



**DEPARTMENT OF VETERANS AFFAIRS
Veterans Health Administration
Washington DC 20420**

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UNDER SECRETARY FOR HEALTH'S INFORMATION LETTER

**GUIDANCE FOR THE ADMINISTRATION AND CLINICAL OPERATION OF THE
AIRBORNE HAZARDS AND OPEN BURN PIT REGISTRY, INCLUDING THE
CLINICAL IDENTIFICATION AND EVALUATION OF RESPIRATORY ILLNESSES
AFTER DEPLOYMENT TO THE SOUTHWEST ASIA THEATER OF OPERATIONS,
DJIBOUTI, OR AFGHANISTAN**

1. PURPOSE: The Veterans Health Administration (VHA), in coordination with the Department of Defense (DoD), has developed guidance for health care staff for the administration and clinical operation of the Department of Veterans Affairs (VA) Airborne Hazards and Open Burn Pit Registry (the Registry), including the clinical identification and evaluation of respiratory illnesses that may be related to deployment to the Southwest Asia theater of operations, Djibouti, or Afghanistan. The Registry has been established pursuant to the requirements of Section 201 of Public Law 112-260 (2013), and is available to Veterans and Servicemembers who deployed to these regions, including but not limited to the following operations: Operation Desert Storm/Shield, Operation Enduring Freedom, Operation Iraqi Freedom, or Operation New Dawn.

2. BACKGROUND:

a. Scientific studies are investigating a potential association between deployment-related airborne environmental exposures and post-deployment chronic respiratory illnesses. Certain respiratory conditions could have occurred due to exposures to airborne hazards that were present in Southwest Asia and Afghanistan – particularly in highly exposed or susceptible individuals. Potential environmental respiratory hazards include particulate matter (PM), of both human and natural origin, and chemical pollutants from open burn pit emissions or other combustion sources. Previous research studies and epidemiological reports in populations outside of Veteran and Servicemember populations indicate that PM acts as an irritant and may result in inflammatory changes in the airways with decrement in lung function. This could theoretically lead to the development of airway diseases such as asthma, as well as worsening of existing airway diseases (EPA 2009). The 2011 Institute of Medicine (IOM) Report on “Long-term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan” has determined that there is “limited/suggestive evidence of an association between exposure to combustion products and reduced pulmonary function in these populations” (IOM 2011). The evidence for the association between the development of specific respiratory diseases and exposure to combustion products was found to be inadequate or insufficient. Currently, it is unknown if

reduced pulmonary function as a consequence of exposure to PM or combustion products is a risk factor for the development of clinical disease later in life.

b. However, studies published to date on Veterans and Servicemembers who deployed to Southwest Asia and Afghanistan have reported a variety of findings ranging from no significant association between PM and cardio-respiratory outcomes (Abraham JH) to increased respiratory symptoms (Smith B) and possible increased numbers of individuals with asthma (Szema AM). One report found the presence of constrictive bronchiolitis on lung biopsy in a group of individuals who were evaluated for decreased exercise performance despite minimal objective physiologic or radiographic findings (King MS). To date no other studies have confirmed this finding. An independent panel is reviewing the pathologic sections from these cases, and preliminary results are expected in 2014.

c. To further our understanding of the potential long-term health effects of airborne hazards, DoD and VA are supporting additional research studies to identify respiratory disease that may be related to deployment (See Notice in the Federal Register, 78 FR 7860, Feb. 4, 2013). However, participation in the Registry and the receipt of care by symptomatic and concerned Veterans in our patient care system does not require the completion of these multi-year research studies.

d. This Information Letter presents information on the Registry and an approach, based on diagnostic procedures common in the clinical evaluation of all patients with respiratory symptoms, to identify and evaluate post-deployment respiratory symptoms in this patient population. It also references related DoD activities where appropriate.

