

# Texas Medicaid

## Heart Failure Management

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

<b>Purpose:</b>	<p>To promote safe and effective drug therapy in patients with heart failure (HF). The following guidelines provide the foundation for this proposal and the performance indicators used to evaluate the medication management of HF:</p> <ul style="list-style-type: none"> <li>• 2021 Update to the 2017 American College of Cardiology (ACC) Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment<sup>1</sup></li> <li>• 2017 ACC/American Heart Association (AHA)/Heart Failure Society of America (HFSA) Focused Update of the 2013 American College of Cardiology Foundation (ACCF)/AHA Guideline for the Management of Heart Failure<sup>2</sup></li> <li>• 2013 ACCF/AHA Guideline for the Management of Heart Failure<sup>3</sup></li> <li>• The International Society of Heart and Lung Transplantation Guidelines for the Management of Pediatric Heart Failure: Executive Summary<sup>4</sup></li> </ul>		
<b>Why Issue was Selected:</b>	<p>According to the American Heart Association, approximately 6 million Americans at least 20 years of age have heart failure. The prevalence is expected to continue to increase and affect over 8 million adults by 2030.<sup>5</sup> Despite improved survival after HF onset, mortality rates remain around 50% within five years of HF diagnosis.<sup>3</sup> HF continues to consume extensive healthcare resources, with the total cost predicted to increase to \$69.8 billion by 2030.<sup>5</sup> Utilizing evidence-based treatments, or guideline-directed medical therapies (GDMTs), should be the standard of care to change the natural history of HF and positively influence morbidity, mortality and improve the quality of life for patients with HF.</p>		
<b>Program Specific Information:</b>	<b>Performance Indicators</b>	<b>Exceptions</b>	
		<b>(&lt; 18 Years) FFS</b>	<b>(&lt; 18 Years) MCO</b>
	• Underutilization of angiotensin-modulators	(3) 44	(98) 1,525
	• Underutilization of beta-blockers	(4) 32	(190) 1,029
	• Underutilization of aldosterone antagonists	(N/A) 22	(N/A) 2,209
	• Underutilization of SGLT2 inhibitors	(N/A) 27	(N/A) 3,027
	• Duplication of angiotensin-modulators	(0) 0	(0) 79
	• NSAID use with heart failure	(3) 20	(117) 3,825
	• Nonadherence with antihypertensives	(4) 47	(170) 4,735
	• Monitoring select HF therapies	(11) 45	(372) 2,578
<b>Setting &amp; Population:</b>	All patients with a history of heart failure (submitted ICD-10 codes) in the last 2 years will be included.		
<b>Types of Intervention:</b>	Cover letter and individual patient profiles.		

<b>Main Outcome Measures:</b>	The performance indicators will be re-measured when at least six months of outcome data are available.
<b>Anticipated Results:</b>	<ul style="list-style-type: none"> <li>Increased awareness of the latest HF clinical practice guidelines, leading to increased use of GDMTs (angiotensin-modulating therapies, beta-blockers, aldosterone antagonists, and SGLT2 inhibitors)</li> <li>Improved medication adherence with antihypertensive therapies</li> <li>Reduced adverse events by limiting therapeutic duplication of angiotensin-modulating therapies and avoiding use of NSAIDs in patients with HF</li> <li>Increased monitoring of select HF drug therapies</li> </ul>

