Peak flow meters - single patient use - a solution to the problem?

Bernard R Garb

There is a current debate on the use or misuse of Peak Flow Meters in clinics - should they be used for different patients? In recent communication with the PCRJ Editor I was surprised that a UK Primary Care Trust was no longer intending to use Peak Flow Meters because of fears of cross contamination, based on the misconception that all Peak Flow Meters are only intended for Single Subject Use; this has come about due to the labelling requirements for NHS use

This also highlighted the wider debate on the value of Peak Flow Meters in the diagnosis and management of asthma. A Spirometer is always regarded as the 'proper' tool for measuring pulmonary function, but does the simple, inexpensive Peak Flow Meter have a place in the clinic

It is difficult for healthcare professionals to keep up to date as the healthcare environment and legislation becomes increasingly regulated. A reputable manufacturer is under obligation to provide clear and concise instructions to the users of their medical devices. As a consequence, these User Instructions are continually being updated and improved, so the latest Instructions are a good source to interpret current legislation, guidelines and good practice. I make no apologies for quoting extracts, in italics, from relevant current User Instructions below, which will I hope help to clarify the debate. A sample of a current Peak Flow Meter User Instruction Leaflet is available free of charge. Vitalograph also has a range of educational materials on spirometry and Peak Flow

It is clear that these instructions anticipate either home use or use in clinic. I think the root of the misunderstanding is the Drug Tarif Specification 5 which stipulates that NHS Prescribable PFMs must be labelled 'Single Use'. Some healthcare professionals are obviously unaware that there are other types of Peak Flow Meter available in the UK. The normal types have a proper (linear measuring) scale as well as instructions for cleaning and use with multiple subjects

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Asthma Care in Partnership with your Physician
"Your doctor will take the time to educate you in self-management of your asthma. This will start upon diagnosis and continue with all members of the healthcare team. Your Management Plan will be tailored to your needs, but will include: basic facts about asthma; roles of medication and Peak Flow Meter; environmental control measures; when and how to take rescue actions

How do I get an Action Plan
"Only your doctor can determine the best action plan for you. This is likely to be preceded by an initial assessment followed by a diagnostic phase. During the diagnostic phase you will need to record your peak flow scores. Your Action Plan is then assessed against your peak flow scores over several days. Your treatment and/or the action plan may be changed following the diagnostic phase. This procedure may be repeated until your optimum Management Plan is proven

Q. What is my Normal Value
"Your 'Normal Value' is the best Peak Flow value that you can achieve. This is your '100%' or 'reference' value. Population normative standards are not clinically useful in ongoing serial monitoring of your asthma

"Important Note: Only your doctor or specialist nurse should complete or change your Action Plan, so it is important to take your mete with you whenever you visit the doctor. If you are starting a new management plan your doctor will need to see your Peak Expiratory Flow Record Chart as well

"The clinic must educate, show the asthmatic how to use a Peak Flow Meter and determine the patients own 'Normal' (Best) value in order to make the Management Plan. If the subject has not yet been prescribed with a Peak Flow Meter the clinic must provide one. If the subject remembers to bring in his Peak Flow Meter what if it is over three years old or if, on testing against a calibrated spirometer, it proves out of tolerance? It must be disposed of in either case.

"So, the Clinic should have Peak Flow Meters, but since they are a measuring device in a clinical setting they must be subject to the same controls and traceable calibration as any other measuring device. This is a simple procedure that the clinic must set up, or get a competent service provide

Care and Cleaning of your Peak Flow Meter
"Your Peak Flow Meter should continue to give reliable measurements for up to two years, after which time you should ask your doctor for a new unit. Avoid crushing the unit and keep it clean and dust free. If you suspect the unit is damaged or is measuring incorrectly, contact your doctor immediately. The outer surfaces should be thoroughly cleaned and disinfected at least every month, more often if necessary. We recommend the use of an alcohol wipe, paying special attention to the mouthpiece area. Material: Recyclable medical grade ABS plastic.

"In Clinic: Use disposable SafeTway mouthpieces to prevent cross-infection risks; Certify calibration at least annually.

Hospitals and surgeries normally purchase directl from Vitalograph and we sell many meters of the No NHS type to such clinics for multiple subject use. Ou standard Peak Flow Meter (Cat Nr 43201) would b an example. But the use of disposable mouthpieces with an integral one-way valve, is essential.

The SafeTway mouthpiece protects against cross contamination between patients due to its uniqu patented valve which stops inhalation from the Pea Flow Meter. Due to the low cost compared t Bacterial Viral Filters and their simple yet effectiv patented design, the SafeTway mouthpieces ar increasingly popular in Clinics. They also have special coating certified to 90/128/EEC to prevent li bleeding and an inner lining to guard agains cardboard dust inhalation. ■

Vitalograph donates £1 to Lung Research for ever SafeTway mouthpiece box sold

Peak flow meter manufacturers comment - single patient use Ferraris Medical Limite

Graham Pec

Intended us
The now common, low cost, plastic, peak-flo indicators, available by prescription, intended fo personal use in asthma management programmes, ar single patient use devices. 'Single patient' means tha only one subject, due to the risks of cros contamination, should use the device. Single us devices are available for the masses, in low cost form but by design will often have some of the followin properties

- No inbuilt cross-contamination counter-measures
- Poor resilience to disinfection
- Limited service life
- Lowest absolute accuracy amongst peak-flow measurement devices

For these reasons, any question of use of such device in multi patient applications must be dispelled

The provision of such a device to the 'single patient' i consistent with these properties. The issue of self contamination is mute, the service life is consisten with the duration of use, and the relativ measurements soon become more important than th absolutes, (regardless of Wright or ATS scal differences)

Where multi-patient use is necessary for a peak-flo device, a suitable multi-patient device should b chosen, the chief differences being the improve disinfection properties of this type of device, longe service life and better durability of measuremen accuracy

What contamination
When a sick person visits the doctors office wit symptoms that require peak-flow measurement, i there a chance the person has a respiratory infection

If this person blows with all their might into a peak flow device, will any aerosol be deposited in an about the peak-flow device

If another person uses the device with no intermediat disinfection, could that person contract a cros infection
It would seem unlikely that the answers to all th above questions are negative in all cases, but we nee to cater for all cases

Mitigating circumstance
Some devices are specified to have non-return valves and with disposable cardboard mouthpieces, the might seem safe

Some devices may be specified as being usable with microbial filter

There is a wealth of anecdotal evidence amongs experienced workers in the field of respirator measurement that cross contamination is a non issue none of them ever having cultivated a significant bu from a breath hose or the innards of a spirometer bell

Responsibilit
For a few years now the European directives, t which manufacturers are increasingly bound, hav unambiguously stated that where a device is able t be disinfected between multi-patient uses, th instructions should be supplied by the manufacturer and invariably a validation on such instruction will b required. (The American FDA deals particularl strictly on this issue
As responsible manufacturers, we have to put patien safety first, and be sure every application of ou devices is beyond question

Cos
Being manufactured for prescription, the low cost plastic peak-flow devices are easily obtained for nex to nothing. A proper multi-patient device, on the othe hand, may cost several hundred pounds. However, th significance of intended purpose must not b overlooked, and the top-drawer, plastic device wit cardboard attachments should be seen as somethin between at best a cheap solution, and at worst a unacceptable risk

Trend
The use of disposables on a disposable device i something of a paradox, but in the extreme, the cos of the throw away part is all-important

Some manufacturers appear to be addressing this b the use of filters, plain mouthpieces or valve mouthpieces.
The absence of reported cross infection is surely no enough to substantiate this practice, and cost may b compromising good practice.

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