



GUIDELINES FOR HOME NEBULISER ISSUE TO ADULT RESPIRATORY PATIENTS IN NHS SURREY

Introduction

The aim of these guidelines is to support the implementation of a structured, evidence based, quality, cost effective model for the issue and community use of compressors and nebulised therapy for the relevant population within NHS Surrey.

While day-to-day practice shows that nebulisers are used more widely, in fact, there is relatively limited evidence comparing the use of home nebulisers versus other modes of drug delivery. In asthma, nebulisers are only recommended in the treatment of severe acute asthma but not for chronic asthma. There is limited evidence supporting the use of home nebulisers in COPD, cystic fibrosis, palliative care (inhaled morphine for terminal breathlessness) and HIV/AIDS.

Nebulisers should not be seen as an easy alternative for those few patients unable to acquire and/or retain adequate inhaler technique. Nebuliser loading and operation requires manipulative and cognitive skill, and if lack of such skill is responsible for inadequate technique with inhaler devices it is likely that this may also be the case with a nebuliser. Nebulisers, like large volume spacers, do however have the advantage that carers can be trained in their use and provide useful support.

Note: this programme does not aim to replace *existing* nebulisers already issued to Surrey patients with new ones. Existing nebulisers will only be replaced if they are no longer functioning and cannot be repaired under the existing service agreement or have outlived their pre-determined life-span and would require replacement anyway.

1. Referral of New Patients

- All requests for the issue of a home nebuliser in respiratory patients should be made using the Standard Referral/ Issue form (Appendix 1) which should be completed by the requesting clinician (including GP referrals to respiratory care teams).
- All sections of Part 1 of the referral form must be fully completed and the reason for the request must be identified clearly.
- The referral/ issue form should be sent to the appropriate Respiratory Care Team for assessment and processing.
- A compressor and nebuliser consumables will then be loaned to the patient by the RCT for two weeks.
- After two weeks the RCT will assess the effectiveness/ ongoing need for nebulised therapy. If the RCT consider that a permanent compressor is appropriate then the team member will order the patient a compressor (including specified type of consumables) – see section 3.

2. Reasons for Issue

NHS Surrey supports the use of nebulisers in the following:

- COPD: See Appendix 3 for nebulised treatment pathway and follow the guidance below
- Bronchiectasis patients requiring nebulised antibiotics / hypertonic saline
- Palliative Care/ Lung Cancer

COPD patients with distressing or disabling breathlessness despite maximal therapy using inhalers may be referred for nebuliser use if the following is followed:

1. Confirm both diagnosis of COPD and severity. Assess patient's baseline level of symptoms and lung function and ensure that they can use their existing inhaler device effectively.
2. Ensure that patients have tried other appropriate therapy first (both pharmacological and non-pharmacological e.g. breathlessness and anxiety management, chest clearance).
3. Optimise existing inhaled therapy using a hand-held device/aid which the patient is able to use (+/- spacer device).
4. If these measures are not beneficial, try increasing the dose of inhaled therapy via hand-held inhaler.
5. If the patient responds poorly, consider a trial period of home nebuliser therapy with careful evaluation of response (complete the Standard Referral/ Issue form – Appendix 1).
6. Assess the patient's response to 2 weeks of therapy (See Appendix 4 – Assessment of Subjective and Objective Response to Therapy).

• In the event of patients not meeting any of the above requirements, individual cases may be discussed between the referrer and the Respiratory Care Team. A respiratory consultant can request a nebuliser for indications outside of these guidelines providing the reason is documented in the referral / issue form. The forms will be audited on a 6 monthly basis initially and information from this will be used to inform policy update and review.

3. Issue of machines

• The Respiratory Care team after assessment of the referral forms will loan a compressor and enough consumables for a two week trial to the patient.

• Following the two week trial period, patients must be assessed for effectiveness/ ongoing need for nebulised therapy by a RCT member. Part 2 of the referral/issue form (Appendix 1) then needs to be completed to indicate if the patient requires on-going nebulised therapy.

