

Texas Medicaid

Asthma Disease Management

Educational RetroDUR Mailing	<input checked="" type="checkbox"/> Initial Study <input type="checkbox"/> Follow – up /Restudy
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Executive Summary

Purpose:	To determine opportunities for improving the safety and efficacy of drug therapy for patients with asthma.		
Why Issue was Selected:	When asthma is diagnosed and treated properly, morbidity can be minimized and health care costs associated with morbidity can be decreased. Inadequate medical management of asthma increases overall medical costs and decreases the patient's quality of life. Poor control of asthma results in lost work/school days, and increased emergency department visits or hospitalizations. ^{1,2}		
Program Specific Information:	Performance Indicators	Exceptions	
		<18 Years	≥ 18 years
	<ul style="list-style-type: none"> • Overutilization of short-acting beta₂-agonist (SABA) inhalers 	2,114	211
	<ul style="list-style-type: none"> • Nebulized beta₂-agonist with opportunity to change to metered dose inhaler (MDI) 	5,842	406
	<ul style="list-style-type: none"> • Overutilization of SABA nebulizers 	419	104
	<ul style="list-style-type: none"> • Underutilization of inhaled corticosteroids 	304	45
	<ul style="list-style-type: none"> • Use of long-acting beta₂-agonists (LABAs) as first-line control therapy 	21	31
	<ul style="list-style-type: none"> • Use of LABA products without SABA inhaler therapy 	117	35
	<ul style="list-style-type: none"> • Increased risk of adverse drug events with asthma therapy <ul style="list-style-type: none"> ○ Beta-blockers ○ Theophylline drug-disease Interactions 	241	216
		2	22
	<ul style="list-style-type: none"> • Asthma medication non-adherence <ul style="list-style-type: none"> ○ Inhaled corticosteroids ○ Leukotriene antagonists ○ Theophylline 	1,592	132
		2,216	173
		10	4
	<ul style="list-style-type: none"> • Duplicate therapy with LABA inhaler products <ul style="list-style-type: none"> ○ LABA ○ LABA/Steroid 	43	3
		16	3
	<ul style="list-style-type: none"> • History of smoking 	1	44
Setting & Population:	All patients with a history of asthma in the last 2 years.		
Types of Intervention:	Cover letter and individual patient profiles.		
Main Outcome Measures:	Re-measure of performance indicators.		
Anticipated Results:	<ul style="list-style-type: none"> • Optimization of asthma therapy (increase in asthma control therapy, decrease in overutilization of SABA therapy) • Decreased use of LABA as first-line control therapy • Decrease in LABA therapy without SABA therapy • Decrease in drug-disease state interactions with asthma therapy • Increase in asthma medication adherence • Decrease in duplicate asthma therapy • Decrease smoking in patients with asthma 		

Performance Indicator #1: Overutilization of SABA Inhalers

Why has this indicator been selected?	Inhaled SABAs are the recommended quick-relief treatment of choice to alleviate asthma symptoms and prevent exercise-induced bronchospasm (EIB). However, increasing SABA use or use on two or more days per week to relieve asthma symptoms (not for prevention of EIB) may indicate inadequate asthma control and the need for initiation or optimization of anti-inflammatory therapy (e.g., inhaled corticosteroids). ^{1,2}
How will the patients be selected ?	
Candidates (denominator):	All patients receiving a SABA during the last 60 days.
Exception criteria (numerator):	Candidates receiving > 4 SABA inhalers in the last 120 days.

Performance Indicator #2: Potential Inappropriate Use of SABA Nebulized Solution

Why has this indicator been selected?	SABA nebulizers have been shown in studies to be as effective as metered dose inhalers (MDIs), and are the delivery method of choice for children and other patients who are unable to use MDIs (e.g., elderly, degenerative joint disease patients, paralysis patients). ^{1,2} Patients will be identified who are receiving SABA nebulizer solutions and may be candidates for Metered Dose Inhaler (MDI) use.
How will the patients be selected ?	
Candidates (denominator):	Patients \geq 8 years of age who are receiving a SABA nebulizer in the last 90 days with or without previous MDI use.
Exception criteria (numerator):	Candidates with absence of specific diseases, such as cystic fibrosis, COPD, degenerative diseases of CNS (i.e. Alzheimer's disease, dementia), paralysis/paraplegia/quadruplegia, intellectual disabilities (i.e. mental retardation, severe autism), neurological disorders (i.e. Parkinson's disease), RA, OA, or ventilator dependence in the last 2 years.