3. ASSESSMENT OF VETERANS WITH RESPIRATORY SYMPTOMS OR CONCERNS RELATED TO AIRBORNE HAZARDS EXPOSURE DURING DEPLOYMENT:

a. Respiratory symptoms and concerns are likely to be voiced by Veterans when they present to VA care teams for an optional in-person clinical evaluation as part of the Registry. Also, enrollees who may have experienced exposure to airborne hazards or open burn pits during service may self-report such concerns while under VA care. In either case, VA providers are to use VHA's National Clinical Reminder "Iraq & Afghan Post-deployment Screen" (refer to VHA Directive 2005-005). This reminder is used to screen Veterans for posttraumatic stress disorder, traumatic brain injury, embedded fragments, and endemic diseases. Care teams may use this reminder as a starting point for discussions about deployment-related health concerns. The conversation could include open-ended questions regarding these concerns during this screening or a subsequent visit if the screening has already occurred.

b. **Assessment of Servicemembers.** DoD assesses all individuals returning from deployment using the post-deployment health assessment (within 30 days of return) and post-deployment health reassessment processes (90-180 days after return). Returning Servicemembers are asked about a history of upper and lower respiratory symptoms and conditions. Results of these screening questionnaires are available to VA Primary Care Providers (PCP) through the DoD/VA Bidirectional Health Information Exchange. Providers may wish to refer to these questionnaires as they develop a patient's medical history.

4. AIRBORNE HAZARDS AND OPEN BURN PIT REGISTRY (QUESTIONNAIRE AND OPTIONAL IN-PERSON MEDICAL EVALUATION):

a. The Registry is being established pursuant to the requirements of Section 201 of Public Law 112-260 (2013). Veterans do not need to be enrolled in VA's healthcare system to be eligible to participate in the Registry. The Registry consists of a web-based self-assessment questionnaire designed to elicit Veterans' concerns related to airborne hazards, symptoms, medical history, functional limitations, other environmental exposures, and outreach preferences. Veterans can participate in the Registry by accessing the following link: <https://veteran.mobilehealth.va.gov/AHBurnPitRegistry/>. In addition, Veterans have the option of requesting and receiving a cost-free, in-person medical evaluation. The evaluation is strictly voluntary. If enrolled in VA health care, the Veteran may request a medical evaluation from the Patient Aligned Care Team (PACT) or PCP. If not enrolled, the Veteran may request an evaluation from the local Environmental Health Clinician. Environmental health appointments are facilitated through the Environmental Health Coordinator that serves each facility. See <http://www.publichealth.va.gov/exposures/index.asp> for a list of coordinators and contact information. Veterans seeking to participate in the Registry should be encouraged to register and complete the on-line questionnaire.

b. To facilitate discussion of the Airborne Hazards and Open Burn Pit Registry questionnaire with Veterans at medical evaluations, providers may refer to Attachment A, titled "Guidance for Providers during Initial Encounter Related to Airborne Hazards." This attachment highlights ways to interpret a Veteran's responses. Data gathered from these evaluations will be captured on a standardized clinical template to complement the Registry. This template is titled "Airborne Hazard/Burn Pit Registry Initial Evaluation Note." Veterans should be encouraged to seek medical care if they are symptomatic or have continuing clinical concerns.

NOTE: For purposes of receiving the Registry's clinical evaluation, in the absence of evidence to the contrary, a Veteran's assertion of airborne hazard environmental exposure will be accepted.

c. Based on an agreement with DoD, Servicemembers may also participate in the Registry by completing the on-line questionnaire. Active-duty Servicemembers may also request a voluntary medical evaluation from their local military treatment facility after they have completed the registry self-assessment questionnaire. Active-duty Servicemembers should state that they are calling for an appointment specifically to address "health concerns related to the Airborne Hazards and Open Burn Pit Registry exposures." Servicemembers are encouraged to complete the registry at their convenience as well as not to delay seeking medical care from their own provider if they are symptomatic or experiencing continuing clinical concerns.

d. The medical evaluation made available to Veterans and Servicemembers as part of the exposure evaluation includes the provider's review and discussion of the questionnaire results with the participant. The medical encounter is also a basic initial evaluation and may serve as justification for further consultation or specialty evaluation as described below in paragraph 5. Providers can review a participant's self-assessment questionnaire by accessing the following link: <https://staff.mobilehealth.va.gov/AHBurnPitRegistry/>. Because they are part of the exposure evaluation, these consults and specialty diagnostic evaluations are provided at no cost. The goal of the evaluation is to address any concerns, questions, or symptoms Veterans may

have in regard to airborne hazards. VA anticipates that in certain cases follow-up care may be necessary. It is not the goal of the evaluation to assist Veterans or Servicemembers in completing the questionnaire. However, providers can review results and answer questions individuals have about their health.

