**Medical Professional and Health Care Worker Barrier Overview**

This is an engineered flexible film, barrier containment and control device, designed to protect an at-risk healthcare worker from a potentially contagious patient, for example in a GP Surgery or Health Centre. However, the layout of the barrier is highly flexible and could be adapted to very many different working environments.

As an engineered barrier control device, it is likely to provide a highly effective degree of protection versus personal protective equipment (PPE) and in particular, respiratory protective equipment (RPE).

The barrier containment approach described, is derived from implementation of the same type of containment used for protecting workers from highly potent and toxic active pharmaceutical ingredients (potent APIs, HPAPIs).

The device establishes a CLEAN side and a POTENTIALLY CONTAMINATED or “DIRTY” side. The examining health professional is setup and REMAINS on the CLEAN side. This has many advantages including TWO KEY advantages:

1. The health professional is in an environment of HIGH PROTECTION, likely many orders of magnitude higher than PPE and RPE could deliver
2. The health professional resides in a safe CLEAN area that remains clean and which does not need frequent decontamination.

As an **engineering control** it is at the top of the COSHH “hierarchy of control” versus PPE/RPE which is at the bottom of the “hierarchy of control”.

It has been designed and progressed with the following driving attributes:

* It must deliver a much higher level of protection than PPE/RPE in absolute terms and even more so given prevailing PPE conditions
* It must be sufficient to enable a health professional (e.g., medical doctor, nurse or technician) to conduct a sufficiently detailed multi-endpoint medical examination. This has recently been shown to be the case in a mock-up test with testing done by a medical doctor currently on “the front line” of COVID-19 response.
* To be effectively implemented the device must be simple and straightforward to manufacture and it is. A prototype was designed and fabricated in less than 8 hours.
* Manufacturing capacity must be available immediately and it must be rapid and scalable. High-quality advanced manufacturing is available and currently idle. This could be immediately brought into service. Devices can be made rapidly and at scale. It is further scalable at the current facility and could be tasked to other companies with similar capability for even larger scaling.

A team of seven professionals have been working on this for four days (started 21Mar2020), during which the following milestones have been achieved:

* Detailed articulation of the problem, driven by the lack of PPE for medical professionals coming into contact with potentially contagious patients.
* Preliminary design of the device used in mock-up testing
* A risk assessment and standard operating procedure (SOP) for an initial test of the device
* Design and fabrication of the device within 8 hours
* An initial test of the device by a medical doctor, the outcome of which showed that needed medical examinations could be successfully undertaken (Palpation, SATS, Temperature, Blood Pressure, Stethoscope use, Nose/throat swab)
* Videos outlining device use for various medical examination endpoints

The following persons have provided their unbridled and devoted support to getting this to where it is.

J Mason-Home, FRSC – Potent drug safety expert for more than 20 years. Owner HPAPI Project Services Limited

CF – Medical Doctor

J Farris - Certified Industrial Hygienist (retired) with years of experience in worker protection and containment of potent pharmaceutical substances and other contaminants

M Ryder – Flexible containment expert and owner of Solo Containment Limited (advanced manufacture of flexible containment systems)

SK - Consultant Physician in Infectious Diseases

RG - Consultant in Medical Oncology

KB – Nurse currently in the field visiting patients in their homes