



RE-EDUCATION OF AIRWAY CLEARANCE TECHNIQUES (REACT)

FACILITATOR'S GUIDE

September 2016



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A LETTER FROM ROBERT L. ZANNI, MD, DEVELOPER OF REACT

Dear Colleagues:

I hope this note finds you well. It is my sincere pleasure to welcome you to REACT (Re-Education of Airway Clearance Techniques) - a partnership between CF Centers, patients and caregivers.

The main objective of REACT is to improve adherence to daily airway clearance techniques by re-educating patients in proper techniques and correcting barriers to therapy. When my team and I initially developed REACT in 2006 as a Quality Improvement (QI) Program, our hope was to achieve a modest improvement in average lung function for our patients. In truth, we didn't know whether it would have any impact at all. Once we began using the program tools and educational materials with our patients, we were excited by some of the insights we gained. Patients were using vests that were several sizes too small, they demonstrated poor technique when administering inhaled medications and had an inconsistent understanding about why they were doing airway clearance.

The REACT program tools were designed in a check list format so that significant time would not be added to the average clinic visit. One year after implementing REACT, we saw a 10% average improvement in FEV₁ across our entire patient population and we managed to sustain that improvement over time.

The Facilitator's Guide that follows will provide you with the step-by-step instructions for using each of the REACT program tools.

We look forward to hearing about your experiences as well as your suggestions for improving the program tools in the future.

Kind regards,

Robert Zanni, MD
*Director, Cystic Fibrosis Clinic
Monmouth Medical Center
Long Branch, NJ*

The impact of re-education of airway clearance techniques (REACT) on adherence and pulmonary function in patients with cystic fibrosis: Zanni, RL, Sembrano, EU, Du, DT, et al. *BMJ Qual Saf* 2014;23: i50-i55.



***A LETTER FROM JAN ROBINSON, EXECUTIVE VICE PRESIDENT OPERATIONS,
IV SOLUTIONS/MAXOR SPECIALTY/MAXOR NATIONAL PHARMACY SERVICES***

Dear Healthcare Professionals:

IV Solutions is very pleased to have the unique opportunity to work with Dr. Robert Zanni and the CF Care team from Monmouth Medical Center to support REACT and make it more broadly available to the cystic fibrosis (CF) community.

IV Solutions, a division of Maxor National Pharmacy Services Company, LLC, is a specialty pharmacy located in Lubbock, Texas. Since 1986, IV Solutions has been working with patients, providers, payers and manufacturers to ensure individual needs are met in one streamlined system. Our medication therapy programs are customized and patient-driven, and our Pharmacist-led clinical teams work directly with patients or caregivers to instruct them on how to render various treatments.

The REACT program is another way in which IV Solutions is supporting both patients and providers within the CF community, and we are making it available via the IV Solutions website for CF centers to access and utilize within their own Quality Improvement programs.

It is our hope that by working together, we can improve health outcomes for CF patients.

Kind regards,

Jan Robinson
*Executive Vice President, Infusion and Specialty Therapy Services
IV Solutions/Maxor Specialty
Maxor National Pharmacy Services, LLC*



PROGRAM TOOLS



FORMS:

Form 1: Airway Clearance Techniques (ACT) and Treatment Patient Survey

- **Objectives:** To establish a clinic baseline and gain an understanding of current airway clearance techniques, devices, inhaled medications and adherence of patients.
- **Completed By:** Patient or caregiver (if patient is under age 12)
- **Completed At:** Patient's home
- **Description:** The survey will be sent by the CF Center to the homes of their patients via US Mail and will be completed by the patient or caregiver anonymously prior to any exposure to REACT.

A cover letter (Figure 1) will be sent with the survey introducing the patient or caregiver to REACT. Each cover letter should be customized by the center and printed on the CF center letterhead. The survey and cover letter should be sent with a self-addressed, stamped envelope so the patient can easily return the completed survey to the clinic.

The cover letter includes a “call to action” asking the patient to bring all airway clearance devices and treatments to their next clinic visit. The date and time of the next scheduled clinic visit should also be included in the cover letter.