## Performance Indicator #1: Underutilization of Angiotensin-Modulators

<b>Why has this indicator been selected?</b>	<p>Upregulation of the renin-angiotensin-aldosterone system plays a major role in the progression of HF and leads to fluid retention, peripheral arterial vasoconstriction, and harmful cardiac remodeling. Angiotensin-modulators (i.e., ACE inhibitor [ACEI], angiotensin receptor blocker [ARB], or angiotensin receptor-neprilysin inhibitor [ARNI]) can reduce the risk of death and hospitalization in patients with HF and a reduced ejection fraction of <math>\leq 40\%</math> (HFrEF). While ARNI therapy is the preferred angiotensin-modulating therapy in patients with HFrEF, an ACEI or ARB may be used as an alternative if needed. Angiotensin-modulators are recommended in adult patients with HFrEF and current or prior symptoms, unless contraindicated or not tolerated, to reduce morbidity and mortality.<sup>1,2,3,6</sup> Pediatric guidelines extrapolate data largely from the adult population with HF and recommend the use of ACEI as first-line therapy in children with systolic dysfunction.<sup>4,7</sup></p> <p>Angiotensin-modulators should be avoided during pregnancy and in those with a history of angioedema. They should be used cautiously in patients with low systolic blood pressure, renal insufficiency, bilateral renal artery stenosis or potassium levels above 5.0 mEq/L.</p>
<b>Candidates (denominator):</b>	Patients with a history of systolic or a combination of systolic/diastolic HF (submitted ICD-10 codes) in the last 2 years.
<b>Exception criteria (numerator):</b>	<p>Candidates who have not received angiotensin-modulating therapy (i.e., ACE inhibitor, ARB, ARNI) in the last 365 days.</p> <p>Exclusions: Patients who are currently pregnant, have a history of acute renal failure in the last 90 days, or have a history of renal artery stenosis, end stage renal failure, renal dialysis, or angioneurotic edema in the last 2 years. Patients taking isosorbide dinitrate and hydralazine in the last 90 days are also excluded.</p>

## Performance Indicator #2: Underutilization of Beta-blockers

<b>Why has this indicator been selected?</b>	<p>Evidence-based beta-blocker (BB) therapy in patients with HFrEF can lessen HF symptoms, improve the patient's clinical status, and enhance the patient's overall sense of well-being. Additionally, BBs can reduce all-cause and cardiovascular mortality, sudden cardiac death and HF hospitalizations in patients with HFrEF. Use of a BB proven to reduce mortality in patients with chronic HFrEF (i.e., bisoprolol, carvedilol, or sustained-release metoprolol succinate) is recommended for all adult patients with current or prior symptoms of HFrEF, unless contraindicated or not tolerated, to reduce morbidity and mortality.<sup>1,2,3,6</sup> Pediatric HF guidelines extrapolate data largely from the adult population with HF and recommend BBs as second-line therapy in children with systolic dysfunction.<sup>4,7</sup></p>
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<b>Candidates (denominator):</b>	Patients with a history of systolic or a combination of systolic/diastolic HF (submitted ICD-10 codes) in the last 2 years.
<b>Exception criteria (numerator):</b>	<p>Candidates who have not received bisoprolol, carvedilol, or metoprolol therapy (metoprolol tartrate included for titration purposes) in the last 365 days.</p> <p>Exclusions: Patients who have a relative or absolute contraindication to beta-blocker therapy (i.e., asthma, cardiac conduction disorder) in the last 2 years, bradycardia or treatment with intravenous positive inotropic agent in the last 90 days.</p>

### Performance Indicator #3: Underutilization of Aldosterone Antagonists

<b>Why has this indicator been selected?</b>	Aldosterone antagonists contribute to additional renin-angiotensin-aldosterone system blockade and have been proven to reduce mortality and HF hospitalizations in randomized clinical trials. Aldosterone antagonist doses leading to clinical benefit in HF are often lower than the dosing needed for hypertension, however routine monitoring of potassium and renal function is still recommended. Aldosterone antagonists (specifically spironolactone and eplerenone) should be considered in symptomatic adult patients with HFrEF who are already taking angiotensin-modulating therapy and an evidence-based BB, unless contraindicated or not tolerated, to reduce morbidity and mortality. <sup>1,2,3,6</sup>
<b>Candidates (denominator):</b>	Patients at least 18 years of age with a history of systolic or a combination of systolic/diastolic HF (submitted ICD-10 codes) in the last 2 years receiving angiotensin-modulating therapy and beta blocker therapy in the last 45 days.
<b>Exception criteria (numerator):</b>	<p>Candidates who have not received an aldosterone antagonist in the last 365 days.</p> <p>Exclusions: Patients with a history of acute renal failure or hyperkalemia in the last 90 days, or chronic kidney disease (CKD) stage 4, end stage renal failure or renal dialysis in the last 2 years.</p>