Performance Indicator #3: Overutilization of SABA Nebulizers

Why has this indicator been selected?	Patients will be identified, who have reasons for nebulizer use, but are utilizing doses that may suggest inadequate asthma control.
How will the patients be selected ?	
Candidates (denominator):	Patients \geq 12 years of age with a history of asthma in the last 2 years PLUS SABA nebulizer therapy in the last 6 months. Patients with COPD or with cystic fibrosis are excluded.
Exception criteria (numerator):	Candidates receiving \geq 2 or more SABA nebulizer claims with the following quantities: <ol style="list-style-type: none"> 1. Albuterol 0.5% solution for nebulization – 200 mL in past 60 days (~ 6 nebulizer treatments/day) 2. Albuterol 0.021%, 0.042%, Albuterol 0.083% solution for nebulization – 1080 ml in past 60 days (6 nebulizer treatments/day) 3. Levalbuterol 0.31mg/3ml, 0.63mg/3ml, 1.25mg/3ml - 1080 ml in the past 60 days (6 nebulizer treatments/day)

Performance Indicator #4: Underutilization of Inhaled Corticosteroids

Why has this indicator been selected?	Inhaled corticosteroids (ICSs) are the most effective and are preferred for first-line control therapy for asthma. Cromolyn, leukotriene modifiers, nedocromil, and sustained released theophylline are considered alternative therapy. ^{1,2}
How will the patients be selected ?	
Candidates (denominator):	History of an inhaled mast cell stabilizer, oral theophylline, or leukotriene antagonist in the last 45 days PLUS history of asthma in the last 2 years without history of an inhaled corticosteroid in the last 45 days.

Exception criteria (numerator):	<ol style="list-style-type: none"> 1) Candidates who have had ≥ 2 emergency department visits or hospitalizations for asthma in the last 365 days of claims history or 2) Candidates with ≥ 2 SABA claims or ≥ 3 packs of a SABA in the last 120 days.
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Performance Indicator #5: Use of LABAs as First-Line Control Therapy

Why has this indicator been selected?	Because LABA therapy can increase the risk of severe asthma exacerbations and death in some patients with asthma, the use of a LABA is contraindicated without the use of an asthma controller, such as an ICS. ^{3,4} Asthma treatment guidelines recommend ICS therapy as the preferred controller in patients with persistent asthma. ² If low dose inhaled corticosteroids provide inadequate relief, the option to increase the ICS dose should be given equal weight to the addition of a LABA. Additionally, LABAs should only be used long-term in patients whose asthma cannot be adequately controlled on asthma controller medications. ²⁻⁴
How will the patients be selected ?	
Candidates (denominator):	Patients with a history of asthma in the last 2 years receiving a LABA-containing product in the last 45 days.
Exception criteria (numerator):	<ol style="list-style-type: none"> 1) For candidates taking a LABA: no history of ICS therapy within the most recent 45 days or - 2) For candidates taking a LABA/Steroid combination inhaler: no history of a LABA/Steroid combination inhaler >45 days ago and currently no history of other control therapies within the last 45 days.

Performance Indicator #6: Use of LABA Products without SABA Inhaler Therapy

Why has this indicator been selected?	Since LABAs have a slower onset of action (up to 20 minutes) than SABAs, they should not be used to relieve sudden-onset asthma symptoms. All patients should have a rescue inhaler (e.g., albuterol) with a fast onset of action available to treat sudden-onset asthma symptoms. ²⁻⁴
How will the patients be selected ?	
Candidates (denominator):	Patients receiving a LABA-containing product in the last 90 days.
Exception criteria (numerator):	Candidates who did not have a claim for an inhaled or nebulized SABA product within the last year.