A few days prior to the patient's CF clinic visit, a designated clinician should contact the patient to confirm their upcoming visit and to remind them to bring their airway clearance devices and treatments to their next in-clinic appointment.

The information collected in this survey is information for the CF center.



Form 1



Completed by Patient Caregiver (if patient < 12 years old)

Airway Clearance Techniques (ACT) and Treatments Patient Survey

Thank you for completing this survey. This survey is the first step in helping your CF Care Team evaluate its effectiveness in educating CF patients and families about airway clearance techniques.

Airway clearance is an essential part of your cystic fibrosis treatment to help loosen and remove mucus from your lungs to prevent infection. This survey will help us work together to improve techniques and treatments to better manage our CF patients.

Please respond to each of the following questions:

| | |
|--|--|
| <p>1. Which of the following do you currently do? (select all that apply)</p> <p>Inhaled Medications and Devices</p> <p>Bronchodilators <input type="checkbox"/> Albuterol Inhalation, Proventil®, Ventolin® or Xopenex®</p> <p>Osmotic Agents <input type="checkbox"/> Hypertonic Saline or HyperSal® _____ % <input type="checkbox"/> Other _____</p> <p>Mucolytics <input type="checkbox"/> Pulmozyme® <input type="checkbox"/> Other _____</p> <p>Anti-infectives <input type="checkbox"/> Abelcet® <input type="checkbox"/> Bethkis® <input type="checkbox"/> Cayston® <input type="checkbox"/> Colistimethate <input type="checkbox"/> Kitabis® Pak <input type="checkbox"/> TOBI® <input type="checkbox"/> TOBI Podhaler® <input type="checkbox"/> Tobramycin Inhalation Solution</p> <p>Inhaled Corticosteroids (ICS) _____</p> <p>ICS / LABA (e.g., Advair®) _____</p> <p>Nebulizers <input type="checkbox"/> PARI LC® Sprint <input type="checkbox"/> PARI LC® Plus <input type="checkbox"/> PARI LC® Star <input type="checkbox"/> Trio™ <input type="checkbox"/> SideStream Plus® <input type="checkbox"/> Altera® Nebulizer System <input type="checkbox"/> eRapid® <input type="checkbox"/> Other _____</p> <p>Other (please specify) _____</p> <p>Airway Clearance Techniques and Devices</p> <p>Chest Physical Therapy (CPT) <input type="checkbox"/> Percussion Therapy <input type="checkbox"/> Postural Drainage <input type="checkbox"/> Percussor</p> <p>Breathing & Coughing Techniques <input type="checkbox"/> Autogenic Drainage <input type="checkbox"/> Active Cycle of Breathing <input type="checkbox"/> Huff Coughing</p> <p>Positive Expiratory Pressure (PEP) <input type="checkbox"/> acapella®/acapella® duet/acapella choice® <input type="checkbox"/> Flutter® <input type="checkbox"/> RC-Cornet®</p> <p>High-Frequency Chest Wall Oscillation or Vest <input type="checkbox"/> The Vest® Airway Clearance System <input type="checkbox"/> SmartVest® Airway Clearance System <input type="checkbox"/> The inCourage™ system <input type="checkbox"/> Frequencer™ V2X <input type="checkbox"/> Intrapulmonary Percussive Ventilation (IPV)</p> <p>When using vest or doing IPV, do you stop to cough? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Other (please specify) _____</p> | <p>2. In what order do you perform ACT and treatments?</p> <p>1. _____ 4. _____ 2. _____ 5. _____ 3. _____ 6. _____</p> <p>3. How long does it take you to do your ACT and treatments? _____</p> <p>4. When do you perform ACT and treatments? (select only one) <input type="checkbox"/> Every day <input type="checkbox"/> Only when I feel like it <input type="checkbox"/> Only when I'm sick <input type="checkbox"/> Other _____</p> <p>5. How many times a day do you perform ACT and treatments? (select only one) <input type="checkbox"/> Once a day <input type="checkbox"/> Twice a day <input type="checkbox"/> Three or more times a day</p> <p>6. Do you increase the frequency of ACT and treatments when you are sick? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>7. Why do you perform ACT and treatments? (select all that apply) <input type="checkbox"/> I understand that it is an important CF treatment to maintain good lung function <input type="checkbox"/> It makes me feel better <input type="checkbox"/> Recommended by my CF Care Team <input type="checkbox"/> Prevents mucus build up <input type="checkbox"/> Not sure <input type="checkbox"/> Prevents infection <input type="checkbox"/> Other (please explain) _____</p> <p>8. Do you feel that your ACT and treatments are effective? (select only one) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Not sure (why) _____</p> <p>9. Are there any issues that prevent you from performing ACT and treatments? (select all that apply) <input type="checkbox"/> Insurance doesn't cover <input type="checkbox"/> It's embarrassing <input type="checkbox"/> Out-of-pocket cost is too high <input type="checkbox"/> Takes too much time <input type="checkbox"/> It is uncomfortable/hurts <input type="checkbox"/> I don't want to <input type="checkbox"/> I'm not sure how I should do it <input type="checkbox"/> It doesn't work <input type="checkbox"/> I'm not sure why I should do it <input type="checkbox"/> None of these <input type="checkbox"/> I don't think I need it <input type="checkbox"/> Other _____ <input type="checkbox"/> I forget _____</p> <p>10. When was the last time you received individual coaching/education from a member of your CF Care Team on ACT and treatments? _____</p> |
|--|--|