5. DIAGNOSTIC APPROACH TO ASSESSMENT AND EVALUATION OF POST-DEPLOYMENT RESPIRATORY SYMPTOMS IN PATIENTS UNDER VA CARE WHO MAY HAVE EXPERIENCED AIRBORNE ENVIRONMENTAL HAZARDS DURING DEPLOYMENT TO THE SOUTHWEST ASIA THEATER OF OPERATIONS, DJIBOUTI, OR AFGHANISTAN:

a. **Templates and Review of Questionnaires.** VA is developing standardized clinical templates by which VA providers may record symptoms and conditions that may be related to their patients' exposure to airborne environmental hazards during the covered deployments. Providers' use of these templates will help ensure the data are available for analysis in the registry. VHA is also developing a capability to view the Registry questionnaire through a provider intranet portal. Long term plans include further integration of the questionnaires within the electronic health record to assist VA providers in assessing and caring for those who seek in-person evaluations. In the course of caring for their enrolled patients, providers may find it helpful to review the questionnaires with their patients and so are referred to Attachment A for guidance on how to interpret Veterans' responses.

b. **Initial Basic Clinical Evaluation.**

(1) The assigned provider or care team can evaluate a Veteran with respiratory symptoms or concerns related to airborne hazards if already enrolled in VHA. Non-enrolled Veterans should contact the closest Environmental Health Coordinator to schedule an evaluation with an Environmental Health Clinician.

(2) The provider may provide a basic evaluation to a Veteran identified with respiratory symptoms such as: dyspnea, cough, increased sputum production, chest tightness or discomfort, wheezing, or decreased exercise tolerance. The initial basic physical evaluation can be a part of a standard medical assessment.

(3) Providers may consider including the following as part of the initial basic medical evaluation for symptomatic Veterans:

(a) Medical, occupational, and environmental history with an emphasis on exposures to airborne hazards including burn pits and PM (e.g., pollution, blowing sand, and dust).

(b) History of personal habits including smoking.

(c) Physical examination focusing on the respiratory system with pulse oximetry.

(d) Spirometry testing:

1. Spirometry is considered a screening test that can be useful in the evaluation of a patient presenting with respiratory symptoms. If abnormal spirometry results are found, the provider

may consider consultation with a pulmonary specialist for additional testing. Many new modalities are available to achieve this in a patient-centered fashion including care coordination agreements, e-consults, telephone consult, and secure email/text.

2. Spirometry testing maneuvers may be performed by a trained technician. The goal of achieving adequate quality (meeting acceptability and repeatability criteria) is to reduce false positive results. Abnormal spirometry test results include values below the normal reference range for a one-time test or a significant change in results when compared to previous testing. For this latter situation, it has been recommended that further evaluation is indicated if there is a 15 percent or greater decline in forced expiratory volume in one second (FEV₁) or forced vital capacity (FVC) values between pre and post-deployment testing or greater than a 10 percent decline if new onset respiratory symptoms are also reported, even if the post-deployment values are within the normal range (Rose, et. al.).

(e) Posterior-anterior (PA) and lateral chest radiograph.