Performance Indicator #7: Increased Risk of Adverse Drug Events with Asthma Therapy

Why has this indicator been selected?	<ol style="list-style-type: none"> 1) Using beta-blockers may worsen respiratory function in patients with asthma, especially with noncardioselective beta-blockers.⁵ 2) When theophylline is used by patients with certain medical conditions, there is an increased risk of worsening control of the conditions or increasing the potential of theophylline toxicity.⁵
How will the patients be selected ?	
Candidates (denominator):	<ol style="list-style-type: none"> 1) Patients with a history of asthma in the last 2 years. 2) Patients receiving a theophylline-containing product in the last 90 days.
Exception criteria (numerator):	<ol style="list-style-type: none"> 1) Candidates receiving a noncardioselective beta-blocker in the last 90 days with at least 7 days of therapy. 2) Candidates with a history of the following conditions in the last 2 years unless specified: <ul style="list-style-type: none"> • Peptic ulcer disease (last 90 days) • Seizure disorder • Cardiac arrhythmias • Pulmonary edema • Congestive heart failure • Cor pulmonale

- Liver disease

Performance Indicator #8: Asthma Medication Non-Adherence

Why has this indicator been selected?	Non-adherence with prescribed daily dosing regimens can either result in asthma symptom exacerbation or can erroneously lead the clinician to believe the patient requires a higher daily dose to achieve adequate control. ^{1,2}
How will the patients be selected ?	
Candidates (denominator):	Patients receiving asthma therapy with theophylline (or its analog), a leukotriene modifier or ICS during the last 135 days. To ensure the patient was receiving chronic therapy, they must have received some drug during the initial 45 day period and the last 45 day period.
Exception criteria (numerator):	Candidates with less than 60 days of theophylline, leukotriene modifier, or ICS (MDI or nebulized) therapy in the last 90 days. Patients on SABAs and LABAs are excluded.

Performance Indicator #9: Duplicate Therapy with LABA Inhaler Products

Why has this indicator been selected?	Duplicate LABA or orally inhaled steroid therapy has the potential to increase the risk of adverse drug events without a corresponding increase in efficacy.
How will the patients be selected ?	
Candidates (denominator):	Patients receiving a LABA or LABA/steroid combination inhaler during the last 60 days.
Exception criteria (numerator):	Candidates with ≥ 35 or more days of the following overlapping therapy: <ul style="list-style-type: none"> • multiple salmeterol-containing products • multiple formoterol-containing products • LABA/steroid combination inhaler with an ICS or LABA

Performance Indicator #10: History of Smoking with Asthma

Why has this indicator been selected?	Cigarette smoking has been associated with an increase in asthma severity and decreased responsiveness to inhaled corticosteroids. ² Environmental tobacco smoke is associated with increased symptoms, decreased lung function, and greater use of health services among those who have asthma in all age groups. All smokers should be counseled on smoking cessation and offered an intervention at every health care provider visit. ^{2,7}
How will the patients be selected ?	
Candidates (denominator):	Patients with a history of asthma in the last 2 years.
Exception criteria (numerator):	Candidates with a history of smoking in the last year that have not received therapy with a smoking cessation product (e.g., bupropion ER 150 mg, bupropion SR 150 mg, Zyban®, Chantix®, or nicotine replacement therapy) in the last year.

References:

1. Global Strategy for Asthma Management and Prevention. Global Initiative for Asthma (GINA) 2016. Available from <http://ginasthma.org/> Accessed 7/12/16.
2. EPR-3. Expert panel report 3: guidelines for the diagnosis and management of asthma (EPR-3 2007). NIH Publication No. 7-4051. Bethesda, MD: U.S. Department of Health and Human Services; National Institutes of Health; National Heart, Lung, and Blood Institute; National Asthma Education and Prevention Program, 2007. Available at: <http://www.nhlbi.nih.gov/guidelines/asthma/index.htm> Accessed 7/12/16.
3. FDA Drug Safety Communication: New safety requirements for long-acting inhaled asthma medications called Long-Acting Beta-Agonists (LABAs), Food and Drug Administration; February 18, 2010. Available at: <http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm199565.htm>. Accessed 7/12/16.
4. FDA Drug Safety Communication: Drug labels now contain updated recommendations on the appropriate use of long-acting inhaled asthma medications called Long-Acting Beta-Agonists (LABAs), Food and Drug Administration; June 2, 2010. Available at: <http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm199565.htm>. Accessed 7/12/16.