Monmouth Medical Center
The Underberg Children's Hospital
Barnabas Health

Re-Education of Airway Clearance Techniques
The REACT program was developed by Dr. Robert L. Zanni and team at Children's Hospital at Monmouth Medical Center, Long Branch, NJ.

Sponsored by IVSolutions, Lubbock, TX



acapella, acapella choice, acapella duet, Advair, Altera Nebulizer System, Cayston, Flutide, Frequencer, HyperSal, PARI LC Plus, Proventil, Pulmozyme, RC-Cornet, SideStream Plus, SmartVest Airway Clearance System, The inCourage system, The Vest Airway Clearance System, TOBI, Ventolin and Xopenex are other manufacturers' brand names and are registered trademarks of their respective owners. References to brand names are made solely for the purpose of assisting CF Centers in the collection of information about airway clearance techniques and treatments used by their patients.



Printed in U.S.A. / September 2015 (Form 1)



Figure 1: Survey Cover Letter

[INSERT DATE]

John Doe
123 Main Street
Any town, ST 12345

Hello [INSERT NAME OF CHILD OR CAREGIVER],

I hope this letter finds you in good health. We are inviting you to participate in a unique educational program: **Re-Education of Airway Clearance Techniques (REACT)** being launched at [CLINIC NAME]. A consistent daily regimen of airway clearance techniques and treatments is critical to maintaining good long-term lung health for people with cystic fibrosis. REACT has been designed to help us work together to achieve the best long-term health outcomes.

REACT is being made available to all of our CF clinic patients and we would like to invite you to participate. Please take the following steps to participate in REACT:

1. **Fill out the enclosed one-page anonymous survey and return it to us in the self-addressed stamped envelope.** This survey is designed to give a clear picture of how effective **we** have been in communicating airway clearance techniques and treatments to our patients. This is very important to our center staff.

2. **At your next clinic visit, please bring the following with you:**
 - **Your airway clearance devices**
(i.e., acapella®, Flutter®, vest, nebulizer(s), meter dose inhaler (MDI), spacer, etc.)
 - **Your airway clearance inhaled medication**
(i.e., hypertonic saline, Pulmozyme®, bronchodilator, inhaled corticosteroids, etc.)

During your **next clinic visit**, we will review how you are currently performing airway clearance. It is therefore very important that you **bring your airway clearance devices and inhaled medications** with you at that time.

