Whatever Happened to Standard Precautions?

For almost thirty years, the principles of 'Standard Precautions' or 'Universal Precautions' have governed the way healthcare workers have protected their patients and themselves from transmitting infection. At times of crisis, these principles should not change. What happened?

This is COVID-19 Day 90 for the world, Day 70 for the USA, Day 30 for New York State, and Day 18 for New York Presbyterian Hospital.

For those of us who have worked in the GI Endoscopy world for more than four decades, we have seen the risk of infection transmission to personnel and other patients undergo a series of transformations based on knowledge of risks, complexities of procedures and equipment, and the need to reprocess reusable endoscopes and devices. In the developed world, accessories became almost entirely single-use disposables and, until recently, endoscopes remained the only devices that required reprocessing, although this now is also undergoing a transformation to single-use.

While the risk of endoscope-associated infection from patient to patient has always been the driving force of infection control and prevention in endoscopy, little attention was paid to endoscopy personnel protection until the onset of the HIV epidemic in the early 1980s. In 1987, a CDC document (1) explicitly acknowledged that a history and physical examination alone were insufficient to identify the presence of a potential blood-borne illness in a patient. The Occupational Safety and Health Administration (OSHA) developed a standard in 1991 (2), stating that all blood and bodily fluids of all patients were to be considered as a risk for transmitting HIV, hepatitis B, staphylococcus, streptococcus, tuberculosis, salmonella and other infectious agents. So was born the concept of 'Universal Precautions' applying to potential exposure from blood and certain body fluids (3), later modified to include blood and *all* body fluids under the banner 'Standard Precautions' (4) and the standard required use of hand-washing and appropriate personal protective equipment (PPE) – gloves, gowns, masks with eye protection or face shields. Additional protections were to be taken for airborne precautions, droplet precautions, and contact precautions. In the absence of specific endoscopy-risk recommendations, the ASGE Technology Committee reviewed the topic in 1998 (5) and again in 2010 (6). Standard Precautions were accepted by all medical and nursing GI Societies, CDC, National Institute for Occupational Safety and Health (NIOSH), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and other regulatory bodies. They remain in effect to this day. Outbreaks of highly contagious diseases like SARS, MERS and Ebola required modifications to the PPE to include respirator-type masks.

The current pandemic of SARS-CoV-2 has created a unique risk environment for endoscopy. The response to this threat by individual endoscopists, institutions, national societies, and local, regional and national government agencies was prompt (7-12) but inconsistent and, for some inexplicable reason, the principle of Standard Precautions was completely abandoned. This decision, whether deliberate or pragmatic, was almost certainly because of the fact that there was, and still is, insufficient PPE for everyone that needs it. This is not a valid reason to take such a course of action. In the absence of virus testing, there were and still are valiant attempts to stratify risk for the likelihood of patient infectivity initially based first on travel, then symptoms and known contact with COVID-19 cases and, most recently, regional prevalence. As certain regions of the world became more community-infected and the disease became endemic, such as in New

York State and New York City, it is clear to many of us that there are potentially so many infected asymptomatic individuals who are contagious that no stratification of risk is possible nor safe.

Although all elements of PPE for this pandemic are important, the protection of the faces and airways of the endoscopy team (endoscopist, assistant, technician, fellow, nurse, anesthesia provider, radiology technician) have become the dominant strategy requiring respirator-type masks (N95, KN95, FFP2, FFP3, etc.) and face shields or eye/face protection. There continues to be a shortage of such equipment necessitating compromise strategies for re-using and re-sterilizing respirator-type masks for which they were never intended. The natural predicate of Standard Precautions is sufficient availability of appropriate PPE. The design and composition of PPE have changed little over the years. Why has this not been addressed? Why are we double- or triple-layering materials and putting on up to ten separate items of protective equipment in complicated 'on and off' sequences, not to mention radiation protection when needed, when a purpose-designed all-enclosing virus-resistant suit might be sufficient? Perhaps this pandemic might be the stimulus to create such protection.

Were we too slow and too busy to demand current PPE of sufficient quality and in sufficient quantity, or was it just that our local stocks and national supplies at every level were woefully inadequate? History will analyze the reasons why this happened and how institutions were desperately creative in filling the safety void. Many people have surely suffered as a consequence (13,14) and will continue to do so until this problem is solved. To win this war, we need to prevent healthcare providers from becoming infected and prevent cross-contaminating healthy patients who then bring the disease back to their communities. Social isolation is insufficient if healthcare workers, who are constantly exposed, develop COVID-19 and are unavailable to treat patients or may spread it to colleagues and to healthy patients.

We must apply the principles of Standard Precautions and assume that during the height of this pandemic and probably for some time afterwards, every patient requiring endoscopy carries SARS-CoV-2. We should protect ourselves accordingly.

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