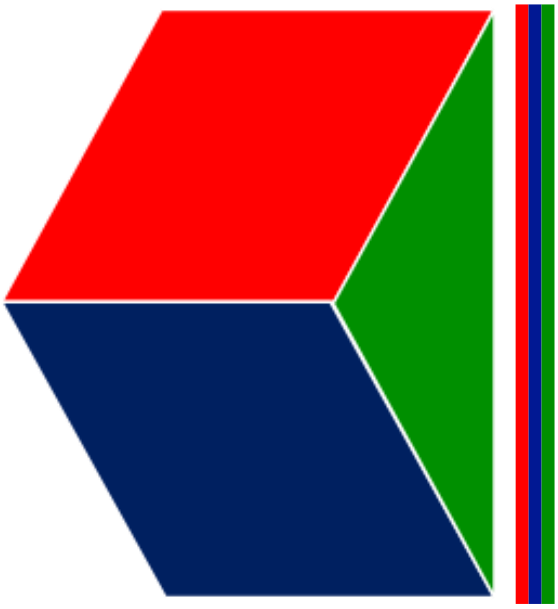

Primary
Response
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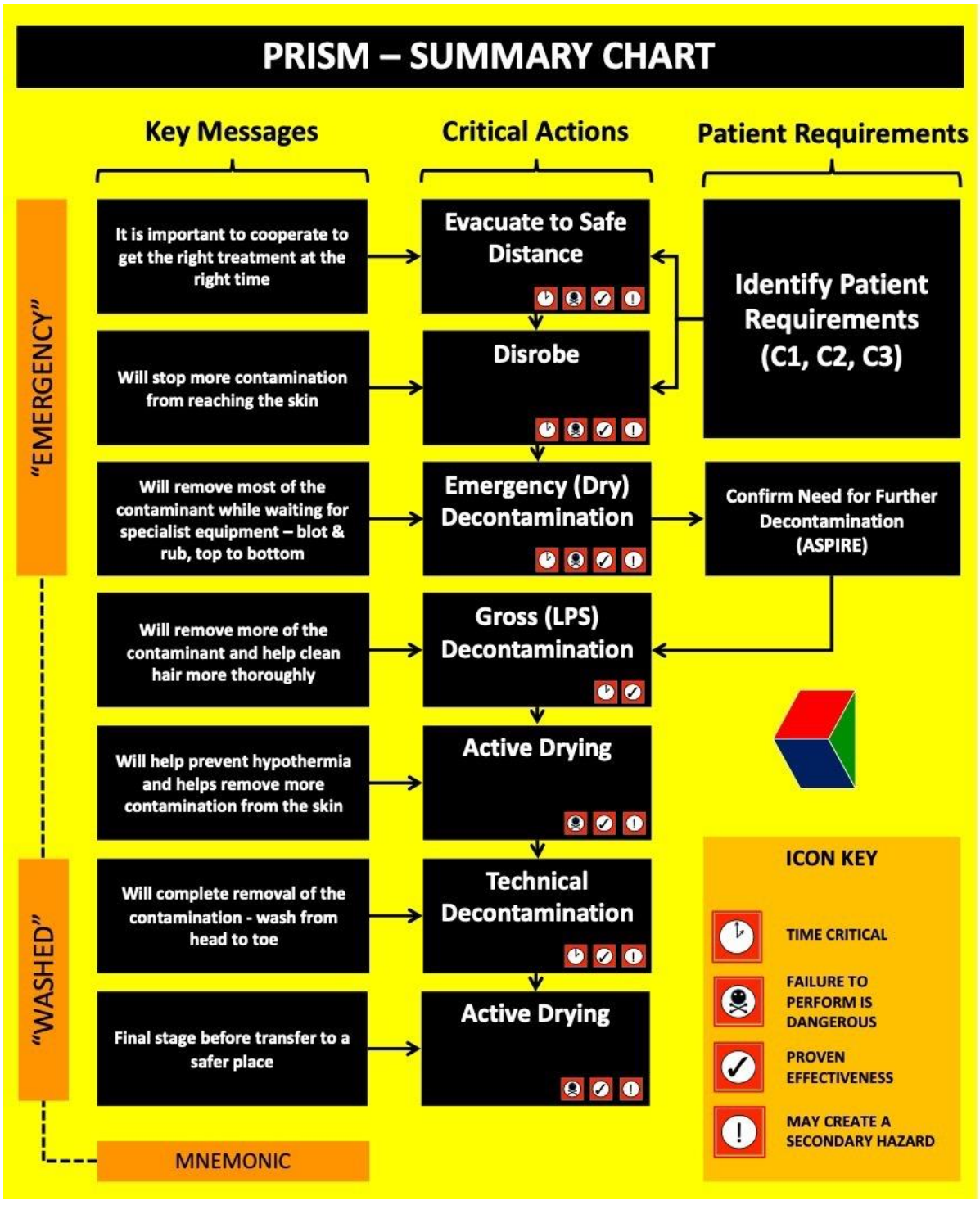
Scene
Management

PRISM GUIDANCE – VOLUME 1

Second Edition

PRISM Incident Response Summary



Emergency Decontamination

Emergency decontamination is the use of any immediately available material for the rapid removal of contaminants from the hair and skin of potentially exposed patients following disrobe. The process is time critical, as the effectiveness of decontamination may decrease rapidly with time (Figure 20). Therefore, emergency decontamination can be considered a form of "first aid" for treating chemical patients, as it does not require proprietary products and can be self-administered by inexperienced individuals providing they receive appropriate instruction from first responders.

