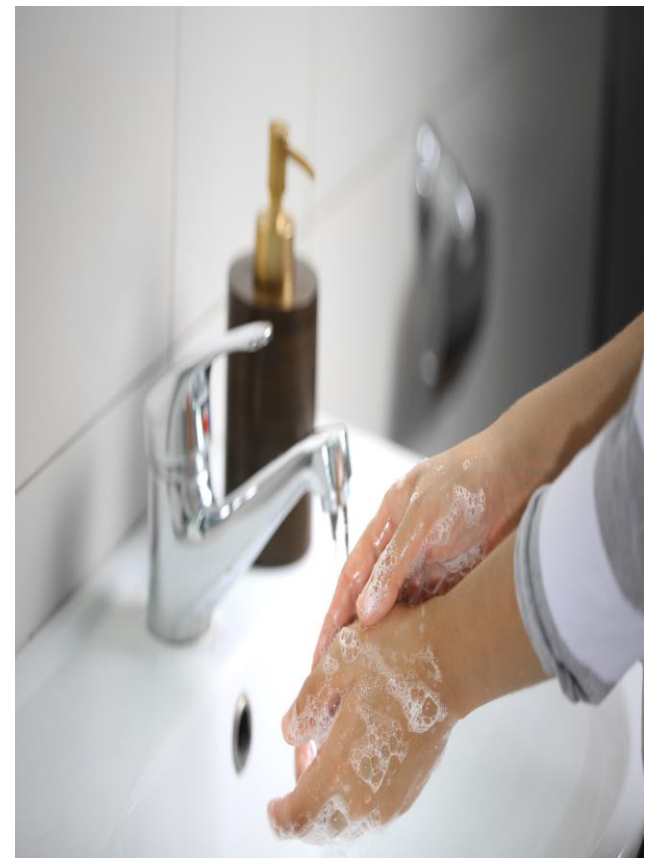
Signs and information

Cough & sneeze into disposable tissues

Avoid touching surfaces

Don't share equipment

Safe system for washing overalls / clothing (on-site if possible)



*...in collaboration with HSE, NEBOSH and BSC*

## Infection Control in the Workplace

### Workplace Cleaning

Focus on touched surfaces

Develop a clear plan

Walk through with cleaning staff – show them where the hot spots are

In shared building – discuss with landlord / facility management

Staff should wipe down their own workstation / equipment

Waste disposal via sealed bags

## NEBOSH Covid Impacts

# Infection Control in the Workplace

## Personal Protective Equipment (PPE / CPE)



Gloves, overalls, aprons, visors, respirators, face masks

Face masks : community protection from an infected person (CPE)

Protection to match the risk – medical, care workers dealing with known or suspected cases, dentists & hygienists, mortuary staff, those transporting samples/test/specimens

Individual issue, disposable where possible

In-house cleaning protocols

*...in collaboration with HSE, NEBOSH and BSC*

## Infection Control in the Workplace

### Workplace Ventilation

Dilutes airborne droplets

3-5 air changes / hour if possible

Open windows and doors (if doesn't compromise security / fire protection)

Remember legionella risk when re-opening facilities

Check low level discharge points

Safe system of work for ventilation engineers who change filters or clean the system

NEBOSH Covid Impacts

## **Infection Control in the Workplace**

### Challenges

An unseen threat & a two-way route for harm

Uncertainty about effectiveness of the controls

The largest workplace behavioural safety programme ever

Each workplace will need a tailored solution

Workers and employers will be very anxious

*...in collaboration with HSE, NEBOSH and BSC*

# Thank you



*...in collaboration with HSE, NEBOSH and BSC*





# Testing face shields against a simulated human cough using a breathing manikin and fluorescence visualisation

---

**Brian Crook**

Principal Research Microbiologist, Health and Safety Executive

*...in collaboration with HSE, NEBOSH and BSC*

# Acknowledgements

- This presentation has been possible through the hard work of HSE colleagues Paul Johnson, Claire Bailey, Zoe Gould and Sam Hall;
- The work was funded by HSE and WHO;
- The WHO project included partners from University of East Anglia UK, Public Health England, University of Sao Paulo Brazil and University of Lagos Nigeria.

# Background

- During the Covid-19 pandemic, the use of various PPE items has become paramount in protecting healthcare workers (HCW) and members of the public from cross-infection;
- In the UK, face shields (visors) are used either alone or, for HCW, in combination either with fluid repellent surgical masks or with respirators if undertaking aerosol generating procedures.



# Background continued

- A wide range of visor designs exist and it can be assumed some protect better than others;
- The current standard method (EN166) of testing visors (laser light test) does not adequately assess for protection against airborne virus generated from a cough;
- A project was therefore funded by HSE to develop better assessment methods;
- Additional funding was provided by WHO to assess visors being used by HCW and the public in resource limited settings.