### Performance Indicator #4: Underutilization of SGLT2 Inhibitors

<b>Why has this indicator been selected?</b>	Sodium-glucose cotransporter-2 (SGLT2) inhibitors are a new addition to HFrEF GDMTs. Select SGLT2 inhibitors have been shown to decrease mortality and HF hospitalizations in randomized clinical trials, regardless of the presence of diabetes. SGLT2 inhibitor doses leading to clinical benefit in HF and renal dosing limits may be different than those used for patients with diabetes. SGLT inhibitors should be avoided in patients with end stage renal disease/on dialysis or type 1 diabetes. SGLT2 inhibitors (specifically dapagliflozin and empagliflozin) should be considered in symptomatic adult patients with HFrEF who are already taking angiotensin-modulating therapy, an evidence-based BB, and an aldosterone antagonist (if appropriate), unless contraindicated or not tolerated, to reduce morbidity and mortality. <sup>1,6</sup>
<b>Candidates (denominator):</b>	Patients at least 18 years of age with a history of systolic or a combination of systolic/diastolic HF (submitted ICD-10 codes) in the last 2 years receiving angiotensin-modulating therapy and beta blocker therapy in the last 45 days.
<b>Exception criteria (numerator):</b>	<p>Candidates who have not received an SGLT2 inhibitor with proven cardiovascular risk reduction in patients with HF (dapagliflozin, empagliflozin) in the last 365 days.</p> <p>Exclusions: Patients who are currently pregnant, have a history of acute renal failure in the last 90 days, or end stage renal failure, renal dialysis or type 1 diabetes in the last 2 years.</p>

## Performance Indicator #5: Duplication of Angiotensin-Modulators

<b>Why has this indicator been selected?</b>	The use of duplicate angiotensin-modulating therapies (i.e., ACE inhibitor, ARB, ARNI) may increase the risk of adverse drug events (i.e., hypotension, renal dysfunction, and hyperkalemia) without improving clinical outcomes. Therapeutic duplication may also decrease overall medication regimen adherence. <sup>1,2,3,6</sup>
<b>Candidates (denominator):</b>	Patients with a history of heart failure (submitted ICD-10 codes) in the last 2 years receiving angiotensin-modulating therapy in the last 90 days.
<b>Exception criteria (numerator):</b>	Candidates receiving more than one angiotensin-modulating medication with > 60 days of overlapping therapy in the last 90 days.

## Performance Indicator #6: NSAID Use with Heart Failure

<b>Why has this indicator been selected?</b>	Nonsteroidal anti-inflammatory drugs (NSAIDs) inhibit the natriuretic effect of diuretics, interfere with the hemodynamic effects of angiotensin-modulating therapies, and can also increase the risk of renal toxicities from these therapies. NSAIDs promote sodium and water retention which can lead to volume overload and HF exacerbations in susceptible patients. HF treatment guidelines recommend alternative agents be considered in patients with HF. <sup>3,6,8</sup>
<b>Candidates (denominator):</b>	Patients with a history of heart failure (submitted ICD-10 codes) in the last 2 years.
<b>Exception criteria (numerator):</b>	Candidates receiving NSAID therapy within the last 45 days.

## Performance Indicator #7: Nonadherence with Antihypertensives

<b>Why has this indicator been selected?</b>	Adherence to prescribed HF medications is critical to the effectiveness of GDMT. Hypertension is one of the most important modifiable risk factors for HF and long-term treatment of hypertension reduces the risk of HF by approximately 50% and can prevent or slow disease progression. Significant medication nonadherence is estimated to range from 20 to 50% in patients with HF rEF. <sup>1,2,3,6</sup>
<b>Candidates (denominator):</b>	Patients with a history of heart failure (submitted ICD-10 codes) in the last 2 years receiving antihypertensive drug therapy the most recent 45 days and 90 to 135 days ago (identifies chronic therapy).
<b>Exception criteria (numerator):</b>	Candidates who received less than a 60-day supply of antihypertensive medication in the last 90-day period.  Exclusion: Patients who are currently pregnant.