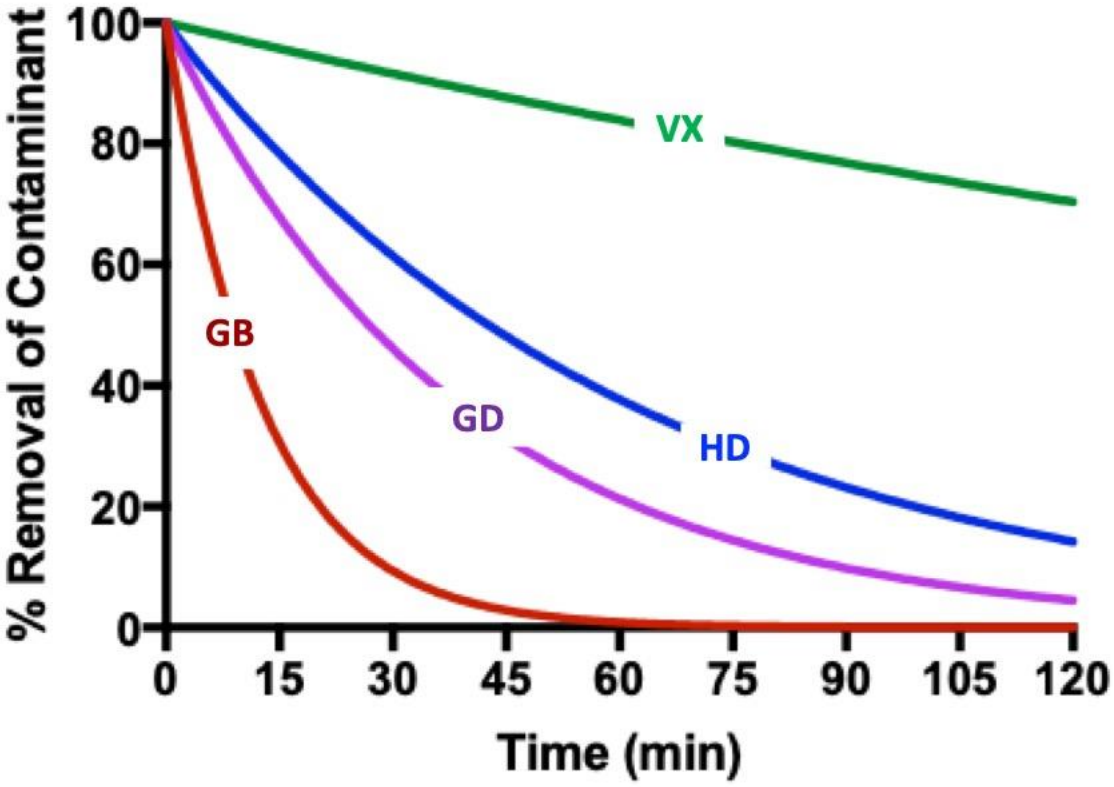


Figure 20: Effect of time on the effectiveness of skin decontamination, expressed as the maximum achievable percentage removal of the chemical warfare agents GB (sarin), GD (soman), HD (sulfur mustard) and VX, as predicted by the ASPIRE algorithm. Note that this does not equate to clinical efficacy (which will be primarily dependent on the percutaneous toxicity of the contaminant and the extent of contamination). Aside from the clinical benefit to each patient, rapid decontamination will also reduce the risk to first responders by decreasing off-gassing (inhalation hazard) and limiting the potential for direct transfer of contamination (dermal contact hazard).

Dry Versus Wet Emergency Decontamination

The default option for emergency decontamination should be "dry" (Figure 21). That is, the application of dry, absorbent materials to exposed areas of skin and hair. This is particularly the case for liquid contaminants such as chemical warfare agents, as the application of water to the skin surface may substantially enhance dermal absorption via a phenomenon known as the "rinse-in" or "wash-in" effect (114-117). In contrast, emergency wet decontamination should only be used where the contaminant is overtly caustic or particulate (e.g., powder) in nature (Figure 21).