We are excited about REACT and hope that you will choose to participate. If you have any questions before your next clinic visit, please contact me at the number (above or below) (or name another contact and add their contact information). We are looking forward to seeing you at your next clinic appointment scheduled for:

Date: _____ at _____.

Kind regards,

Dr. Sally Smith or Center Staff
Director, Cystic Fibrosis Clinic
Institution Name Here



Form 2: Airway Clearance Techniques (ACT) and Treatments In-Clinic Assessment

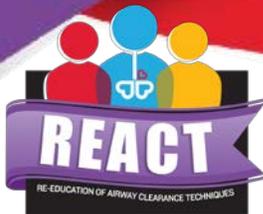
- **Objectives:** To provide the patient (or caregiver) with a quick assessment tool to document the treatment-related at-home behaviors and activities for reference by CF Care Team during this and future clinic visits. The Assessment will assist the CF Care Team in identifying gaps in the current airway clearance behaviors and knowledge so they can focus the re-education on the specific needs of the individual patient.
- **Completed By:** Patient or caregiver (if patient is under age 12)
- **Completed At:** Clinic
- **Description:** The assessment is the first REACT tool the patient will experience in the clinical setting. It should be filled out in its entirety either in the waiting or exam room.

In addition to collecting information about techniques, medications and devices the patient is currently using, the assessment also captures the patient’s behavior during their daily routine at home, how adherent they are to their prescribed treatments and the obstacles to doing their ACT and treatments regularly, etc.

Unlike the survey, the assessment is tied to the individual patient and provides the CF Care Team with an understanding of what is actually happening at home and where there are skills and knowledge gaps that can be improved upon through “re-education” later in the clinic visit.

A copy of the completed assessment should be placed in the patient’s chart (or scanned electronically for upload to EMR [electronic medical record] system) for future reference.

Upon completion, the patient (or caregiver) should give the completed assessment to the appropriate member of the CF Care Team.



Form 2

Survey → **In-Clinic Assessment** → Patient Demonstration → Action Plan

Completed by Patient Caregiver (if patient < 12 years old)

REACT Airway Clearance Techniques (ACT) and Treatments In-Clinic Assessment

Please fill in the information below.