# Preliminary work

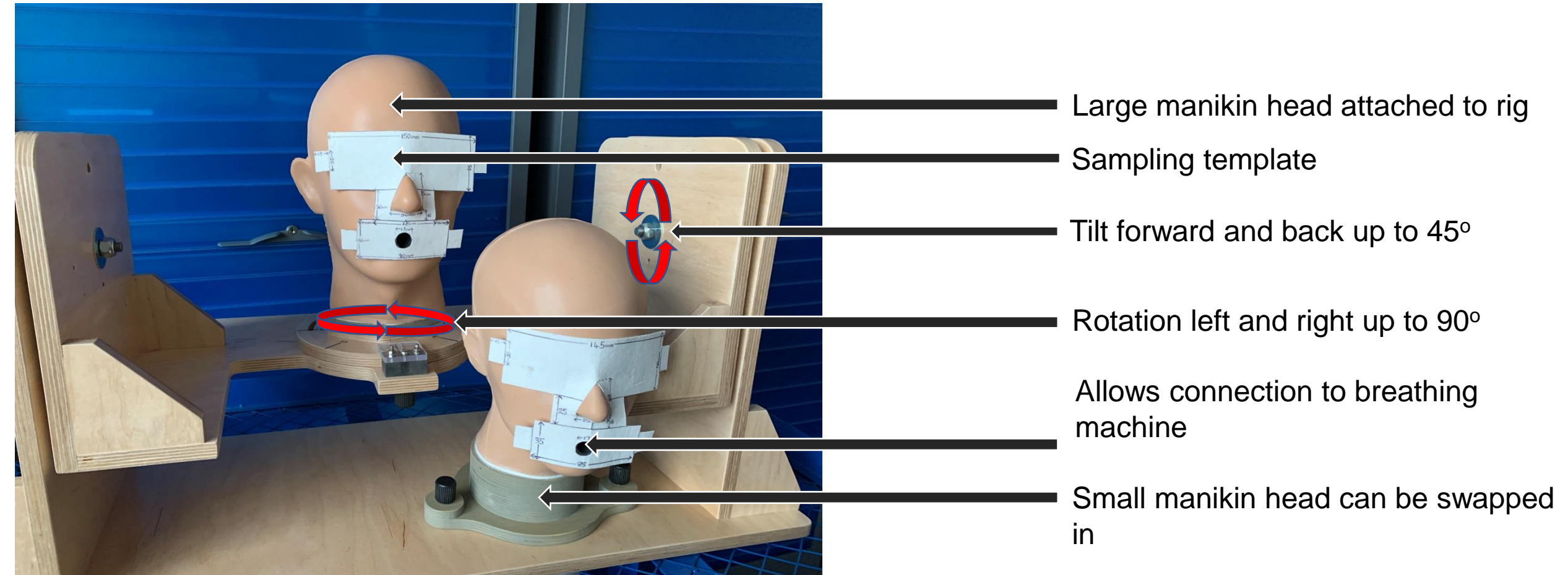
We prepared apparatus, developed methodology and tested the performance of visors against a cough challenge. This has included:

- Building a manikin test rig based on that described in EN166 which was used with two different sized breathing manikin heads;
- Building a simulator to deliver fluorochrome droplets and aerosols to mimic the physiology of a cough;
- Using the cough simulator/ breathing manikin test rig to challenge a range of visors with fluorochrome marker simulated cough.