• If, following the 2-week trial period, ongoing nebulised therapy is deemed necessary, the RCT member will educate the patient about how to use the nebuliser, how to maintain the machine and how to obtain disposable supplies. Patients will be asked to sign Appendix 2. alongside the RCT member, acknowledging that training on the use of the equipment has been delivered, that they accept responsibility for care of their permanent machine and cleaning of the consumables and that this machine will remain the property of Phillips Respironics and that they will contact the RCT/ Phillips Respironics should they no longer require it. This will be supported by written information with contact details in the event of any problems encountered.

• The RCT member will then complete and fax the order form (Appendix 2) and a completed Appendix 1 to NHS Surrey on **(01372 209 361)**. The pharmaceutical commissioning team will then approve funding, give it a Purchase Order Reference and send it to Phillips Respironics who will deliver a compressor with the specified

consumables to the patient (consumables will automatically be replaced annually by the supplier). At this point the courier will also collect the loaned machine and arrange its return to the Respiratory Care Team.

- The compressors are owned by Phillips Respironics and leased to NHS Surrey on a monthly basis. Phillips Respironics will be responsible for ensuring that these machines have had a certified Portable Appliance Testing (PAT – a required electrical safety check) prior to delivery. Once they have been issued to the patient, Phillips Respironics will invoice NHS Surrey on a monthly basis.

- Patient need/preference for delivery system will be assessed (i.e. face mask/mouth piece/tracheostomy mask) by the RCT member. Patients will be encouraged to use mouthpieces where possible as opposed to face masks in order to reduce the incidence of eye irritation. The RCT member will complete the compressor order form (Appendix 2.) and specifies which delivery system should be delivered to the patient on an ongoing annual basis by Phillips Respironics (Part 1).

- Following delivery of their machine, Phillips Respironics will ring the patient to confirm receipt and explain set-up and maintenance of the machine and consumables.

4. Prescription of Drugs for Nebulised therapy

- Initial prescription of nebulised drugs remains the responsibility of Respiratory Physicians / RCT nurse prescribers.

- Following completion of the initial supply of drugs for nebulisation, the responsibility for repeat prescriptions remains with the patient's General Practitioner unless the drug is classified as "Red" (secondary care prescribing only) on the NHS Surrey Traffic Light System for Drug Classification (available from <http://www.app.surreyhealth.nhs.uk/tls/tls.asp>). The responsibility for informing the GP of the drugs prescribed remains with the Respiratory Physician / RCT nurse prescriber involved.

5. Follow up Care

- On commencement of nebulised therapy the patient should be followed up as necessary (in line with local and national guidance) by the respiratory specialist. The purpose of the follow up is to review the patient's management of therapy and to identify if respiratory symptoms are improving. The patient would then remain under the care of the Respiratory Care Team in conjunction with their GP.

- As discussed above, following delivery of the compressor, Phillips Respironics will telephone the patient to ensure delivery and that the patient is confident to set up and use their device. They will then conduct follow-up telephone calls every 6 months to ensure the patient remains satisfied and that there are no problems with the device.

- It is the responsibility of the Respiratory Care Team to notify NHS Surrey (highcost.drugs@nhs.net) and Phillips Respironics should a patient no longer require their compressor (discontinuation of treatment or patient deceased) and to arrange retrieval by Phillips Respironics if possible.

6. Maintenance/Service of compressors

- Patients will be able to obtain a replacement compressor in the event of breakdown of their machine, by contacting Phillips Respironics (machines have a three year warranty). Phillips Respironics will then arrange for a replacement compressor to be delivered to the patient (within the UK). As the compressor remains the property of Phillips Respironics they will not invoice NHS Surrey for its replacement.

- The compressor agreed for use in this scheme by NHS Surrey and Surrey Respiratory Care Teams (Phillips Respironics Inspiration Elite) does not require servicing within its 3 year warranty period. At the end of this period, Phillips Respironics will arrange with the patient to replace the compressor with a new one.
- The supplier will provide customer service support weekdays from 9am – 5pm should patients have any questions relating to the use of their compressor or consumables.
- The supplier will contact the patient on a yearly basis to ensure receipt of delivery of new nebuliser consumables (within UK), which will be posted to them automatically.