Patient's Full Name _____ Date _____

Patient's Age _____ Date of Birth _____

| | | | | | | | | | | | | | | | |
|--|---|--|--|---|--|--|--|--|--|--|--|--|--------------------------------------|-----------------------------------|--|
| <p>Select all techniques, devices and treatments that you are currently using.</p> <p>Inhaled Medications and Devices</p> <p>Bronchodilators <input type="checkbox"/> Albuterol Inhalation, Proventil[®], Ventolin[®] or Xopenex[®] <input type="checkbox"/> Metered Dose Inhaler (MDI) <input type="checkbox"/> Nebulizer <input type="checkbox"/> Spacer _____ (please specify)</p> <p>Osmotic Agents <input type="checkbox"/> Hypertonic Saline or HyperSal[®] _____ % <input type="checkbox"/> Other _____</p> <p>Mucolytics <input type="checkbox"/> Pulmozyme[®] <input type="checkbox"/> Other _____</p> <p>Anti-infectives <input type="checkbox"/> Abecet[®] <input type="checkbox"/> Bethkis[®] <input type="checkbox"/> Cayston[®] <input type="checkbox"/> Colistimethate <input type="checkbox"/> Kitabis[®] Pak <input type="checkbox"/> TOBI[®] <input type="checkbox"/> TOBI Podhaler[®] <input type="checkbox"/> Tobramycin Inhalation Solution</p> <p>Inhaled Corticosteroids (ICS) _____ ICS / LABA (e.g., Advair[®]) _____</p> <p>Nebulizers <input type="checkbox"/> PARI LC[®] Sprint <input type="checkbox"/> PARI LC[®] Plus <input type="checkbox"/> PARI LC[®] Star <input type="checkbox"/> Trio™ <input type="checkbox"/> SideStream Plus[®] <input type="checkbox"/> Altera[®] Nebulizer System <input type="checkbox"/> eRapid[®] <input type="checkbox"/> Other _____</p> <p>Other (please specify) _____</p> <p>Airway Clearance Techniques and Devices</p> <p>Chest Physical Therapy (CPT) <input type="checkbox"/> Percussion Therapy <input type="checkbox"/> Postural Drainage <input type="checkbox"/> Percussor</p> <p>Breathing & Coughing Techniques <input type="checkbox"/> Autogenic Drainage <input type="checkbox"/> Active Cycle of Breathing <input type="checkbox"/> Huff Coughing</p> <p>Positive Expiratory Pressure (PEP) <input type="checkbox"/> acapella[®]/acapella[®] duet/acapella choice[®] <input type="checkbox"/> Flutter[®] <input type="checkbox"/> RC-Cornet[®]</p> <p>High-Frequency Chest Wall Oscillation or Vest <input type="checkbox"/> The Vest[®] Airway Clearance System <input type="checkbox"/> SmartVest[®] Airway Clearance System <input type="checkbox"/> The inCourage™ system <input type="checkbox"/> Frequence™ V2X <input type="checkbox"/> Intrapulmonary Percussive Ventilation (IPV)</p> <p>When using vest or doing IPV, do you stop to cough? <input type="checkbox"/> YES <input type="checkbox"/> NO if yes, how many times? _____</p> <p>If using vest or IPV, please note your initial settings Pressure _____ Frequency _____ Time _____</p> <p>Do you change your initial settings? <input type="checkbox"/> YES <input type="checkbox"/> NO Other (please specify) _____</p> | <p>Current sputum production during and after performing ACT and treatments</p> <p><input type="checkbox"/> None <input type="checkbox"/> ¼ medicine cup <input type="checkbox"/> ½ medicine cup <input type="checkbox"/> ¾ medicine cup <input type="checkbox"/> Full medicine cup <input type="checkbox"/> More than full medicine cup <input type="checkbox"/> I swallow & don't know</p> <p>In what order do you perform ACT and treatments?</p> <p>1. _____ 4. _____ 2. _____ 5. _____ 3. _____ 6. _____</p> <p>General Information</p> <p>How often are your ACT and treatments prescribed by your doctor? _____ times per day _____ minutes per session</p> <p>How often are you actually doing ACT and treatments? _____ times per day _____ minutes per session</p> <p>Do you feel that the method you are using is effective? (select only one) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Not sure</p> <p>(why) _____</p> <p>What are the obstacles to doing ACT and treatments regularly? (select all that apply)</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Insurance doesn't cover</td> <td><input type="checkbox"/> It's embarrassing</td> </tr> <tr> <td><input type="checkbox"/> Out-of-pocket cost is too high</td> <td><input type="checkbox"/> Takes too much time</td> </tr> <tr> <td><input type="checkbox"/> It is uncomfortable/hurts</td> <td><input type="checkbox"/> I don't want to</td> </tr> <tr> <td><input type="checkbox"/> I'm not sure how I should do it</td> <td><input type="checkbox"/> It doesn't work</td> </tr> <tr> <td><input type="checkbox"/> I'm not sure why I should do it</td> <td><input type="checkbox"/> None of these</td> </tr> <tr> <td><input type="checkbox"/> I don't think I need it</td> <td><input type="checkbox"/> Other _____</td> </tr> <tr> <td><input type="checkbox"/> I forget</td> <td></td> </tr> </table> <p>Would you like to learn about other methods of ACT? <input type="checkbox"/> YES <input type="checkbox"/> NO if so, which one(s)? _____</p> <p>Do you do any form of exercise? <input type="checkbox"/> YES <input type="checkbox"/> NO if yes, what type and how often? _____</p> <p>Do you ever substitute exercise for ACT? <input type="checkbox"/> YES <input type="checkbox"/> NO if yes, how often? _____ x/week</p> <p>How often do you clean your equipment? _____</p> | <input type="checkbox"/> Insurance doesn't cover | <input type="checkbox"/> It's embarrassing | <input type="checkbox"/> Out-of-pocket cost is too high | <input type="checkbox"/> Takes too much time | <input type="checkbox"/> It is uncomfortable/hurts | <input type="checkbox"/> I don't want to | <input type="checkbox"/> I'm not sure how I should do it | <input type="checkbox"/> It doesn't work | <input type="checkbox"/> I'm not sure why I should do it | <input type="checkbox"/> None of these | <input type="checkbox"/> I don't think I need it | <input type="checkbox"/> Other _____ | <input type="checkbox"/> I forget | |
| <input type="checkbox"/> Insurance doesn't cover | <input type="checkbox"/> It's embarrassing | | | | | | | | | | | | | | |
| <input type="checkbox"/> Out-of-pocket cost is too high | <input type="checkbox"/> Takes too much time | | | | | | | | | | | | | | |
| <input type="checkbox"/> It is uncomfortable/hurts | <input type="checkbox"/> I don't want to | | | | | | | | | | | | | | |
| <input type="checkbox"/> I'm not sure how I should do it | <input type="checkbox"/> It doesn't work | | | | | | | | | | | | | | |
| <input type="checkbox"/> I'm not sure why I should do it | <input type="checkbox"/> None of these | | | | | | | | | | | | | | |
| <input type="checkbox"/> I don't think I need it | <input type="checkbox"/> Other _____ | | | | | | | | | | | | | | |
| <input type="checkbox"/> I forget | | | | | | | | | | | | | | | |