5. First DataBank Drug-Disease State Interactions First DataBank, Inc., San Bruno, California.
6. Centers for Disease Control and Prevention. Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2012–13 Influenza Season. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a3.htm>. Accessed 7/12/16.
7. Centers for Disease Control and Prevention. The 6/18 Initiative: Accelerating Evidence into Action. Evidence Summary: Reduce Tobacco Use. Available at: <http://www.cdc.gov/sixteen/tobacco/index.htm>. Accessed August 18, 2016.



TEXAS HEALTH AND HUMAN SERVICES COMMISSION

<<Date>>

CHARLES SMITH
EXECUTIVE COMMISSIONER

<<Name>>

<<Address>>

<<Address>>

RE: Caring for Your Patients with Asthma

Dear Dr. <<Name>>:

The goal of this quality management program is to assist you in caring for your patients with asthma. This program is based on guidelines provided by the National Institute of Health and is designed to assist you in maximizing patient outcomes and promoting patient safety.¹

Expert Panel Report-3: Guidelines for Diagnosis and Management of Asthma are available at:
<http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>

Claims data indicates that in the Texas Medicaid Fee-For-Service Program there are approximately 47,837 individuals being treated for asthma. This treatment included 74,488 prescriptions for asthma medications in a recent 90 day period at the total cost of \$8,881,708.

Total Texas Medicaid Fee-For-Service Specific Data

Asthma Medication Management Indicator Summary	Number of Patients with Opportunities*	
	<18 Years	≥18 Years
Promote the use or optimization of asthma control therapy	2,975	426
Identify utilization of short-acting beta ₂ -agonist nebulizers when use of a metered dose inhaler may be appropriate	5,842	406
Identify patients who may be at risk of experiencing an adverse drug event	243	238
Encourage medication adherence with asthma therapy	3,818	309
Duplicate Therapy with long-acting beta ₂ -agonist inhaler products	59	6
Identify patients with a history of smoking	1	44

*Based on data through 6/16/16

The enclosed patient profiles reflect one or more of the above issues and are provided as a medical record reminder for when your patients return for their next appointments.

We acknowledge that there may be clinical variables influencing an individual patient's management that are not apparent in claims data. However, we believe the issues identified may assist you in caring for your patient(s). It is possible that your license number may have been inadvertently assigned to the claim as an error at the pharmacy during the billing process. **Also, some prescribed medications may not appear on the patient's profile because they may have been privately purchased.** We thank you for reviewing this information and caring for Texas Medicaid patients, and we welcome the opportunity to discuss any comments or concerns you may have about our quality management program. Please feel free to call our office at 1-866-923-7208 with questions or concerns. **If your mailing address is incorrect, it must be updated through the Texas Medical Board online at <http://www.tmb.state.tx.us/page/change-address>.**

Sincerely,

Medicaid Drug Use Review Board
Vendor Drug Program H-630
P.O. Box 85200
Austin, TX 78708-5200

Asthma Medication Management Indicator Summary

Advise all patients not to smoke or use tobacco products

- Cigarette smoking has been associated with an increase in asthma severity and decreased responsiveness to inhaled corticosteroids. Environmental tobacco smoke is associated with increased symptoms, decreased lung function, and greater use of health services among those who have asthma in all age groups. All smokers should be counseled on smoking cessation and offered an intervention at every health care provider visit.^{2,5}

Promote the use of or optimization of asthma control therapy

- Short-acting beta₂-agonists (SABAs) are very effective for acute exacerbations of asthma, but generally should not be used on a scheduled, daily basis. Increasing use of SABA therapy or using SABA >2 days a week for symptom relief, other than for prevention of exercise-induced bronchospasm, may indicate inadequate control, suggesting the need to add or titrate long-term control therapy (e.g., inhaled corticosteroids).¹
- For patients with persistent asthma, inhaled corticosteroids (ICS) are the most effective therapy and are the preferred control therapy. Alternative control therapy includes cromolyn, leukotriene modifiers, nedocromil, and theophylline. However, these agents have not proven to be as effective as ICS therapy. Patients with moderate or severe disease may require additional medication combined with an ICS for daily long-term control.¹

Identify potential overutilization of short-acting beta₂-agonist nebulizers when use of a metered dose inhaler (MDI) may be appropriate:

- MDIs have been shown to be as effective as nebulizers when used properly.¹

Identify patients with asthma who may be at risk of experiencing an adverse drug event

- Because long-acting beta₂-agonist (LABA) therapy can increase the risk of severe asthma exacerbations and death in some patients with asthma, the use of a LABA is contraindicated without the use of an asthma controller, such as an ICS. Asthma treatment guidelines recommend ICS therapy as the preferred controller in patients with persistent asthma. If low-dose inhaled corticosteroids provide inadequate relief, the option to increase the ICS dose should be given equal weight to the addition of a LABA. Only prescribe an ICS/LABA fixed dose combination product for patients not adequately controlled on a long-term asthma control medication, such as an ICS, or whose disease severity clearly warrants initiation of treatment with both an ICS and LABA. LABAs should be used for the shortest duration of time required to achieve control of asthma symptoms and discontinued, if possible, once asthma control is achieved. Patients should then be maintained on an asthma controller medication, such as an ICS.^{1,2}
- Since LABAs have a slower onset of action (up to 20 minutes) than SABAs, they should not be used to relieve sudden-onset asthma symptoms. All patients should have a rescue inhaler (e.g., albuterol) with a fast onset of action available to treat sudden-onset asthma symptoms.^{1,2}
- When theophylline is used by patients with certain medical conditions (e.g., recent peptic ulcer disease, cardiac arrhythmia, seizure disorder), there is an increased risk of worsening control of the condition or increasing the potential of theophylline toxicity.¹
- Using noncardioselective beta-blocker therapy in patients with asthma may worsen respiratory function.¹
- Duplicate LABA or ICS therapy has the potential to increase the risk of adverse drug events without a corresponding increase in efficacy.¹

Promote medication adherence with asthma therapy:

- Non-adherence with prescribed daily dosing regimens can either result in asthma symptom exacerbation or can lead the clinician to believe the patient requires additional therapy to achieve adequate control.

Encourage annual influenza vaccine:

- Persons with asthma are at risk for severe complications of influenza. Consider inactivated influenza vaccination for patients who have asthma. It is safe for administration to children more than 6 months of age and adults unless contraindications exist.^{1,3} Live attenuated influenza vaccine (LAIV) is not recommended in patients with asthma.³

Pneumococcal polysaccharide vaccinations (PPSV23):

- Asthma is an independent risk factor for invasive pneumococcal disease, a single dose of the 23-valent pneumococcal polysaccharide vaccine is indicated in persons 19 to 64 years of age with asthma is recommended.⁴

References:

1. EPR-3. Expert panel report 3: guidelines for the diagnosis and management of asthma (EPR-3 2007). NIH Publication No. 7-4051. Bethesda, MD: U.S. Department of Health and Human Services; National Institutes of Health; National Heart, Lung, and Blood Institute; National Asthma Education and Prevention Program, 2007.

2. FDA Drug Safety Communication: New safety requirements for long-acting inhaled asthma medications called Long-Acting Beta-Agonists (LABAs), Food and Drug Administration; February 18, 2010. Available from: <http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm199565.htm>. Accessed 7/12/16
3. Centers for Disease Control and Prevention. Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices–United States, 2015–16 Influenza Season. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a3.htm>. Accessed 8/8/16.
4. Centers for Disease Control and Prevention. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). MMWR 2010; 59(34):1102-1106.
5. Centers for Disease Control and Prevention. The 6/18 Initiative: Accelerating Evidence into Action. Evidence Summary: Reduce Tobacco Use. Available at: <http://www.cdc.gov/sixteen/tobacco/index.htm>. Accessed August 18, 2016.

