Instructions for Spirometry:

•Prior to testing, the patient's condition should be stable (ideally 6 weeks since the last exacerbation but spirometry should be performed before hospital discharge for an exacerbation of chronic obstructive pulmonary disease.

•Standing is not mandatory but may provide better results. Sitting is safer for the elderly and infirm; if sitting, then the patient should sit straight up, with their head slightly extended.

•Breathe in maximally.

•Hold the mouthpiece between the teeth, and then apply the lips for an airtight seal.

•Breathe out as hard and as fast as possible. The patient should aim for maximal flow at the moment expiration starts. With handheld devices, watch the vane rotating, and make sure it does not start rotating while the spirometer is brought to the lips, thus avoiding artefacts.

•Keep breathing out until the lungs are 'empty'.

•Some get the users to practise just emptying their lungs, ie to do a slow vital capacity (SVC - the amount of air that can be breathed out during the largest possible breath when breathing gently) before getting them to repeat the same as quickly as possible. This allows comparison of the SVC with the forced vital capacity (FVC - the maximum amount of air a person can expel from the lungs after a maximum inspiration) and allows the user to discard poor attempts where the FVC is below the expiratory volume.

•Limit the total number of attempts (practice and recording) to eight.

Three satisfactory blows should be performed and best values taken for interpretation. Criteria for satisfactory blows are:

•The blow should continue until a volume plateau is reached - this may take more than 12 seconds in severe COPD.

•FVC and forced expiratory volume in 1 second (FEV1) readings should be within 5% or 100 ml.

•The expiratory volume-time graph should be smooth and free from irregularities.