Monmouth Medical Center
 The Unterberg Children's Hospital
 Elizabeth, NJ 07208

Re-Education of Airway Clearance Techniques
 The REACT program was developed by Dr. Robert L. Zanni and team at
 Children's Hospital at Monmouth Medical Center, Long Branch, NJ.
 Sponsored by IV SOLUTIONS, Lubbock, TX



acapella, acapella choice, acapella duet, Advair, Altera Nebulizer System, Capson, Flutide, Frequence, HyperSal, Pari LC Plus, Proventil, Pulmozyme, RC-Cornet, SideStream Plus, Star
 Clearance System, The iCourage system, The Vest Airway Clearance System, TOBI, Ventolin and Xopenex are other manufacturers' brand names and are registered trademarks of their respective
 owners. References to brand names are made solely for the purpose of assisting CP Centers in the collection of information about airway clearance techniques and treatments used by their patients.





Form 3: Airway Clearance Techniques (ACT) and Treatments Patient Demonstration

- **Objectives:** To provide an opportunity for a member of the CF Care Team to observe and evaluate the patient’s actual airway clearance techniques and identify area(s) where the patient could benefit from “re-education”.
- **Completed By:** CF Care Team Member
- **Completed At:** Clinic
- **Description:** The patient demonstration requires the clinician to observe the patient performing airway clearance using their devices and inhaled medications to evaluate their current skills.

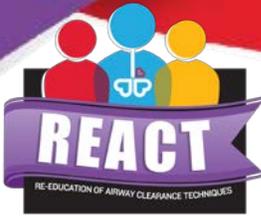
Note: The patient should have brought their airway clearance devices and inhaled medications to clinic. This request was communicated to them in the “call to action” contained in the survey cover letter. They were also reminded when the clinic contacted them approximately one week prior to their appointment.

The patient demonstration form should be completed by the appropriate CF Care Team member during the actual patient demonstration. The patient should be asked to demonstrate each device and inhaled medication, **with no input or coaching from the clinician.** The observed results should be captured on the form. The evaluation of patient’s skills determines how the clinician remediates knowledge/skill gaps when using the Patient Flip Chart later in the clinic visit.

At the conclusion of the patient demonstration, the clinician should evaluate the patient’s overall techniques/skills. The greater the level of improvement needed, the sooner the patient should be asked to return for a follow-up appointment either one, two or three months from today.

Some patients may not be able to return to the clinic more often than once per quarter due to geographic or transportation-related issues. The clinician should consider these limitations when making the recommendation for their follow-up visit.