(f) Complete blood count, especially in menstruating women.

c. **Consultation with a Pulmonary Specialist.** Consultation with a pulmonary specialist for further evaluation of possible respiratory illness is indicated if any of the following apply:

(1) Abnormal test results: If the individual with respiratory symptoms is found to have abnormal spirometry results or a chest radiograph with a significant abnormality, consultation with a specialist for further evaluation is indicated. To facilitate appropriate referral and work-up, e-consult, telephone consult or echo/scan case presentation and didactic may improve the experience for the patient thus avoiding unnecessary testing and travel and providing an integrated and well sequenced approach to addressing these concerns. It can be helpful to provide complete pulmonary function tests prior to the specialty visit (including spirometry before and after the use of a bronchodilator, complete lung volumes and diffusing capacity). The decision for additional, more advanced lung function testing such as broncho-provocation challenge testing or cardiopulmonary exercise testing may be determined by the specialist. An abnormal chest radiograph may be reviewed pre-visit by the specialist and a decision made whether to order a dedicated computed tomography (CT) scan or high resolution CT scan of the chest.

(2) Normal test results: If the patient has no symptoms, or has symptoms or concerns out of proportion to other findings, providers may consider the need for further consultation.

(3) Exacerbation of previous respiratory illness or uncertain diagnosis: If the patient has already been diagnosed with a respiratory condition that may have existed prior to deployment or has been diagnosed after deployment, referral to a specialist may be indicated to help determine if the illness is associated with exposures that occurred during deployment. This may include a broncho-provocation challenge test to either help confirm or eliminate the diagnosis of asthma.

d. **Consultation with Other Specialists.** Consultation with other specialists, including ear, nose, and throat (ENT) physicians or environmental and occupational medicine physicians, may also be appropriate in some cases.

e. **Guidance for Pulmonary and other Specialists.**

(1) To ensure proper identification of Veterans with post-deployment respiratory illness, specialists may proceed with further evaluation that depends on their own experience, professional judgment, and knowledge. This may include more advanced pulmonary function testing including broncho-provocation challenge testing, cardiopulmonary exercise testing, or respiratory muscle forces. In some instances, this may also include performance of exercise laryngoscopy for vocal cord dysfunction (or consultation with other specialists such as speech pathologists or ENT physicians for this study).

(2) Additional consultation with allergists (for allergy testing or care of hypersensitivity pneumonitis) or ENT specialists (to evaluate upper airway symptoms including hoarseness) may be warranted.

(3) A decision to perform an invasive procedure such as bronchoscopy or surgical biopsy for lung tissue typically requires a finding of interstitial changes or lung masses on chest imaging.

(4) Once the pulmonary specialist has evaluated an individual and determined that the pulmonary illness may be associated with exposures during deployment, the identification of that case may be made with the most specific ICD-9 coding. Planning is underway to develop a structured approach to identify and capture cases of respiratory illness in the Registry which appear deployment-related. This may involve collaboration among pulmonary physicians and the War Related Illness and Injury Study Center (WRIISC).

NOTE: Non-respiratory concerns (e.g., cancer) require appropriate specialized evaluation and appropriately empathic risk communication. Health risk communication—an approach which emphasizes the importance of trust, perception of possible harm, and uncertainty—is a useful paradigm for conversations about possible health effects from deployment-related exposures. Guidance and educational products on these issues are available through the Office of Public Health (OPH) Web site at: <http://www.publichealth.va.gov>.

6. MISCELLANEOUS ADMINISTRATIVE MATTERS:

a. Even though, as part of the Registry, non-enrolled Veterans are eligible for an in-person no-cost medical evaluation to discuss concerns and be evaluated for symptoms they believe are related to airborne hazards exposures from deployments; these Veterans should be encouraged to enroll in VA health care. Veterans who wish to enroll may be directed to the eligibility staff at local VA facilities, or VA Health Resource Centers at 1-877-222-8387, or online at <http://www.va.gov/healthbenefits>.

b. A Veteran's registration and participation in the Registry does not serve as a claim for Compensation and Pension (C&P) for any condition found on evaluation. Eligibility for the Registry evaluation does not constitute a basis for service connection or in any way affect determination regarding service connection. Although the results of an exposure evaluation may be used to support a C&P claim, the evaluation will not, in and of itself, be considered such a claim. Veterans who wish to submit a claim for conditions possibly related to this exposure need to do so using the normal claims process at the nearest VA Regional Office of jurisdiction at

1-800-827-1000, or through a Veterans benefits representative physically located at a VA health care facility.