7. Service Review

NHS Surrey will meet with Respironics for quarterly performance meetings (which respiratory care teams are welcome to attend). The list of reports that will be presented at each meeting include:

- percentage of machines delivered within 3 days of order being placed.
- number of calls to help-line with problems (broken down by RCT), types of problems and if they were able to resolved over the phone or required further action.
- number of extra consumables required (broken down by RCT)
- number of existing patients with broken machines requiring replacement (broken down by RCT)
- number of new patients commenced (broken down by RCT)
- number of complaints (broken down by RCT and type of complaint).

References

1. Brutus L. Evidence regarding the use of home nebulisers in the management of respiratory disease. Draft. 11th May 2009.
2. The Pennine Acute Hospitals NHS Trust. Protocol for Compressor Issue.
3. European Respiratory Society Task Force on the use of nebulisers. *Eur Resp J.* 2001; 18: 228-242.
4. O'Driscoll B. British Thoracic Society. Nebulisers for chronic obstructive pulmonary disease. *Thorax.* 1997; 52 (Suppl 2): S49-S52.
5. British Thoracic Society Nebuliser Project Group. Nebuliser Therapy Guidelines. *Thorax.* 1997; 52 (Suppl 2): S1.
6. Royal College of Physicians. Managing stable COPD. *Thorax* 2004;59;i39-i130. Available at: http://thorax.bmj.com/cgi/reprint/59/suppl_1/i39?ssource=mfc&rss=1
7. Synergy Medical Education. Assessing treatment outcomes in COPD. 2001.

Standard Referral/Issue form for Home Nebulisers to be used by adult respiratory patients in Surrey PCT

Part 1: To be completed by referrer (hospital clinician/GP)

Name: Designation:

Contact Number: Date of referral:

Patient Name	Patient address
Hospital Number	
NHS Number	D.O.B.

Outpatient: ☐ Inpatient: ☐ GP referral: ☐ (Please tick)

If inpatient: Ward: Hospital:

Ward Phone Number:

Do they meet the following criteria? (please tick)

New patient requiring nebulised therapy:	Yes	No
1. Confirmed diagnosis of severe COPD OR Brochiectasis requiring nebulised therapy OR Palliative care/lung cancer		
2. Distressing or disabling breathlessness despite maximal therapy using inhalers (including hand-held device/technique and dosage optimisation and non-pharmacological measures such as breathlessness and anxiety, chest clearance OR Need for nebulised antibiotics demonstrated by sputum culture		
OR		
This is for a patient already receiving nebulised therapy who:		
1. Has a machine which is no longer functioning and cannot be repaired under the existing service agreement or has outlived its pre-determined life-span requires replacement.		
2. Has been re-assessed for continuing requirement of nebulised therapy.		
For all patients:		
3. Has a full explanation/education package been given to the patient/carer?		
4. Has the patient's/carer's ability to use the nebuliser been assessed?		

If the answer to any of these questions is **no** and home nebuliser therapy is considered appropriate, the request must come from a **respiratory consultant** with the rationale for a home nebuliser documented below:

.....
Once completed, send referral form to the respiratory care team

Form reviewed by: Designation:

Respiratory Care Team:

Date and place compressor and consumables loaned if appropriate:

.....
Part 2. Continuing on nebulised therapy after a two-week trial period and requiring their own machine ☐

Do they meet the following criteria? (please tick)

	Yes	No
1. Response to nebulised bronchodilators has been objectively assessed by the Respiratory Care Team as per Appendix 4 (for patients on nebulised bronchodilators only)		
2. Patient demonstrated beneficial response to nebulised treatment and is considered appropriate for ongoing treatment (for patients on all nebulised therapies)		

Assessment completed by:

Designation:

Respiratory Care Team:

Phone Number: Date of Assessment:

'I can confirm that the patient (or in the case of a minor or vulnerable adult with the parent/legal guardian/carer) has given appropriate explicit consent for personal confidential and sensitive information on this form to be passed to the CCG for processing this request for funding and validating subsequent invoices. This includes the CCG Medicines Management Team who are responsible for funding excluded drugs, confirming continuing response to treatments and processing invoices.