## Performance Indicator #8: Monitoring Select Heart Failure Drug Therapies

<b>Why has this indicator been selected?</b>	Certain antihypertensive and HF therapies, such as angiotensin-modulators, diuretics, and aldosterone antagonists, can impact renal function and electrolytes. Current HF treatment guidelines recommend routine laboratory assessment and follow-up to help achieve goals of therapy and prevent adverse events. <sup>1</sup>
<b>Candidates (denominator):</b>	Patients with a history of heart failure (submitted ICD-10 codes) in the last 2 years receiving angiotensin-modulating, diuretic or aldosterone antagonist drug therapy in the last 45 days.

**Exception criteria  
(numerator):**

Candidates without documentation of renal function labs or electrolytes (submitted CPT codes) in the last 365 days.

## References:

1. Maddox TM, Januzzi JL Jr., Allen LA, et al. 2021 update to the 2017 ACC expert consensus decision pathway for optimization of heart failure treatment: answers to 10 pivotal issues about heart failure with reduced ejection fraction: a report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol*. 2021;77:772–810. Available at: <https://doi.org/10.1016/j.jacc.2020.11.022>. Accessed February 2022.
2. Yancy CW, Jessup M, Bozkurt B, et al. 2017 ACC/AHA/HFSA focused update of the 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. *J Am Coll Cardiol*. 2017;70:776–803. Available at: <https://doi.org/10.1016/j.jacc.2017.04.025>. Accessed February 2022.
3. Yancy CW, Jessup M, Bozkurt B, et al. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2013;62:e147–239. Available at: <https://doi.org/10.1016/j.jacc.2013.05.019>. Accessed February 2022.
4. Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society of Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: executive summary. *J Heart Lung Transpl*. 2014;33:888–909. Available at: [https://www.jhltonline.org/article/S1053-2498\(14\)01156-5/fulltext](https://www.jhltonline.org/article/S1053-2498(14)01156-5/fulltext). Accessed February 2022.
5. Tsao CW, Aday AW, Almarzooq ZI, et al; on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2022 update: a report from the American Heart Association. *Circulation*. 2022;145:e153–e639. Available at: <https://www.ahajournals.org/doi/epub/10.1161/CIR.0000000000001052>. Accessed February 2022.
6. Murphy SP, Ibrahim NE, Januzzi JL. Heart failure with reduced ejection fraction: a review. *JAMA*. 2020;324(5):488–504. Available at: <https://doi.org/10.1001/jama.2020.10262>. Accessed February 2022.
7. Das BB. Current state of pediatric heart failure. *Children*. 2018;5(7):88. Available at: <https://doi.org/10.3390/children5070088>. Accessed February 2022.
8. Page RL II, O'Bryant CL, Cheng D, et al, on behalf of the American Heart Association Clinical Pharmacology and Heart Failure and Transplantation Committees of the Council on Clinical Cardiology; Council on Cardiovascular Surgery and Anesthesia; Council on Cardiovascular and Stroke Nursing; and Council on Quality of Care and Outcomes Research. Drugs that may cause or exacerbate heart failure: a scientific statement from the American Heart Association. *Circulation*. 2016;134:e32–e69. Available at: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000000426>. Accessed February 2022.



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**RE: Caring for Your Patients with Heart Failure**

Dear Dr. <<Name>>:

Thank you for providing quality care for Texas Fee-For-Service (FFS) Medicaid patients. The content of this letter has been approved by the Texas Drug Utilization Review (DUR) Board, whose function is to promote safe and cost-effective drug therapy and provide opportunities for continuous improvement of care.

This retrospective claims review was designed to assist you in caring for your patients with heart failure (HF). This program is based on treatment guidelines from the American College of Cardiology, the American Heart Association, the Heart Failure Society of America and pediatric guidelines from the International Society of Heart and Lung Transplantation and is designed to help reduce the risk of morbidity and mortality associated with HF.<sup>1-4</sup>

The total Texas Medicaid Fee-For-Service performance indicators for all patients (including those <18 years) with opportunities for improving the safe and effective use of heart failure therapies are shown in the table below.