c. Consistent with law, regulations, and policy, copayments will not be assessed for a Veteran's participation in the Registry, including Registry-authorized evaluation(s).

d. The chief cohort of Veterans who may have been exposed to airborne hazards and open burn pits is Veterans who were deployed to the theaters described by the Registry's inclusion criteria. Consistent with law, regulations, and policy, Persian Gulf War Veterans and combat-theater Veterans enrolled in Priority Group 6 are eligible to receive hospital care, outpatient care, nursing home care, or prescribed (outpatient) medications at no cost when such treatment is furnished for any condition that VA determines may be associated with their service in the Gulf War or in a qualifying combat theater, respectively. Such conditions include (but are not limited to) post-deployment respiratory conditions which may have resulted from exposure to airborne environmental hazards or open burn pits while deployed to the Southwest Asia theater of operations, Djibouti, or Afghanistan. Treatment for conditions found to be unrelated to a Veteran's service may be subject to copayment requirements. Whether a presenting Veteran's condition is possibly associated with their service is a determination to be made and documented by the provider at each visit in accordance with VHA policy.

e. Bear in mind, however, that other enrolled Veterans may present to their providers with post-deployment respiratory complaints that are relevant to the types of airborne environmental exposures covered by the Registry; these Veterans may have either qualified for enrollment in a higher priority group or else been moved to a lower priority category once their time-limited designation as a combat-theater Veteran ended per enrollment rules. Questions related to a Veteran's enrollment in VA's healthcare system and questions related to the assessment of copayments/copayment-exemptions should be directed to the eligibility staff at local VA facilities or VA Health Resource Centers at 1-877-222-8387 or access www.va.gov/healthbenefits.

7. REFERENCES:

a. Abraham JH, Baird CP. A Case-Crossover Study of Ambient Particulate Matter and Cardiovascular and Respiratory Medical Encounters Among US Military Personnel Deployed to Southwest Asia. *J Occup Environ Med* 54:733-739, 2012.

b. Department of Veterans Affairs Notice: Initial Research on the Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan, *Federal Register*, Vol 78. No 23, Monday February 4, 2013.

c. EPA/600/R-08/139F Integrated Science Assessment for Particulate Matter. National Center for Environmental Assessment – RTP Division, ORD, US EPA, December 2009.

d. IOM, "Long-term health consequences of exposure to burn pits in Iraq and Afghanistan" 2001, Washington, DC: The National Academies Press.

e. King MS, Eisenberg R, Newman JH, Tolle JJ, Harrell FE, et al. Constrictive Bronchiolitis in Soldiers Returning from Iraq and Afghanistan. *N Engl J Med* 365:222-230, 2011.

f. Office of Management and Budget (OMB) approved version of the Airborne Hazards and Open Burn Pit Registry self-assessment questionnaire:

http://www.reginfo.gov/public/do/PRAViewIC?ref_nbr=201401-2900-002&icID=210929.

g. Public Law 112-260 Section 201 (2013); <http://www.gpo.gov/fdsys/pkg/BILLS-112s3202enr/pdf/BILLS-112s3202enr.pdf>.

h. Rose C, Abraham J, Harkins D, Miller R, Morris M, et al. Overview and Recommendations for Medical Screening and Diagnostic Evaluation for Postdeployment Lung Disease in Returning US Warfighters. *J Occup Environ Med* 54:746-751, 2012.

i. Santos SL, Helmer D, Teichman R. (2012) Risk communication in deployment-related exposure concerns. *J Occup Environ Med*, 54(6):752-9.

j. Smith B, Wong CA, Smith TC, Boyko EJ, Gackstetter GD, Ryan MAK. Newly Reported Respiratory Symptoms and Conditions Among Military Personnel Deployed to Iraq and Afghanistan: A Prospective Population-based Study. *Am J of Epidemiol* 170:1433-1442, 2009.

k. Szema AM, Peters MC, Weissinger KM, Gagliano CA, Chen JJ. New-onset Asthma Among Soldiers Serving in Iraq and Afghanistan. *Allergy Asthma Proceedings* 31:e67-e71, 2010.