If personal confidential and sensitive information has been provided to the previous organisation (NHS Surrey and NHS West Sussex) prior to 1st April 2013 for funding, explicit consent is given for the CCG Medicines Management Team to access this information in order to process funding applications and invoices appropriately'.

Patient Signature: Date:

Appendix 1 and Compressor issue/Consumable order form (Appendix 2) completed and faxed to:

NHS Surrey: **(01372 209 361)** (Please tick) ☐

Appendix 2 Order Form

NHS Surrey - Inspiration Elite Order Form

Appendix 2: Issue form for Inspiration Elite compressor/Order form for consumables for respiratory patients in NHS Surrey who have, after a 2 week assessment, demonstrated beneficial response to nebulised treatment and are considered appropriate for ongoing treatment.

PART 1: To be completed by Respiratory Care Team member

Patient Name:	Patient Address:
DOB:	Telephone number: (for Respironics UK to arrange delivery)
NHS Number:	

Inspiration Elite Compressor and continuing annual delivery of consumables (including tubing & 4 inlet filters) by Philips Respironics please choose one option	Please Tick
Consumables with MOUTHPIECE (1225A)	
Consumables with ADULT MASK (1223A)	
Consumables with CHILD/ELDERLY MASK (1224A)	
VENTSTREAM nebuliser kit with elephant tubing (1771A)	

Health care professional giving advice on use of equipment:

Signed: _____ **Print name:**

Respiratory Care Team: **Phone No:**

Postcode for return of loan machine

PART 2: To be completed by the patient / carer:

- I understand that a compressor will be delivered to my house at the above address and that new consumables will be delivered on a yearly basis. I understand that this remains the property of Respironics UK. If I no longer require the compressor or move outside of NHS Surrey I understand that I will be required to notify my Respiratory Care Team on 01932 723660 and to contact Respironics UK on 0800 1300 845 to organise for the compressor to be collected.
- I understand that I need to see my Respiratory Care Team in order to receive care, support and monitoring and to make decisions about the ongoing need for nebulised therapy
- The use and care of the machine and cleaning of the consumables has been explained to me.

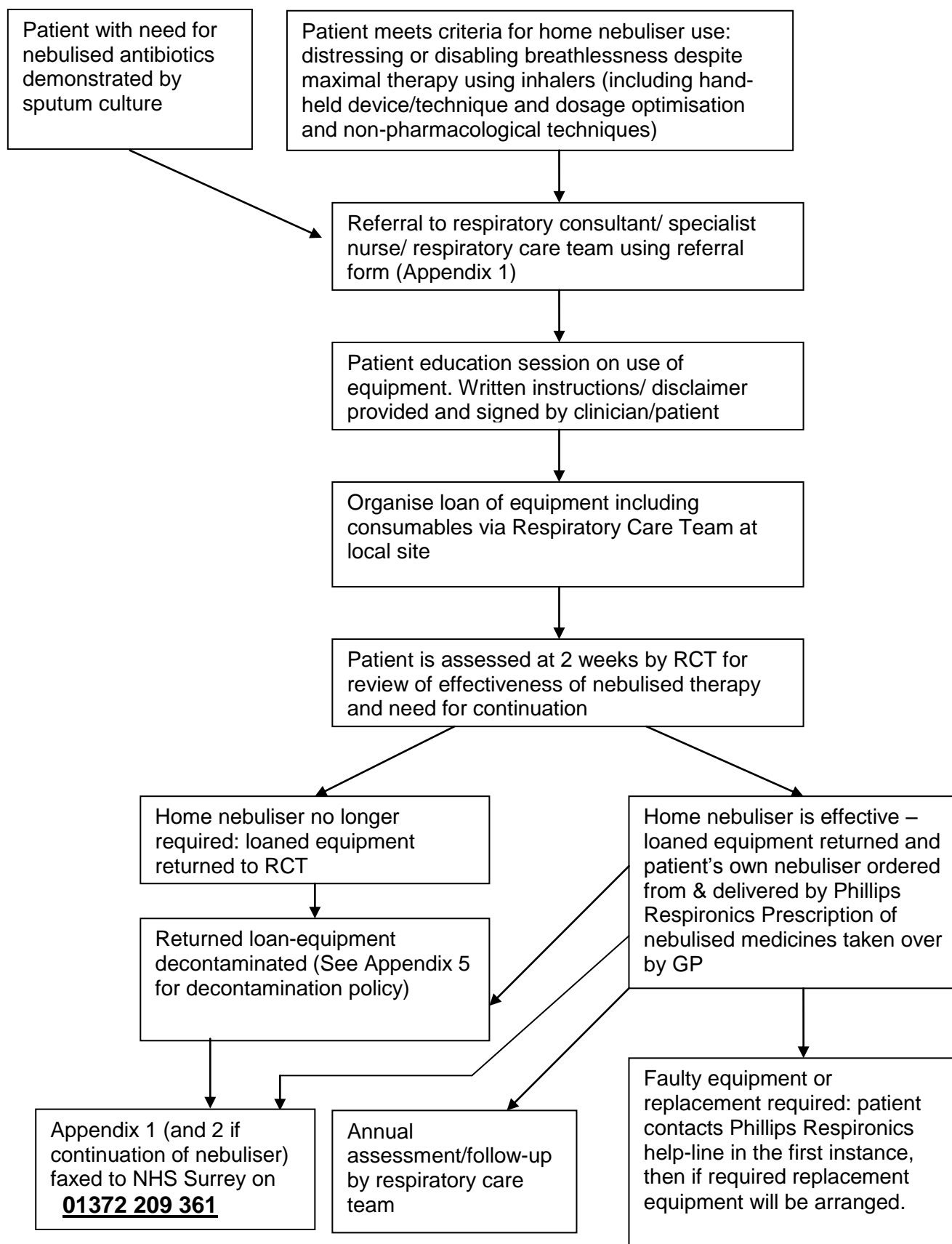
'I can confirm that the patient (or in the case of a minor or vulnerable adult with the parent/legal guardian/carer) has given appropriate explicit consent for personal confidential and sensitive information on this form to be passed to the CCG for processing this request for funding and validating subsequent invoices. This includes the CCG Medicines Management Team who are responsible for funding excluded drugs, confirming continuing response to treatments and processing invoices.