External Messages

Flag	Internal Messages	External Messages
129	# Candidates	
240	Compliance: Theophylline	Non-adherence - theophylline therapy: According to submitted medical and pharmacy claims, it appears that your patient with asthma may be non-adherent with their theophylline therapy. From prescription data, it appears that your patient received <60 days of maintenance therapy in a 90-day period. Please review this information to determine the best course of action for your patient.
566	# Candidates-B	
1774	Compliance: Leukotriene Antagonists	Non-adherence - leukotriene modifier therapy: According to submitted medical and pharmacy claims, it appears that your patient with asthma may be non-adherent with their leukotriene modifier therapy. From prescription data, it appears that your patient received <60 days of maintenance therapy in a 90-day period. Please review this information to determine the best course of action for your patient.
2681	Incr ADE: Theophylline & PUD	Increased risk of adverse drug event - theophylline use with PUD: According to submitted medical and pharmacy claims, it appears that your patient has peptic ulcer disease (PUD) and is receiving theophylline. This drug may exacerbate PUD and should be used with caution in patients with this condition. Please review the need for this medication, consider the use of an appropriate alternative, or monitor the patient regularly for signs and symptoms of worsening PUD.
2682	Incr ADE: Theophylline & Seizure Disorder	Increased risk of adverse drug event - theophylline use with seizure disorder: According to submitted medical and pharmacy claims, it appears that your patient has a seizure disorder and is receiving theophylline. This drug may exacerbate seizure disorders and should be used with caution in patients with this condition. Please review the need for this medication, consider the use of an appropriate alternative, or monitor the patient regularly for symptoms of worsening seizure control.
2683	Incr ADE: Theophylline & Cardiac Arrhythmias	Increased risk of adverse drug event - theophylline use with cardiac arrhythmia: According to submitted medical and pharmacy claims, it appears that your patient has cardiac arrhythmias and is receiving theophylline. This drug may exacerbate cardiac arrhythmias and should be used with caution in patients with this condition. Please review the need for this medication, consider the use of an appropriate alternative, or monitor the patient regularly for signs and symptoms of arrhythmias.
2684	Incr ADE: Theophylline & Pulmonary Edema	Increased risk of adverse drug event - theophylline use with pulmonary edema: According to submitted medical and pharmacy claims, it appears that your patient has a history of pulmonary edema and is receiving theophylline. This condition decreases the clearance of theophylline and can result in theophylline toxicity. Please review the need for this medication, or consider the use of an appropriate alternative. If theophylline therapy is continued, reduced dosing

External Messages

Flag	Internal Messages	External Messages
		may be necessary if you have not already done so. Monitor the patient regularly for signs and symptoms of theophylline toxicity.
2685	Incr ADE: Theophylline & CHF	Increased risk of adverse drug event - theophylline use with CHF: According to submitted medical and pharmacy claims, it appears that your patient has a history of congestive heart failure (CHF) and is receiving theophylline. This condition decreases the clearance of theophylline and can result in theophylline toxicity. Please review the need for this medication, or consider the use of an appropriate alternative. If theophylline therapy is continued, reduced dosing may be necessary if you have not already done so. Monitor the patient regularly for signs and symptoms of theophylline toxicity.
2686	Incr ADE: Theophylline & Cor Pulmonale	Increased risk of adverse drug event - theophylline use with cor pulmonale: According to submitted medical and pharmacy claims, it appears that your patient has a history of cor pulmonale and is receiving theophylline. This condition decreases the clearance of theophylline and can result in theophylline toxicity. Please review the need for this medication, or consider the use of an appropriate alternative. If theophylline therapy is continued, reduced dosing may be necessary if you have not already done so. Monitor the patient regularly for signs and symptoms of theophylline toxicity.
2687	Incr ADE: Theophylline & Liver Disease	Increased risk of adverse drug event - theophylline use with liver disease: According to submitted medical and pharmacy claims, it appears that your patient has a history of liver disease and is receiving theophylline. This condition decreases the clearance of theophylline and can result in theophylline toxicity. Please review the need for this medication, or consider the use of an appropriate alternative. If theophylline therapy is continued, reduced dosing may be necessary if you have not already done so. Monitor the patient regularly for signs and symptoms of theophylline toxicity.
3625	Overutilization of Short-Acting Beta2-agonist, Optimize	Potential overutilization of short-acting beta-agonists: According to submitted pharmacy claims, it appears that your patient may be using short-acting beta-agonists excessively. This may indicate a loss of effectiveness, poor administration technique, or worsening asthma. Please review this patient's current therapy, inhaler technique, and consider the use of a spacer. Also, please determine if an increase in control therapy (e.g., inhaled steroid) would be appropriate.
3626	Overutilization of Short-Acting Beta2-Agonist, Add	Potential overutilization of short-acting beta-agonists: According to submitted pharmacy claims, it appears that your patient is not currently receiving asthma control therapy and may be using short-acting beta-agonist inhalers excessively. This may indicate a loss of effectiveness, poor administration technique, or worsening asthma. Please review this patient's current therapy, inhaler technique and consider the use of a spacer. Also, please determine if the addition of control therapy (e.g., inhaled steroid) would be appropriate.
3922	Incr ADE: Beta Blocker use w/Asthma dx	Potential drug-disease interaction: beta-blocker use with asthma diagnosis: According