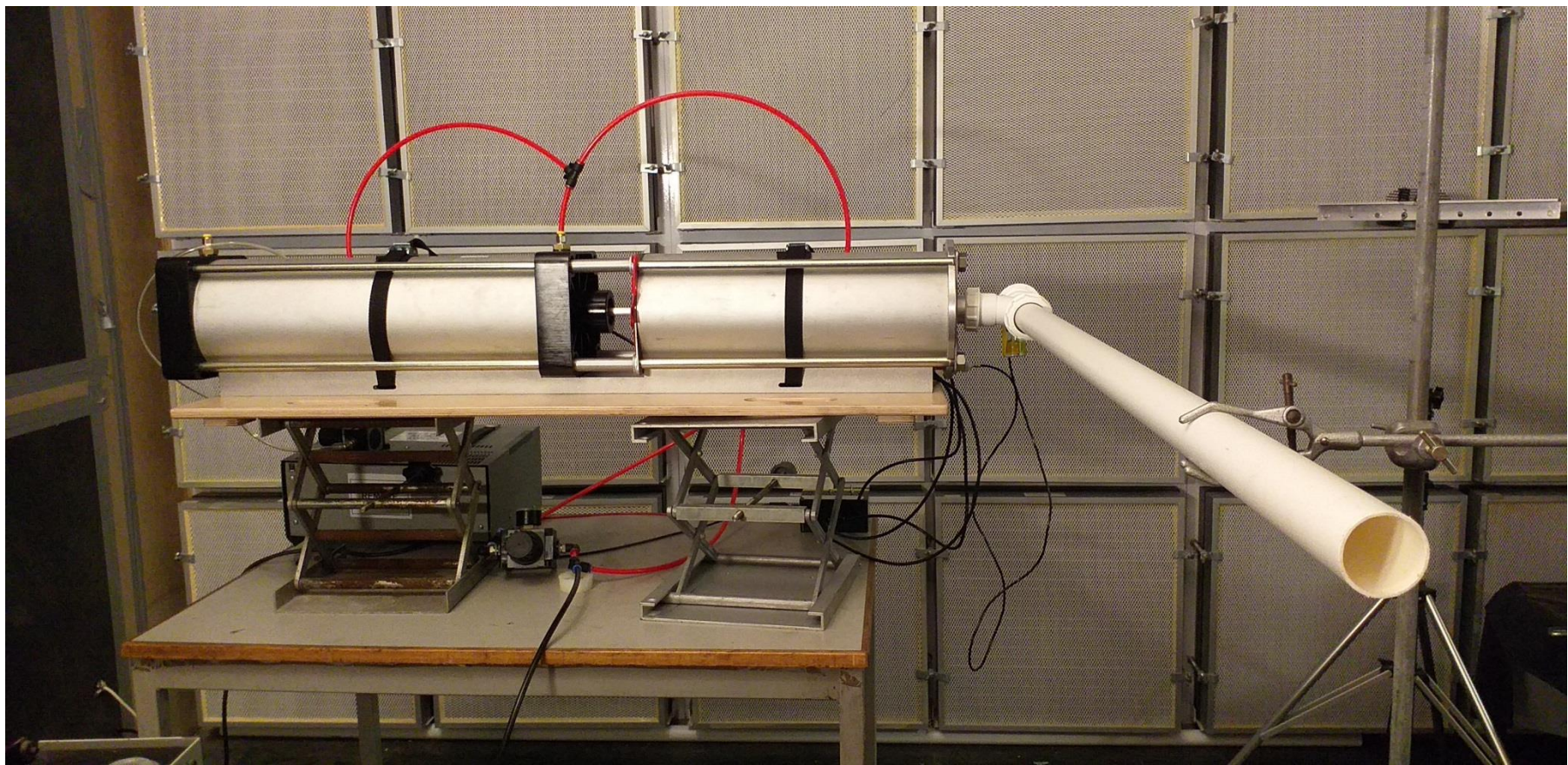
Visors were sourced from the UK NHS PPE stockpile, from the WHO Geneva PPE stockpile, and from visors currently in use in Nigeria, Brazil and Tanzania.



