Appendix A Physical Assessment (Fitness Test) for A&E and PTS candidates

Background

Scottish Ambulance Service (The Service) has required candidates to undergo a physical capacity test for decades. The Service commissioned the University of Edinburgh (Phys Ed) to devise a testing regime for both A&E and PTS candidates in mid 1990s (neither the Service or the University are able to produce a copy of the original report). This followed a seminal report in the British Journal of Industrial Medicine in 1991 examining the levels of physical capability of crew in Belfast causing Services across the UK to revise what measures they had in place.

'Fitness Tests' can be basically divided into two types; *Functional Capacity Evaluations (FCE)*, and *Occupational Tests*.

FCE models, often based on a rehabilitation/prognostic approach rather than 'healthy' population screening, can involve measuring blood pressure, Body Mass Index, grip strength, leg and back flexibility etc. Equipment to test used may be steps, *ergocycle*s, grip dynamometers, push-pull bars etc. This model of testing generally requires centralised testing due to the equipment used, but also payment of a licence to use the accompanying software. FCE indicate a person *might* be able to undertake the task depending on a chosen threshold/norm, –the choice of 'pass or fail' measurements could be challenged on the grounds of being discriminatory

The *Occupational test* approach can have candidates undertake an actual task (carry-chair carry on stairs with dummy or live 'patient' by prospective recruits), or exercises are chosen to mimic actual tasks but in a controlled manner. The rationale for deciding a 'pass or fail' is identifying can *this* individual actually manage tasks specific to their prospective role.

The Service chose the Occupational Test as it assesses if the potential employee can actually manage the tasks specific to their role.

The Scottish Ambulance Service Test (last updated 2020)

It is the same test for A&E and PTS crew. The test is preceded by a brief medical test and questions to assure the wellbeing of the candidate and their understanding of the various components of the test.

The test(s) consist of:

- Familiarisation/ warm up.
- Stepping off a 20cm platform carrying 10kg (2x 5kg). This represents carrying response equipment up a flight of stairs to a job. A metronome is set at 100bpm.
- Chest Compressions for 2 minutes. The purpose is observe the candidate's ability to kneel and conduct chest compressions – the efficacy of the compressions themselves is not considered.
- Manual Dexterity Test. The current iteration is the candidate is first shown how to assemble a Bag/Valve/Mask and ensure an oxygen flow. They then repeat the task. This tests their observational skills but also their fine motor skills, in particular after the stepping and chest compression exertions.
- 3 minute Step (carrying 30kg (2x15 kg). This is to replicate carrying a patient down (or up) stairs.

‘Step tests’.

There are a number of validated ‘step-tests’ in use and applied by other organisations such as Fire and Rescue. The SAS variant is seemingly not tied to a specific physiological response model. It can therefore solely be considered to mimic carrying a load up or down a flight of stairs.

Height of Step. The agreed height of the step is 20cm. It is essential this is universally applied to address the risk that variable step heights between centres could be considered discriminatory (20cm reflects the UK standard step height).

Cadence.

A rate of 70 – 80 bpm is reflective of a natural stepping speed. As the validity of the test is based on reflecting ‘real life’ it is suggested the metronome cadence is reduced to 80bpm.

Weight Characteristics.

Weight. The initial 10kg carry is seldom questioned, the 30kg more so. The 30kg exceeds the HSE lifting guidelines therefore must be risk assessed. The identified control measures are to avoid the task, or failing that mechanise the task. Neither control measure can be universally adopted in ambulance work. The 30kg effort is significant however is less than carrying the 1st percentile adult male between two.people. The purpose of the extended carry is to increase the effort required without assuming an excessive weight, which means the candidate can safely put the weights down and avoid harm if the effort becomes too great.

Shape and Size. There is the option of using a barbell or dumbbells. The latter usually remain fully assembled (less chance of weights working loose) and are easier to transport. Concern has been noted that a minority of smaller stature candidates find the grasp handles too wide for their natural power grip. The Olympic committee do specify a narrower bar (25mm rather than 28-32mm for men). It should be noted though carry chairs generally have smaller handles, equipment such as orthopaedic stretchers do require a slightly wider grip. Seeking barbells with a 25mm diameter handle is recommended for new purchases. Notwithstanding it is recommended that candidates are allowed to wear weight lifting gloves. The rationale is this will allow for better grip of the bars (candidates may be nervous and clammy, using gloves also counters nuanced differences in grip design/profile).

Period of Carrying Weight. The 30kg weight is carried for 3 minutes in the A&E test, and the same, 3 minutes in the PTS test (one break allowed).

Chest Compressions-

Chest Compressions for 2 minutes. The purpose is observe the candidate’s ability to kneel and conduct chest compressions – the efficacy of the compressions themselves is not considered.

Dexterity test (BVM assembly)

The candidate is first shown how to assemble a Bag/Valve/Mask and ensure an oxygen flow. They then repeat the task. This tests their observational skills but also their fine motor skills, in particular after the stepping and chest compression exertions.