External Messages

Flag	Internal Messages	External Messages
		to submitted medical and pharmacy claims, it appears that your patient is currently receiving a beta-blocker and has asthma. Beta-blockers should be used with caution in patients with asthma, since these agents may inhibit bronchodilation produced by endogenous catecholamines, thereby possibly worsening respiratory function. Please review the need for this medication and consider alternatives, if appropriate. If a beta-blocker is prescribed for patients with asthma, a beta-1 selective agent should be chosen and the lowest effective dose used to minimize the potential for worsening respiratory function.
3923	Incr ADE: Beta Blocker use w/inferred asthma	Potential drug-disease interaction: beta-blocker use with inferred asthma diagnosis: According to submitted medical and pharmacy claims, it appears that your patient is currently receiving a beta-blocker and has an inferred diagnosis of asthma. Beta-blockers should be used with caution in patients with asthma, since these agents may inhibit bronchodilation produced by endogenous catecholamines, thereby possibly worsening respiratory function. Please review the need for this medication and consider alternatives, if appropriate. If a beta-blocker is prescribed for patients with asthma, a beta-1 selective agent should be chosen and the lowest effective possible dose used to minimize the potential for worsening respiratory function.
4119	Duplicate Therapy: Long-Acting Beta2-Agonists	Duplicate long-acting beta-agonist therapy: According to submitted medical and pharmacy claims, it appears that your patient has received more than one long-acting beta-agonist (LABA). Use of more than one LABA is not generally recognized as synergistic and is not usually indicated. Using this combination may increase the risk of adverse effects and may decrease overall adherence with prescribed medication regimens. Please review the need for this combination of medications and, if you have not already done so, verify that your patient has discontinued the appropriate agent(s).
6510	Asthma Long-Acting Beta2-Agonist w/o short acting	Potential increased risk of adverse drug event: According to submitted pharmacy claims, it appears that your patient is receiving a long-acting beta-agonist (LABA), but is not receiving an inhaled short-acting beta-agonist. LABAs are not indicated for the treatment of acute asthma symptoms. Short-acting beta-agonists are recommended for quick relief of acute asthma symptoms. Please review this patient's current therapy, and determine if use of an inhaled short-acting beta-agonist would be appropriate.
6652	Use of nebulizers with H/O MDI use	Potential overutilization of short-acting beta-agonist nebulizers: According to submitted pharmacy claims, it appears that your patient is currently receiving short-acting beta-agonist nebulizers, and has received short-acting beta-agonist metered dose inhalers (MDIs) in the past. In clinical studies, MDIs have shown to be as effective as nebulizers when used properly. Please review this patient's current therapy, and determine if continued nebulizer use is necessary.
7740	Potential Inappropriate use of Nebulized medication	Nebulized B2 Agonist W/O CX to MDI - According to submitted pharmacy and medical claims, your patient is currently receiving therapy with a nebulized short-acting beta-2 agonist and does not appear to have a contraindication to using a metered dose inhaler (MDI). In clinical trials, MDIs with holding chambers have been shown to be as effective as nebulizers in