# Breathing manikin heads

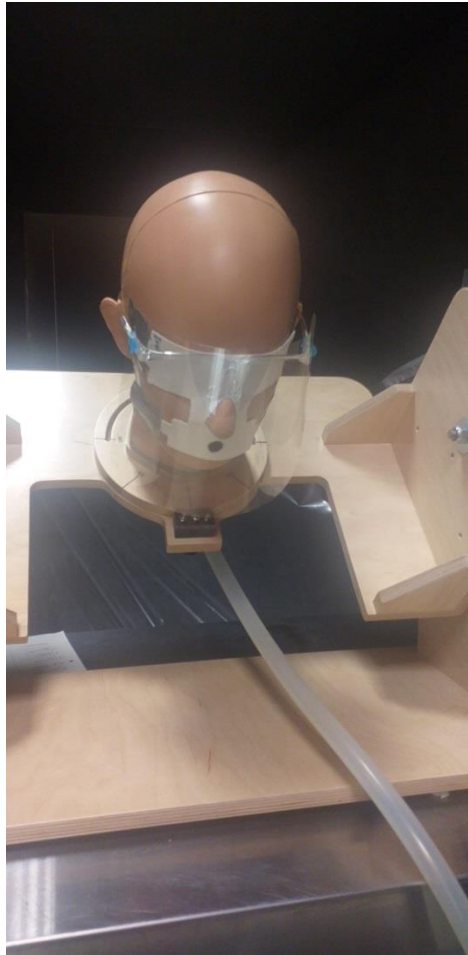


# Cough simulator

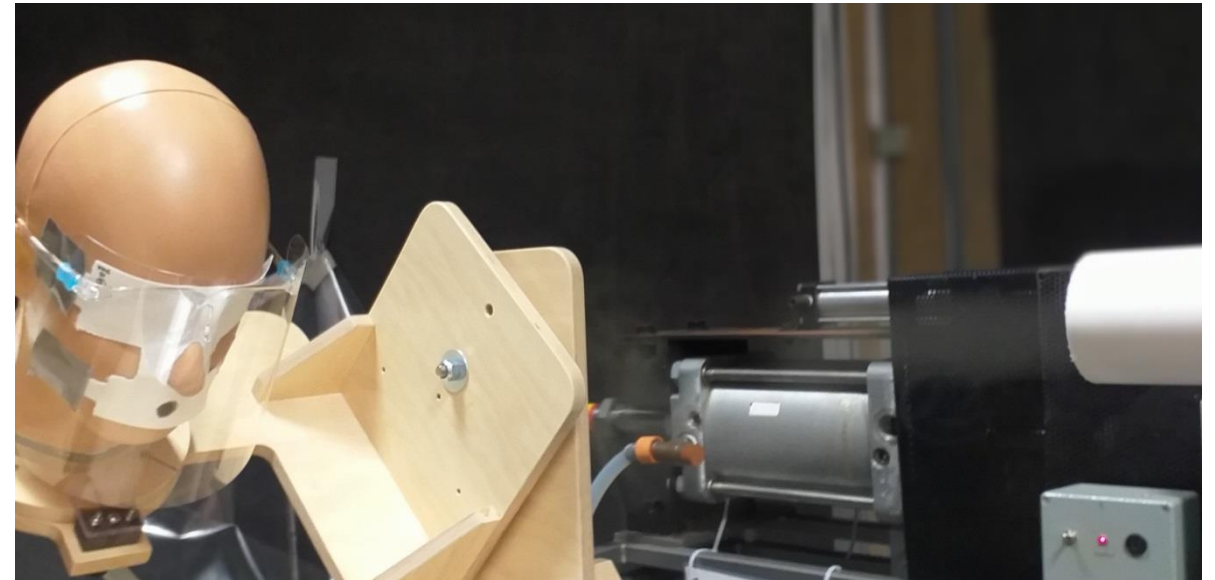




# Visor testing in progress



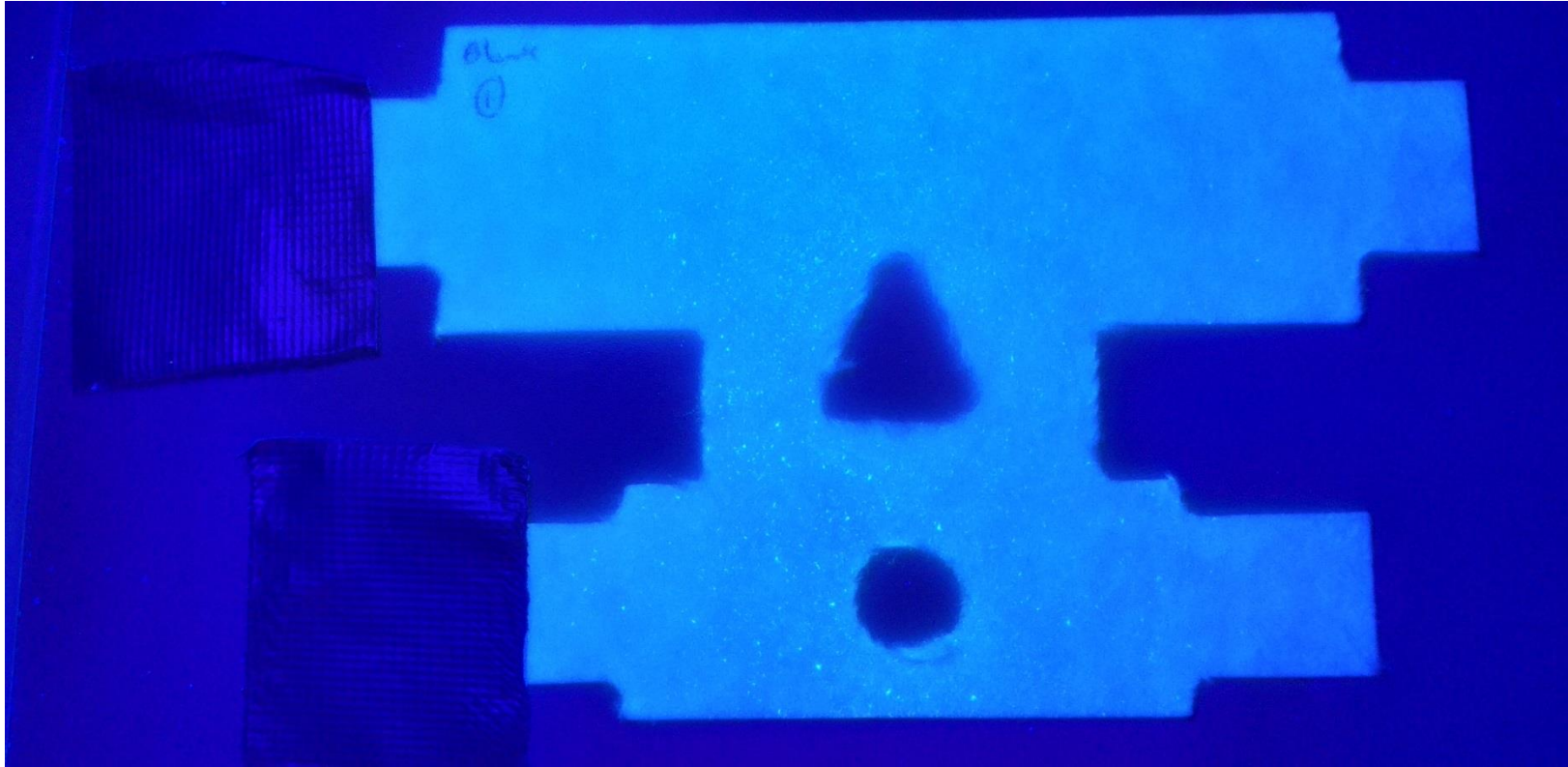
**Nigerian face  
visor in tilted  
forward test  
position**