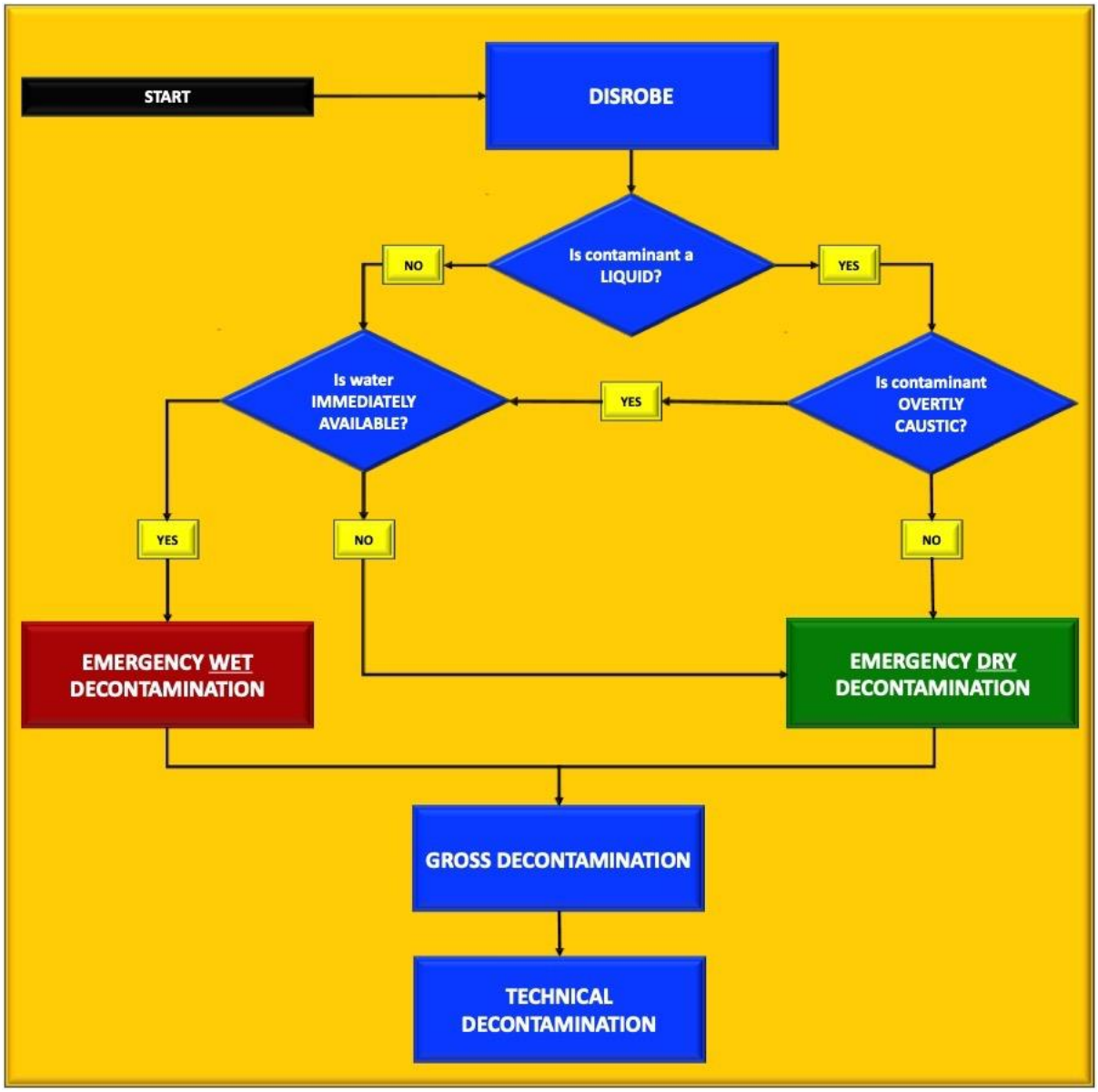


Figure 21: Flow chart to identify the most appropriate form of emergency decontamination. The basic rule is that unless the contaminant is particulate and/or caustic, dry decontamination should be the default option.

Emergency (Self-Care) Dry Decontamination

The introduction of dry decontamination to the incident response process is to establish a rapid means of treating exposed patients prior to the availability of a functional LPS or Technical Decontamination Units. Dry decontamination is fundamental to the concept of the IOR and should be instigated immediately following disrobe if appropriate. The relative merits and disadvantages of dry emergency decontamination are summarized in Table 6 and are discussed in more detail below (p69).

Table 6: Dry decontamination: pros and cons.

Advantages	• Does not require specialist products or an immediate source of water. • Can be performed with any dry, absorbent material. • Produces solid waste, which is easier to contain than effluent from wet decontamination. • Is at least as effective as wet forms of decontamination. • Mitigates the risk of enhancing dermal absorption (via the "rinse-in" effect). • Improves the outcome of subsequent wet decontamination procedures, i.e., has a synergistic effect when performed as part of the "Triple Protocol".
Disadvantages	• Is ineffective against particulate contamination (e.g., powders). • Can be ineffective if patients are not properly supervised. • Less effective than wet decontamination for removing contaminants from hair and underlying scalp skin. • Likely to be viewed with distrust by patients unless delivered as part of an effective communication strategy by first responders.

Emergency decontamination should be performed as part of a series of patient-focused actions that form the IOR. The mnemonic that links these key stages of evacuation, disrobe and decontamination is "EMERGENCY" (Table 7).