If personal confidential and sensitive information has been provided to the previous organisation (NHS Surrey and NHS West Sussex) prior to 1st April 2013 for funding, explicit consent is given for the CCG Medicines Management Team to access this information in order to process funding applications and invoices appropriately'.

Patient's name & signature: _____ Date: _____

Respiratory care team member: please fax this form once completed (along with a completed copy of Appendix 1) to NHS Surrey: (01372 209 361) for approval of funding. NHS Surrey will then send this on to Respironics UK to arrange delivery

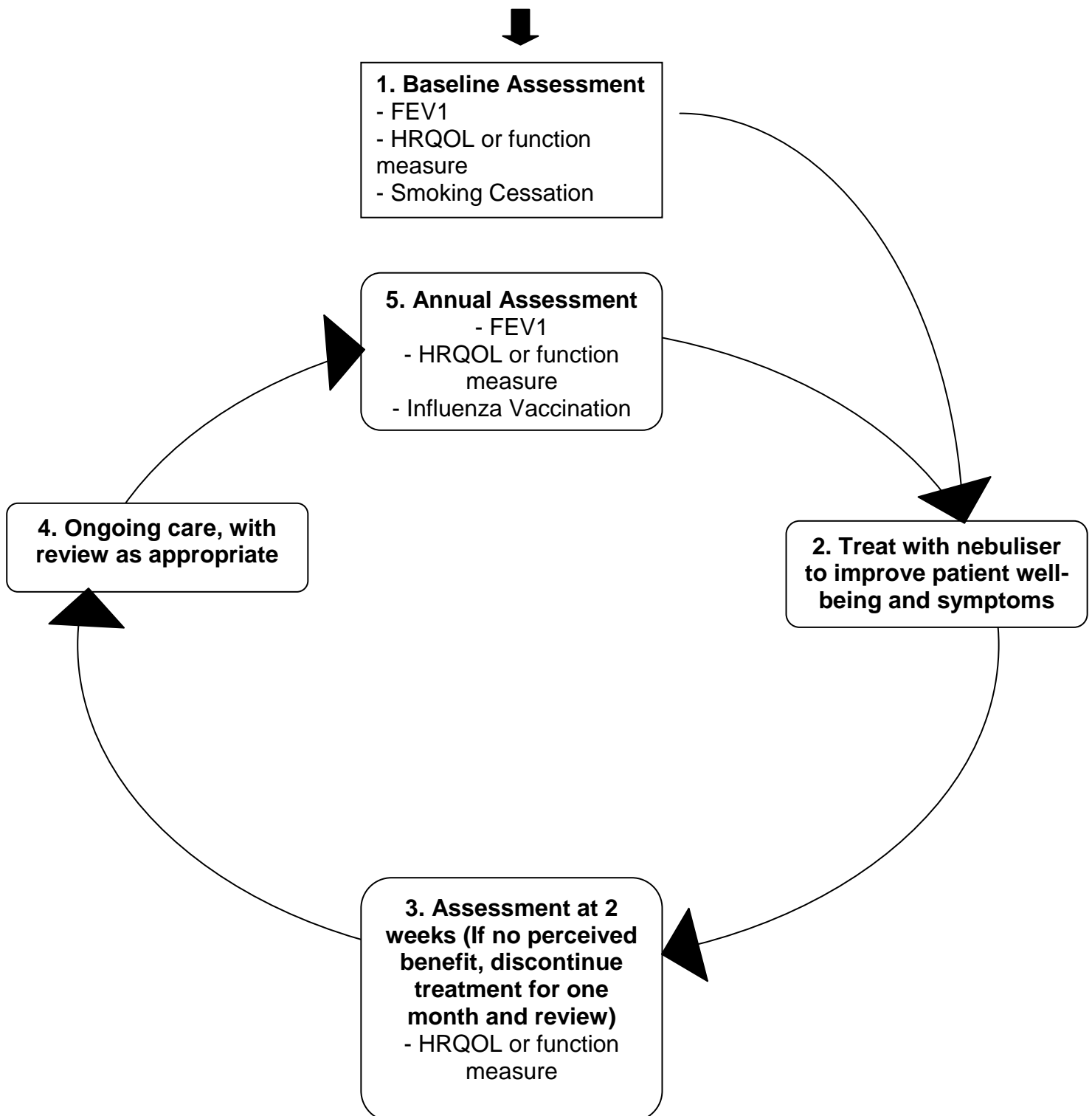
Appendix 3. Nebulised treatment pathway



*All compressors remain the property of Phillips Respironics

Appendix 4 – Protocol for Assessment of Subjective and Objective Response to Nebulised Bronchodilator Therapy

Patient who meets NHS Surrey Criteria for Home Nebulised Bronchodilator Treatment



APPENDIX 5

DECONTAMINATION PROCEDURE



General principles of Disinfection of Compressors and list of recommended disinfection solutions for use in Surrey

Decontamination is the general term for the destruction and removal of microbial contamination and includes cleaning and disinfection.

Cleaning

Cleaning with detergent and water will physically remove most micro-organisms from a surface. Cleaning should always be performed prior to disinfection.

1. Protective clothing (plastic apron and domestic type gloves) should be worn during all cleaning procedures.
2. Cleaning should be performed using warm water and detergent or detergent wipes - **do not immerse equipment or place under running water.**
3. Dry Compressor with single use paper towel.
4. Replace the inlet filter.

Disinfection

Disinfection is the destruction of micro organisms, reducing them to a safe level.

1. Compressor must have been thoroughly cleaned with detergent prior to use of disinfection.
2. Protective clothing should be worn.
3. Clean compressor with disinfection wipes.

Product	Presentation	Usage	Available from	Comments
Detergent	1.General Purpose-liquid detergent 2.detergent wipes	Cleaning of most pieces of equipment and surfaces	Supplies or housekeeping	1.Hot detergent solution: add sufficient detergent to provide soapy water. 2.Do-not over saturate cloth or immerse compressor into water 3. Dry area with disposable single use paper towel.
Supernova® or other approved product which kills spores, bacteria & viruses	1. Surface wipes	For disinfection of surfaces	Supplies	Ensure a good contact of wipe with surface to produce through wetting.