**Breathing machine in background**

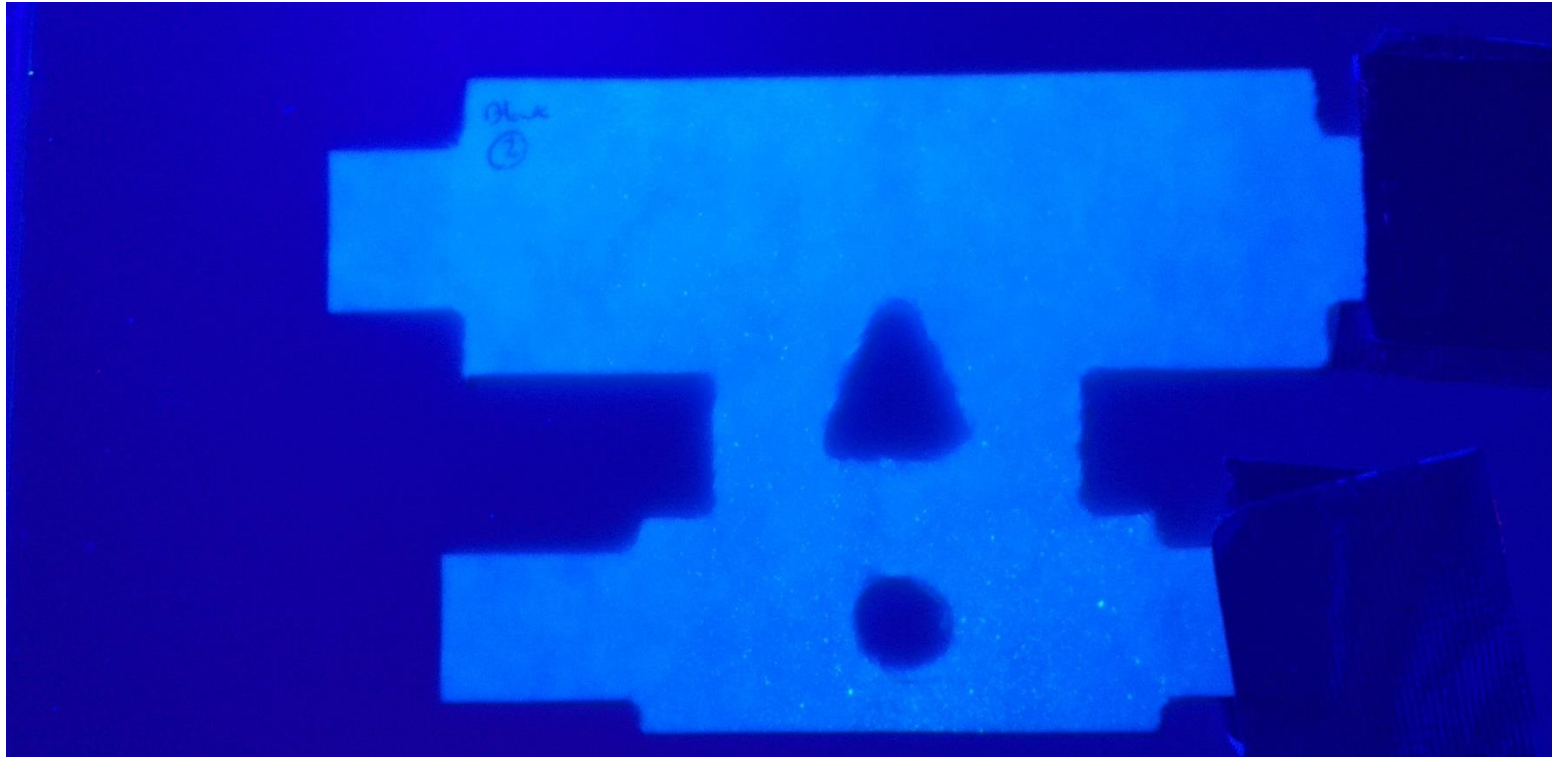


## Typical visor test - 1



**Unprotected manikin face-on shows deposit evenly over face**

## Typical visor test - 2



**Unprotected manikin tilted back shows deposit mainly around lower face/ mouth**

# Face shields tested

- Under HSE funded project 14 visors being tested;
- Under the WHO funding we have tested the WHO visor, 2 from Nigeria, 5 from Brazil, and 1 from Tanzanian all with two head sizes;
- The WHO project tied in with user questionnaires conducted in Brazil and Nigeria.



# Results and observations

- Deposition was measured in three regions – eyes, nose and mouth;
- Deposition of fluorescent cough breaching face visors was most likely around mouth in position 2 with head face-on tilted back;
- Some deposition around eyes at top with head tilted forward – probably associated with visors with gaps at the headband;
- The size, shape and length of the visor affected protectiveness, also some protected better on small heads.



# Summary of results

- None of the face shields tested totally eliminated exposure, and there were differences in the level of protection afforded by each;
- However, all of the face visors gave some protection from exposure to a cough directed at them, and therefore it can be assumed would offer some protection against SARS CoV-2;
- Face visors therefore are an important component in the range of protective measures against SARS CoV-2.



## Ongoing and future work

- We are currently completing work on the remaining visors for the HSE project, as well as testing safety goggles;
- We are aiming to develop the test method as a standard test;
- We are simplifying the testing methodology especially for use in resource limited settings.