The completed patient demonstration form should be included in the patient chart or scanned electronically and uploaded to the EMR system. The patient should not be given a copy of the completed patient demonstration form



Form 3

Survey → In-Clinic Assessment → **Patient Demonstration** → Action Plan

To be completed by CF Care Team Member

Airway Clearance Techniques (ACT) and Treatments Patient Demonstration

After completing this Patient Demonstration Form, keep a copy in the patient's record for future reference.

Patient's Full Name _____
 Date _____ Date of Birth _____

| Airway Clearance Techniques (ACT) | | Correct Technique <small>(check one when applicable)</small> | | | | Comments: |
|---|---|--|--------------------------|--|--------------------------|-----------|
| | | Incorrect Technique | | Adherent <small>(follows treatment plan)</small> | | |
| | | Non-Adherent <small>(does not follow treatment plan)</small> | | | | |
| Chest Physical Therapy (CPT) | Percussion Therapy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Postural Drainage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Percussor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Breathing & Coughing Techniques | Autogenic Drainage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Active Cycle of Breathing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Huff Coughing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Positive Expiratory Pressure (PEP) | acapella®/acapella® duet/acapella choice® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Flutter® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | RC-Comet® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| High-Frequency Chest Wall Oscillation or Vest | The Vest® Airway Clearance System | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | SmartVest® Airway Clearance System | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | The inCourage™ system | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Frequencer™ V2X | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Vest or IPV settings: | Intrapulmonary Percussive Ventilation (IPV) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Size: _____ Pressure: _____ | Frequency: _____ Time: _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Inhaled Medications | | | | | | |
| Bronchodilators | With a metered dose inhaler (MDI) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Spacer | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | With a nebulizer | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Osmotic Agents | Hypertonic Saline or HyperSal® _____ % | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Other | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Mucolytics | Pulmozyme® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Other | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Anti-infectives | TOBI® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Clayton® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Other | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Inhaled Corticosteroids (ICS) | (budesonide, fluticasone or other) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| ICS / LABA | Advair® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Nebulizers | PARI LC® Plus | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | SideStream Plus® | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | Altera® Nebulizer System | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Other _____ | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| How do you clean your nebulizer? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

During this visit (select all that apply)

Staff demonstrated correct ACT Reviewed educational flip chart with patient

Advised patient to continue current ACT Revised and reviewed new ACT

Reassess patient after One month Two months Three months (in-person preferred / by phone if necessary)



Re-Education of Airway Clearance Techniques
 The REACT program was developed by Dr. Robert L. Zanni and team at Children's Hospital at Monmouth Medical Center, Long Branch, NJ.

Sponsored by IV Solutions, Amarillo, TX



acapella, acapella choice, acapella duet, Advair, Altera Nebulizer System, Clayton, Flutter, Frequencer, HyperSal, Pari LC Plus, Proventil, Pulmozyme, RC-Comet, Side Stream Plus, SmartVest Airway Clearance System, The inCourage system, The Vest Airway Clearance System, TOBI, Ventolin and Xopenex are other manufacturers' brand names and are registered trademarks of their respective owners. References to brand names are made solely for the purpose of assisting CF Centers in the collection of information about airway clearance techniques and treatments used by their patients.



Form 4: Airway Clearance Techniques (ACT) and Treatments Action Plan

- **Objectives:** To provide the patient with a clear, concise and specific recommendations resulting from the clinic visit including instructions for inhaled medications, airway clearance techniques and device, equipment cleaning, etc.
- **Completed By:** CF Care Team Member
- **Completed At:** Clinic
- **Description:** The action plan is the final summary report and patient take away that provides the direction and actions necessary for them to improve their airway clearance behaviors/techniques.

The clinician should list the specific order the inhaled medications should be administered in the boxes to the left hand side of the form. The action plan provides the patient with complete information on the recommendations for their home care, including inhaled medication, airway clearance techniques, inhaled antibiotics and inhaled corticosteroids as needed.

The action plan also includes the “return date” for the next clinic visit which was determined earlier in the consultation based upon the patient’s skill assessment.