External Messages

Flag	Internal Messages	External Messages
		the treatment of mild or moderate asthma exacerbations. Please review your patient's current therapy and consider switching to a MDI formulation.
8319	INCR ADE: LABA_No Controller Med	Increased risk of adverse event: According to pharmacy and medical claims, your patient with asthma is receiving a long-acting beta-agonist (LABA) which appears to be their first asthma control therapy. Because LABA therapy can increase the risk of severe asthma exacerbations and death in some patients with asthma, the use of a LABA is contraindicated without the use of an asthma controller, such as an inhaled corticosteroid (ICS). Asthma treatment guidelines recommend ICS therapy as the preferred controller in patients with persistent asthma. If low-to-medium dose ICS therapy does not provide adequate control, LABA therapy can be added on. Please monitor this patient closely for worsening of asthma and consider the addition of an ICS or other asthma control therapy if contraindications exist.
8320	Incr ADE: LABA/steroid Combo_1st line	First Line LABA Use: According to submitted pharmacy and medical claims, your patient with asthma is receiving a long-acting beta-agonist (LABA)/steroid. It appears that the LABA component is not add on therapy, but part of their first line asthma control. LABAs can increase the risk of severe asthma exacerbations and death in some patients with asthma. Treatment guidelines recommend inhaled corticosteroids (ICS) as the first step in controller therapy. If low dose ICS provides inadequate relief, the option to increase the dose should be given equal weight to the addition of a LABA. LABAs should only be used long-term in patients whose asthma cannot be adequately controlled on asthma controller medications. Please monitor this patient and once asthma control is achieved, consider discontinuing the LABA portion and maintain the patient on an asthma controller medication.
8613	Compliance: Inhaled Corticosteroid	Non-adherence - inhaled corticosteroid therapy: According to submitted medical and pharmacy claims, it appears that your patient with asthma may be non-adherent with their inhaled corticosteroid therapy. From prescription data, it appears that your patient received <60 days of maintenance therapy in a 90-day period. Please review this information to determine the best course of action for your patient.
8614	Inadequate Asthma Control: ER/hosp, add inh steroid	Inadequate asthma control with an ER/hospitalization: According to submitted medical and pharmacy claims, your patient with asthma has had an ER visit and/or hospitalization within the last year and is not currently receiving inhaled corticosteroid therapy, which is considered first line control therapy by current asthma treatment guidelines. Although your patient is receiving a type of control therapy (e.g., mast cell stabilizer, leukotriene antagonist or sustained-release theophylline), please consider the use of an inhaled corticosteroid in this patient.
8615	Inadequate Asthma Control: Add inh steroid	Inadequate asthma control - add inhaled corticosteroid therapy: According to submitted medical and pharmacy claims, your patient with asthma has received multiple refills for short-acting beta-agonists during the last 4 months and is not currently receiving an inhaled corticosteroid for control therapy. Inhaled corticosteroids are considered first line control therapy by current asthma treatment guidelines. Although your patient is receiving a type of control therapy (e.g., mast cell stabilizer, leukotriene antagonist or sustained-release theophylline), please consider the use of an inhaled corticosteroid

External Messages

Flag	Internal Messages	External Messages
		in this patient.
10360	Duplicate Therapy: Formoterol/Budesonide & Oral Steroid MDI	Duplicate Therapy - Formoterol/Budesonide and Oral Steroid MDI: It appears that your patient has received the formoterol/budesonide combination inhaler with another orally inhaled steroid product. Although concurrent use of these agents may be intentional for dose titration, the risk of adverse events from unintentional duplicate therapy is significant. Please review the need for this combination of medications, and if you have not already done so, verify that your patient has discontinued the appropriate agent(s). If not, monitor the patient for signs and symptoms of toxicity.
10813	Dup Therapy: Salmeterol/Fluticasone and Oral Steroid MDI	Duplicate Therapy - Salmeterol/Fluticasone and Oral Steroid MDI: It appears that your patient has received the salmeterol/fluticasone combination inhaler with another orally inhaled steroid product. Although concurrent use of these agents may be intentional for dose titration, the risk of adverse events from unintentional duplicate therapy is significant. Please review the need for this combination of medications, and if you have not already done so, verify that your patient has discontinued the appropriate agent(s). If not, monitor the patient for signs and symptoms of toxicity.
13683	Dup therapy: LABA/Steroid and oral steroid MDI	
13684	Duplicate Therapy: Formoterol/Mometasone & Oral Steroid MDI	Duplicate Therapy - Formoterol/Mometasone and Oral Steroid MDI: It appears that your patient has received the formoterol/mometasone combination inhaler with another orally inhaled steroid product. Although concurrent use of these agents may be intentional for dose titration, the risk of adverse effects from unintentional duplicate therapy is significant. Please review the need for this combination of medications, and if you have not already done so, verify that your patient has discontinued the appropriate agent(s). If not, monitor the patient for signs and symptoms of toxicity.