## CONTACT INFORMATION

[brian.crook@hse.gov.uk](mailto:brian.crook@hse.gov.uk)

[samantha.hall@hse.gov.uk](mailto:samantha.hall@hse.gov.uk)

# Thank you



*...in collaboration with HSE, NEBOSH and BSC*



# NEBOSH Covid Impacts

---

**Dr. Julie Riggs**

Senior Head of Education – British Safety Council

*...in collaboration with HSE, NEBOSH and BSC*



## Section heading

- The mix of shared values, attitudes and patterns of behaviour that give the organisation its particular character. Put simply it is 'the way we do things round here'
- The 'safety culture' of an organisation could be described as the ideas and beliefs that all members of the organisation share about risk, accidents and ill health

NEBOSH Covid Impacts

---

# **Mental health and dealing with grief in the workplace**

*...in collaboration with HSE, NEBOSH and BSC*

# Abnormally Normal

- Mental health is a state of mental well-being
- Influenced by many factors
- Short and long term impact
- Different trigger points
- Is mental health abnormally normal?

COVID-19 affecting mental health and the brain is the norm, rather than the exception



# The Most Neglected Area Of Health Globally

- Nearly **1 billion people** live with a mental disorder
- Low-income countries, more than **75% of people** with the disorder do not receive treatment
- Every **40 seconds**, a person dies by suicide
- About **50%** of mental health disorders start by the age of 14
- Countries spend **less than 2%** of their health budgets on mental health
- COVID-19 pandemic has disrupted or, in some cases, halted critical mental health services in **93% of countries worldwide**, while the demand for mental health is increasing

# Focus on India

- 7.5% Indians suffer from some mental disorder and predicts that by end of this year roughly 20% of India will suffer from mental illnesses
- 56 million Indians suffer from depression and another 38 million Indians suffer from anxiety disorders

*Source: World Health Organization*

- The mental health patterns in India are quite the same globally
- Hidden pandemic
- As a community we need to collectively build infrastructure

# Short Term Impact of Covid

The pandemic is fuelling a wave of grief and loss that is unprecedented in living memory

- Social isolation
- Job and financial losses
- Missed education
- Housing insecurity
- Front line services – Covid burnout
- Loss of support mechanisms
- Reduced access to mental health

# Long Term Impact of Covid

The pandemic may lead to a widening of pre-existing health inequalities, as well as affecting people who have not previously experienced poor mental health

- SARS global outbreak in 2003
- Depression, anxiety
- Obsessive-compulsive disorder
- Substance abuse
- Chronic loneliness and loss
- Impacts on wellbeing (sleep, diet, exercise)
- Impact on health system, economy, inequality, stability, health care, jobs, family structures, displacement, unemployment



# Global Interventions

- Apply a whole-of-society approach to promote, protect and care for mental health
- Ensure widespread availability of emergency mental health and psychosocial support
- Support recovery from COVID-19 by building mental health services for the future
- Promoting positive coping and psychosocial well-being in the population through effective communication about COVID-19 and mental health

*Source: World Health Organization*

# Employer's Role in our Communities

## Interventions

- Acknowledge and be present
- Compassion and patience
- Education
- Assessments
- Signpost
- Safe place
- MHFA
- Start a conversation



*...in collaboration with HSE, NEBOSH and BSC*

# Employees

## Interventions

- Stay connected
- Plan your routine
- Look after your physical health
- Do things you enjoy
- Be mindful of the news and their sources
- Take time to relax, focus on the present
- Get good sleep
- Talk about your concerns



# Unanswered Questions

- What will be the long term impact on mental health?
- How will this contribute towards wellbeing, family structures, health care system, education, economy?
- Will new working solutions drive further isolation?
- How can we protect our workers and industries?
- Will the global community cooperate?
- How do we create a new normal that considers all peoples' needs will be the priority after the pandemic?
- What lessons can we globally learn?
- How can we lead people through grief and instil a sense of hope?

NEBOSH Covid Impacts

# Our Global Community

Despite the profound collective grief we all share globally, there is an opportunity to grow, share information, resources and heal together