The action plan should be signed at the bottom by either the patient or caregiver and appropriate CF Care Team member. The signatures are there to strengthen the commitment by the patient to adhere to the prescribed therapies and improve their airway clearance behaviors/techniques based upon the information shared with them during the clinic visit.



Form 4

Survey In-Clinic Assessment Patient Demonstration Action Plan

To be completed by CF Care Team Member

Airway Clearance Techniques (ACT) and Treatments Action Plan

After completing this Action Plan, provide the original to the parent/patient and keep a copy in the patient's record for future reference.

Patient's Full Name _____ Date _____ Date of Birth _____

Inhaled Medications

Perform your treatments in the following order (specify order: 1, 2 or 3)

Bronchodilator _____
 Metered Dose Inhaler (MDI) Spacer Nebulizer
_____ x/day _____ inhalation(s) _____ x/day _____ ml

Osmotic Agent _____ % _____ x/day _____ ml

Mucolytic _____ x/day _____ ml

Nebulizer / Cleaning Instructions _____

Airway Clearance Techniques (ACT)

| | Specify Type / Device | Minutes | Time per Day |
|---|---|---------|--------------|
| Chest Physical Therapy (CPT) | _____ | _____ | _____ |
| Breathing and Coughing Techniques | _____ | _____ | _____ |
| High-Frequency Chest Wall Oscillation or Vest | _____ | _____ | _____ |
| Intrapulmonary Percussive Ventilation (IPV) | _____ | _____ | _____ |
| Settings: | Pressure _____ Frequency _____ Time _____ | | |
| | Pressure _____ Frequency _____ Time _____ | | |
| Instructions: _____ | | | |

Inhaled Antibiotics

_____ 28 days on/off Start Date ____/____/____

2x/day 3x/day

End Date ____/____/____

Alternate with _____ 2x/day 3x/day

Nebulizer / Cleaning instructions _____

Inhaled Corticosteroid (ICS) Always remember to rinse mouth after using an ICS.

_____ or _____

ICS _____ (ICS / LABA)

_____ x/day _____ Inhalation(s) _____ w/spacer

Notes

Next Clinic Visit

Date _____ Time _____

We have reviewed the above Action Plan and agree to follow through with each of the ACT and treatments prescribed by my CF Care Team.

Caregiver/Patient Signature _____ Healthcare Provider Signature _____



Re-Education of Airway Clearance Techniques
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 Sponsored by IV Solutions, Lubbock, TX



Printed in U.S.A. / September 2015 (Form 4)



Patient Education Flip Chart Description



AIRWAY CLEARANCE TECHNIQUES & TREATMENTS EDUCATIONAL FLIP CHART

- **Objectives:** The flip chart is the clinician resource to engage the patient in a structured discussion. It has been designed to provide the knowledge and skill information that will enhance the patient's understanding of airway clearance techniques, devices and inhaled medications.
- **Completed By:** CF Care Team Member
- **Completed At:** Clinic
- **Description:** The flip charts enable the clinician to deliver clear and concise information to the patient to close gaps in their knowledge and understanding regarding airway clearance. They have been designed to open a dialogue with the patient to uncover those areas where knowledge gaps may exist and allow the patient to openly discuss their current treatment.



UNDERSTANDING AIRWAY CLEARANCE

Contains educational materials on airway clearance techniques (ACT), treatments and devices.
For People Living with Cystic Fibrosis (CF)



Page 1 of Patient Flip Chart



| REACT QUALITY IMPROVEMENT PROGRAM ENROLLMENT FORM (Example for Clinic Use) | | | | | |
|--|--------------------------------------|---------------------|-------------------------|---|--------------------------|
| Patient Name/Identifier | Initial REACT Assessment Date | Adherent (X) | Non-Adherent (X) | Date to Reassess Patient (If Required) Example: 30, 60 or 90 days | Other Information |
| 1 | | | | | |
| 2 | | | | | |
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This is an example form for your clinic convenience.