8. INQUIRIES: Questions regarding this Information Letter may be addressed to Director, Post 9/11 Environmental Health Program (10P3A) at 202-443-5365, paul.ciminera@va.gov.

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ATTACHMENT A

**GUIDANCE FOR PROVIDERS DURING INITIAL ENCOUNTER RELATED TO
AIRBORNE HAZARDS****1. PURPOSE:**

a. The following outline represents a focused, thorough evaluation of a Veteran who requests an examination after completing the Airborne Hazards and Open Burn Pit Registry self-assessment. This guidance may also be useful for encounters where deployment health concerns are expressed regardless of whether or not the Veteran is participating in the Registry.

b. This evaluation may be completed by a primary care provider, environmental health clinician, post-deployment champion, or pulmonologist. A standardized clinical progress note template entitled “Airborne Hazard/Burn Pit Registry Initial Evaluation” is being created to facilitate this evaluation. Health risk communication is particularly important in assessing Veterans’ concerns about health effects related to potential environmental exposures during deployment. Health risk communication is a paradigm of communication that emphasizes the importance of building trust through active listening and empathy, recognizing the relevance of perceptions of possible harm, and the uncertainty often inherent in degree of exposure, relationship between exposures and possible health effects, diagnostic certainty, and prognosis. For a discussion of health risk communication, see paragraph 7.i.

NOTE: Many questions in the self-assessment are intended to develop research hypotheses and may not have immediate utility in the clinical setting.

c. Relevant sections of the Airborne Hazards and Open Burn Pit Registry self-assessment, which are likely to prompt a discussion of health risks or further evaluation, are noted [in brackets] in the History portion of this Attachment. Additional aspects of the history to consider are included at the end of the Attachment. Recommended aspects of the physical examination, diagnostic testing/evaluation, and assessment and plan are specified.

2. HISTORY:

a. **Deployment History [Section 1.1]**. The self-assessment asks the Veteran to validate deployment data obtained from the Department of Defense (DoD). Review the dates of deployment and identify any significant discrepancies. In most cases, a provider will not have the information at his/her ready disposal to validate reported discrepancies. Accept the Veteran’s statement and document his/her statement in the clinical record.

ATTACHMENT A

b. **Deployment Exposures [Section 1.2-1.4].**

(1) Review the exposure concerns and the Veteran's responses. Acknowledge positive responses. Synthesize the reported exposures by 'summing' the totality of airborne hazards exposures by deployment and their perceived immediate health impacts in a narrative.

(2) For example: "So, you were exposed to burn pits, including smoke that drifted across your housing, sand storms that should've kept you inside but you had to go out on patrol anyway, and local air pollution during your deployment to Iraq from 2006-2007. These exposures were associated with irritated eyes, nose and throat and a cough for which you sought care from the medic."

(3) Discuss any other military occupational or environmental exposures of concern noted in the responses.

c. **Symptoms, Health History [Section 2.1-2.8].** Briefly summarize in narrative the pertinent positives.

(1) Functional limitation and reported cause - for example: "Looks like you're quite limited in your physical activity because of pain in your back and getting winded."

(2) Health conditions - review pertinent positives with patient, timing of diagnosis (pre-, during, post-deployment), confirm certainty of diagnosis (confirmatory tests done, medications prescribed). Add to problem list if appropriate.

(3) Cancer - review pertinent positives with patient, timing of diagnosis (pre-, during, post-deployment), confirm certainty of diagnosis (confirmatory tests done, medications prescribed). Add to problem list if appropriate.

(4) Current symptoms - review pertinent positives with patient, likely link to diagnoses, onset (pre-, during, post-deployment), status of work up (confirmatory tests done), and management strategies tried (self-management, medications prescribed). Add to problem list if appropriate.

(5) Tobacco use - confirm and document tobacco use history. Add to problem list, if appropriate.