*...in collaboration with HSE, NEBOSH and BSC*

# Thank you



*...in collaboration with HSE, NEBOSH and BSC*



# NEBOSH Covid Impacts

---

**Dee Arp**

Chief Operating Officer NEBOSH

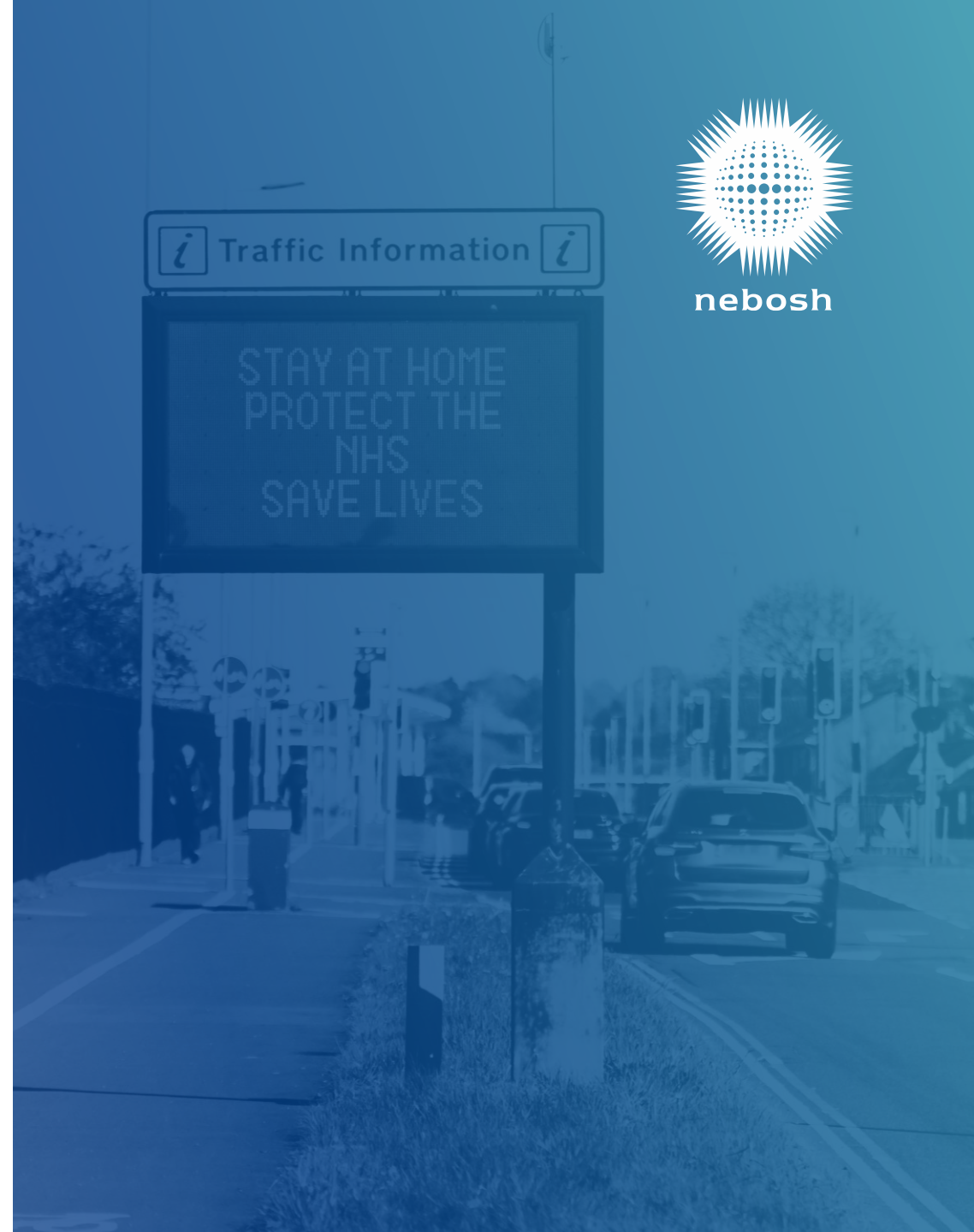
*...in collaboration with HSE, NEBOSH and BSC*



Rethink the normal

# The impact of COVID-19

- The current pandemic has significantly changed the way we live, learn and work
- The 'lockdown' has meant we have had to rethink what was previously considered 'normal'
- Economic considerations are important but mean nothing if human life is not protected
- Organisations are adjusting the way they work to survive and to protect workers and other people in their workplace
- It is crucial that we all continue to learn
- The need for a deliberate managed response is key



Rethink the normal

## Some context

**"Conventional offices are dead, the conventional way of working is dead; we just have to accept it," Guy Lawrence, CEO of Vodafone, Think Bigger (2012).**

- The traditional 'office' workplace has been evolving for many years
- Many organisations have, where possible, recognised the benefits of hybrid / remote working
- Very few roles resulted in being isolated from a team for long periods however
- 'Tech' solutions are evolving quickly



Rethink the normal

# What is agile working?



- Agile working means that employees can work from a location that suits the activity that they are doing:
  - Employees that are taking meetings on the telephone all day may choose to stay at home
  - Or they may be travelling to see a client, so they may choose to work in a coffee shop
  - Another option for agile working could be that employees can split their day to suit their lifestyle
- A significant factor in agile working, is that employees have some element of control in how and where they work

Rethink the normal

# What is activity-based working?



- Activity-based working recognises that people perform different activities in their day-to-day work
- Requires various work settings supported by the right technology and culture to carry out these activities effectively
- By creating a work environment based on this principle, a space can be created that is specifically designed to meet the physical, mental and virtual needs of individuals and teams
- Enables an employee to make decisions about the work they are doing and how they do it
- Leads to empowerment and positive control
- Enabled by the employer providing the right setting for the activity taking place

