



Why choose one equipment type in preference to another?



Whilst there are many types of defibrillator available, CHT classifies these into three groups or tiers, based upon what CHT consider to be their suitability and usage in the community, based upon a 50 point analysis. Others may disagree. This does not reflect technical specifications, which to a non-medically trained person would mean very little. Communities, generally, are only interested in *ease of use*, *cost*, *liabilities* and *reliability*. The ability of the equipment to deliver a 'shock' is not questioned, as all equipment will have had to meet the MHRA specifications and approval in this aspect, although technically some defibrillators offer a wider shock profile than others. Similarly most defibrillators *can* be used in a community setting, depending upon circumstances, and some may be better than others for specific uses. However some equipment is not FDA certified, is more difficult to use for disabled people, or may have confusing features (in a panic) and it is worth considering the impact this may have, as will the ability of the equipment to meet the Disability and Discrimination Act, robustness against damage, easy of use, and possibility for errors.

Group 1 devices Suitable for community use in most aspects, in most rescue conditions, easily supported remotely, and in particular have features that make their use by untrained & panicking users, or special needs users, easy. They are also compliant to DDA and other guidance; give basic rescue information on arrival of the ambulance; have metronomes, clear visual as well as audio instructions, and are easily checked and maintained by the community. Unlikely to cause issues in a community setting.

Group 2 devices Those that have features that make them, in our opinion, potentially less suitable for *untrained* users, and are better reserved for *trained* users such as community responders, or have features that may give rise to issues when used by untrained users, misunderstandings by members of the public, or may need specific equipment to data download for continuity of care.

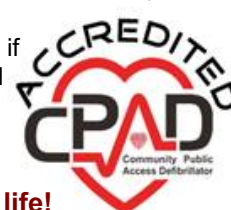
Group 3 devices Have features or functions that give us cause for doubt about their suitability for community/untrained users, may cause issues in untrained situations, or have been untested by CHT.

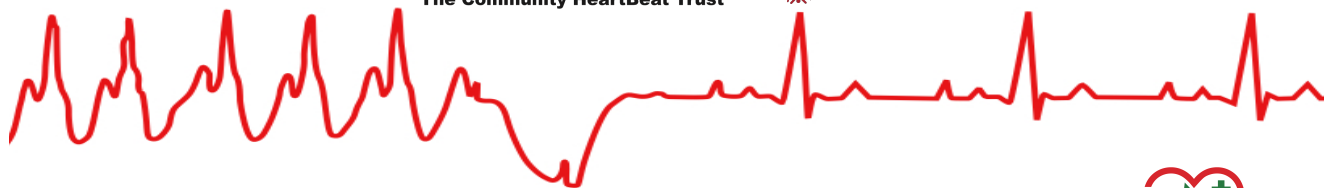
These are CHT classifications and are intended to make the selection of equipment easier for communities and to make sure of the appropriateness of the solution to a community. CHT are not beholden to any particular defibrillator manufacturer, and always seek to offer an objective and unbiased view. We advise following manufacturers guidance in the operation and maintenance of equipment.

CHT will generally offer a community a choice of equipment as it is the community that must make the choice best suited to its needs, dependent upon circumstances. The choice will come from both Group 1 and Group 2 equipment. The exception to this is where a 'Managed Solution' is taken and here CHT will make the equipment choice as we are accepting liabilities and insurances. In this case the equipment will be Group 1.

A similar classification exists for cabinets. CHT currently uses external cabinets from Green Urban, Rotaid and Ce-Tek (all ISO rated companies). We do not use those made by other manufacturers such as Turtle engineering, AIVIA, SADS UK and PhysioControl. We prefer low voltage cabinets, over 240v, for safety. CHT continue to look at all potential offerings, but will only offer those meeting our minimum 'ShockBox' standards, thus being best suited for community use. ShockBox standard cabinets carry the quality logo.

A defibrillator cabinet, in our view, is part of the medical equipment, and should be viewed as such. This is a critical part of the management of the defibrillator and failure in this element could have knock on implications. Defibrillator manufacturers specify temperature and humidity ranges, and the cabinet is there to ensure these are adhered to, thereby reducing the possibility of failure of the equipment. Cabinets should be robust, and also take into account the locations being placed. They also need an IP65 rating to protect from not only moisture, but also dirt and insects. This IP rating needs to have been issued in the 'end user configuration' and not in a lab, or a pre-production base carcass. They should also be manufactured by ISO rated companies for quality assurance reasons, and if heated, comply to the relevant BSI requirements, such as for electrical safety and markings. They can be locked or unlocked, but if locked, should be high quality stainless steel locks, not electronic. We believe cabinets should be highly visible, Hence traffic yellow, and not colours that may be mistaken for fire, police or non-medical. Above all, they should be designed for the purpose, not just adapted cabinets.





How do we assess equipment?



Defibrillators are reviewed independently from the manufacturers, and assessments done against 50 criteria that in our opinion are important to communities. These include:

Adult Shock (<150, 150, >150); Fixed or variable; non-Side specific electrodes; electrode regular checks; Rescue ready indicator; Metronome facility; Visual display screen, and many others. They also include usability tests such as: Ease of upgrade in field; designed for untrained users; ease of use - general CPR guide visual (LED or TV); Rescue data display; Ease of use by children; Ease of use by non-English speakers, or people with disabilities, and more.

Each of these criteria are set a score and the device marked against this score, based upon the manufacturers specification sheets. Those scoring more than 40 are grouped as being very suitable for community use, those scoring less than 20, are probably not the best devices for community/untrained users. Those between are best suited to trained users.

A similar classification is used for the cabinets. Those passing the tests are given the 'ShockBox' marque as a signal of *quality, safety* and *suitability* for community use. These include:

- The cabinets have been made to a high standard, by manufacturers that are themselves ISO rated – put simply they are quality and have to meet international quality standards.
- They have been tested by CHT to be declared fit for purpose.
- Paint is UV stabilised, and will not degrade in sunlight.
- Door seals are ISO rated, and have not been painted over, or otherwise compromised.
- They have low levels of condensation.
- They are electrically safe, meeting relevant BSi regulations and guidance
- If heated, the heater is appropriate for the task and will not cause overheating, thermal yoyo'ing, dangerous 'hot spots' and other items that may cause damage to the equipment, or overheat the external wall of the cabinet.
- They do not discriminate against sectors of the public, and are compliant to relevant Disability or Discrimination legislation
- They are certified as being IP65 in their *end user* state. Ie they are water, dust and insect resistant in the condition they will be used (not in the factory).
- They come complete and ready to use, and do not have to be self assembled. Self assembly means that the functionality, structure, anti-rust, and IP rating cannot be guaranteed.
- Where locked, the locks are of a high standard made from stainless steel – we avoid electronic and aluminium locks, or those designed for indoor use, due to the potential to malfunction.
- They carry instructions in ICON format, and have features that allow panicking, or dyslexic, or non-English speakers to open.
- They carry the international ILCOR AED symbology
- They are highly visible traffic yellow, meeting highways regulations.
- They come with multi year warranties against failure.
- They are backed by a support service from the manufacturer. Cabinets do fail, and as these contain medical devices, need urgent attention to rectify.