(6) Alcohol use - confirm and probe for problem drinking or dependence/abuse. Add to problem list, if appropriate.

d. **Health Concerns [Section 3].** Review the reported long-term health effects of deployment. Acknowledge responses that indicate concern. Synthesize the reported concerns in a narrative. For example: "It looks like your deployment was stressful and you think it might've

ATTACHMENT A

had a negative impact on your health, particularly your exposure to airborne hazards. You seem worried that you will continue to have breathing problems because of this and you're concerned. You reported that you haven't discussed this with any healthcare providers yet."

e. **Residential History [Section 4]**. These questions are used to develop research hypotheses and may not have immediate clinical utility.

f. **Occupational History [Section 5]**. Briefly summarize in narrative. For example: "Looks like you're working as an auto mechanic and have had some jobs that might have exposed you to petrochemical fumes and solvents."

g. **Other Environmental Exposures [Section 6]**. Briefly summarize pertinent positives in narrative. For example: "Looks like you regularly work on small engines with solvents and clean your guns."

h. **Health Care Utilization [Section 7]**. Patients might have engaged other providers to discuss their concerns. Use this question to explore prior and ongoing healthcare utilization. Performing medication reconciliation is an important example of this. Medication reconciliation includes updating medication information in the electronic medical record (EMR) by asking patients and their caregivers what medications patients are taking, resolving discrepancies between current use and documented prescriptions, and constructing an updated medication list in the EMR that is also provided to the patient. Managing medication and other treatment information also includes soliciting and recording the patient's experiences with these interventions. Relevant inquiries may include asking about what other medications and/or treatments the patient has tried in the past for respiratory symptoms. What worked? What didn't and why? The ensuing discussion can provide an indication about how well the patient understands his/her current management plan.

i. **Mental Health History**. Did the patient screen positive for post traumatic stress disorder (PTSD), depression, anxiety, or substance abuse? Has the patient been appropriately evaluated? Is the patient engaged in any treatments or monitoring?

j. **Social History**. What are the patient's major life goals (obtaining basic needs, family, work, school)? What social support does the patient have available (how many different people, who, how close, how involved)?

3. PHYSICAL EXAM:

a. Vital signs (respiratory rate, O2 Sat, pulse, blood pressure, height, weight, temperature) - record in the vitals package.

b. Ear, nose and throat (conjunctivitis, nasal mucosa/septum, oropharynx).

c. Lymphadenopathy (cervical, axillary, submandibular, posterior auricular, occipital).

ATTACHMENT A

- d. Chest/Pulmonary (lung sounds, cyanosis, clubbing, habitus).
- e. Cardiovascular (heart sounds/borders/position, pulses, edema).
- f. Abdomen (organomegaly, tenderness).

4. DIAGNOSTIC EVALUATION TO DATE WITH RESULTS AND

INTERPRETATION: Note that the presence/absence of each of the following and the pertinent findings (positive or negative).

- a. Complete Blood Count with differential (for anemia, leukocytosis, eosinophilia).
- b. Chest radiograph - PA and lateral.
- c. Spirometry with and without bronchodilator.
- d. Full Pulmonary Function Tests with diffusing capacity.
- e. Bronchoprovocation test.
- f. Computed tomography (CT) chest (high resolution preferable).
- g. Echocardiogram.
- h. Cardiopulmonary exercise test (CPET).
- i. Vocal cord dysfunction assessment.
- j. Respiratory muscle strength.
- k. Other related specialty consult results.
- l. Other testing.

5. OVERALL ASSESSMENT AND RECOMMENDATIONS: Overall assessment and recommendations shall be based on available information.

- a. Synthesize findings and formulate a concise assessment. Consider appropriate differential diagnoses to explain patient-reported symptoms and dysfunction. Use objective findings from evaluation to prioritize the list of possible diagnoses according to the likelihood of presence and urgency.
- b. Develop recommendations.
- c. Communicate assessment and recommendations to the patient in the context of the patient's priorities and goals.

ATTACHMENT A

- d. Negotiate plan for next steps (including additional diagnostic testing, additional consultation, provide educational resources/materials, set time to next f/u, etc.).
- e. Order any appropriate tests or consultations. Document the rationale for not ordering these if they are clinically relevant.