Rethink the normal

# Benefits of good work

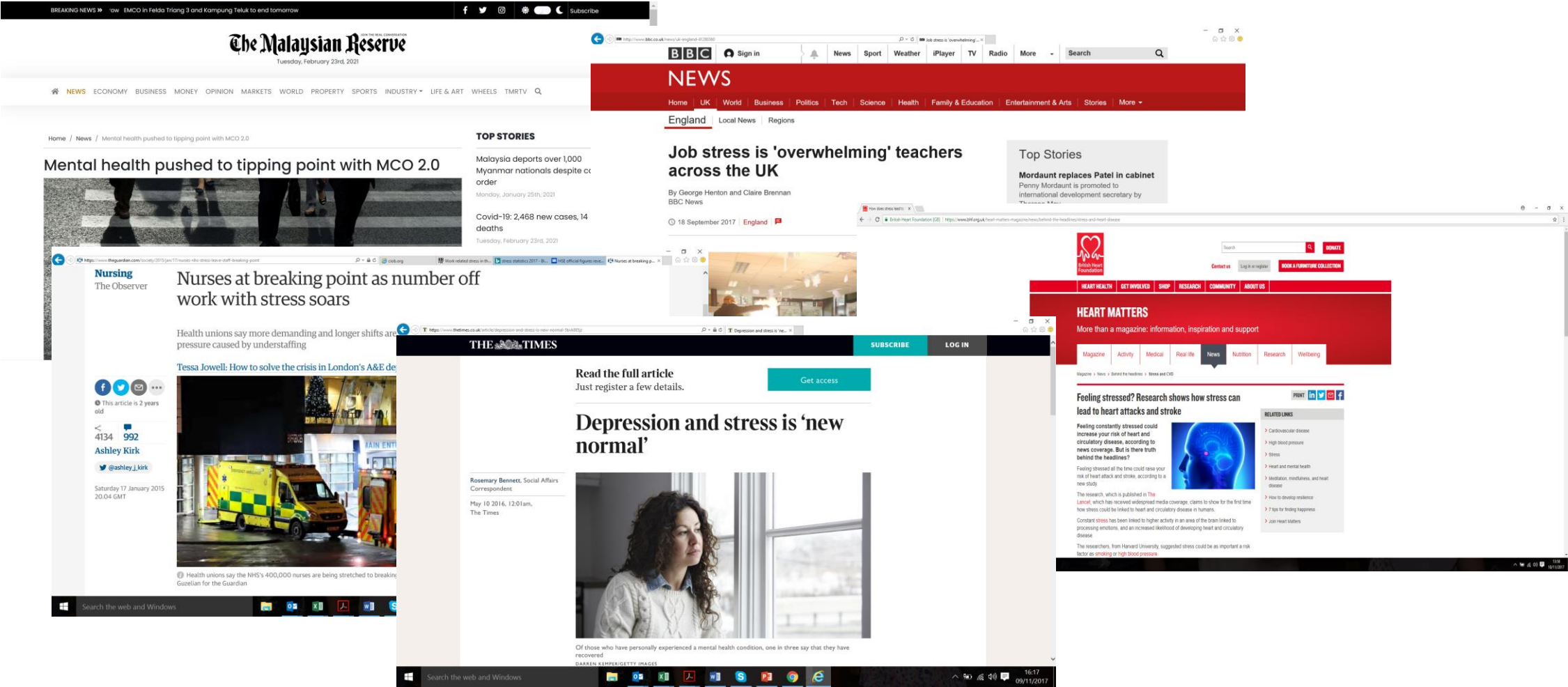
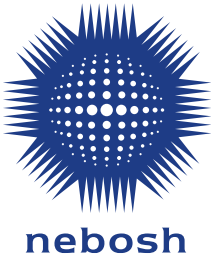
- The workplace is one of the key environments that affects our mental health and wellbeing
- Work can promote or hinder mental wellness
- Work provides:
  - a time structure
  - social contact
  - collective effort and purpose
  - social identity – defining oneself
  - regular activity – organizing daily life





# Rethink the normal

## Size of the problem



Rethink the normal

# Defining our future



- The pandemic brought about change to many businesses
- Temporary v using the best practices and lessons learnt to define our future
- Embracing and embedding technology
- A different culture and mindset
  - Leadership skills
  - Mental health
  - Performance management
  - Virtual teamwork



Rethink the normal

# The challenges



- Changes to processes, high demands
- Pressure and frustration due to lack of guidance and support
- Lack of team communication, isolation from colleagues
- Reduced collaboration
- Building trust – leadership and management
- Training people in online and digital tools
- Virtual meetings need to be enhanced with tools to improve collaboration for example replicating the flip chart
- Helpdesks and technical support

Rethink the normal

# The benefits



- Flexible working models can support lives led at home, leading to positive impacts in the workplace – inclusive working
- Positive psychosocial impact, with employees welcoming the ability to choose hours, location and the flexibility it allows
- Happier, healthier, and fitter employees
- Ability for employees to connect with their colleagues on different levels
- Positive changes to how people work and collaborate; changes how different teams come together and how individuals plan their day
- Removing the daily commute
  - Reduces the carbon footprint
  - Reduces congestion on the roads
  - Reduces road risk

Rethink the normal

“When we strive to become better than we are, everything around us becomes better too.”

Paulo Coelho

“Change is the end result of all true learning.”

Leo Buscaglia.



# Thank you



*...in collaboration with HSE, NEBOSH and BSC*