**Total Texas Medicaid FFS Specific Data**

Heart Failure Management Indicator Summary	Number of Opportunities*	
	< 18 Years	≥ 18 Years
• Utilize guideline-directed medical therapy in appropriate patients with HF	7	118
• Identify patients with HF who may be at risk for drug-induced adverse events from NSAID therapy	3	17
• Promote safe and effective use of HF medications through identification of duplicate therapy and enhanced laboratory monitoring	11	34
• Improve HF medication adherence	4	43

\*Based on data through 3/18/2022.

**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 as well as some recommended laboratory monitoring or physical examinations may not appear on the patient’s profile because they may have been privately purchased or were not billable to Medicaid Services.** 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

### Heart Failure Management Indicator Summary

#### **Utilize guideline-directed medical therapy (GDMT) in appropriate patients with HF:<sup>1-7</sup>**

- Angiotensin-modulating therapies (ACE inhibitors [ACEI], angiotensin receptor blockers [ARB] or an angiotensin receptor-neprilysin inhibitor [ARNI]) reduce morbidity and mortality in patients with HF and a reduced ejection fraction of  $\leq 40\%$  (HFrEF). While ARNI therapy is the preferred angiotensin-modulating therapy for HFrEF, an ACEI or ARB may be used as an alternative if needed. HF guidelines recommend the use of angiotensin-modulators in adult patients with HFrEF and current or prior symptoms unless contraindications or intolerances exist. Pediatric HF guidelines extrapolate data largely from adults with HF and recommend ACEI as first-line therapy in children with systolic dysfunction.
- Evidence-based beta-blocker therapy (bisoprolol, carvedilol, and sustained-release metoprolol succinate) is recommended for all adult patients with current or prior symptoms of HFrEF to reduce morbidity and mortality, unless contraindications or intolerances exist. Pediatric HF guidelines recommend BBs as second-line therapy in children with systolic dysfunction.
- Aldosterone antagonists (specifically spironolactone and eplerenone) should be considered in symptomatic adult patients with HFrEF who are already taking angiotensin-modulating therapy and an evidence-based BB to reduce morbidity and mortality, unless contraindications or intolerances exist. It may also be reasonable to consider spironolactone in children with systolic dysfunction.
- Select sodium-glucose cotransporter-2 (SGLT2) inhibitors have been shown to decrease mortality and HF hospitalizations in randomized clinical trials, regardless of the presence of diabetes. SGLT2 inhibitors (specifically dapagliflozin and empagliflozin) should be considered in symptomatic adult patients with HFrEF who are already taking angiotensin-modulating therapy, an evidence-based BB, and an aldosterone antagonist (if appropriate) to reduce morbidity and mortality, unless contraindications or intolerances exist. SGLT2 inhibitor doses and renal dosing limits when treating HF may be different than those for diabetes or chronic kidney disease so it is important to be cognizant of the indication for use and adjust the dosing accordingly.

#### **Identify patients with HF who may be at risk for drug-induced adverse events from NSAID therapy:<sup>3,5,7</sup>**

- Nonsteroidal anti-inflammatory drugs (NSAIDs) inhibit the natriuretic effect of diuretics, interfere with the hemodynamic effects of angiotensin-modulating therapies, and can increase the risk of renal toxicities from these therapies. NSAIDs promote sodium and water retention which can lead to volume overload and HF exacerbations in susceptible patients. HF treatment guidelines recommend alternative agents be considered.
- Depending on the indication for NSAID use, alternatives may include acetaminophen, topical therapies, exercise, weight loss, physical therapy, massage, or other pain reduction strategies. If NSAIDs are deemed necessary, use the lowest effective dose for the shortest duration possible and advise patients to be vigilant with their self-monitoring of daily weights and HF symptoms.

#### **Promote safe and effective use of HF medications through identification of duplicate therapy and enhanced laboratory monitoring:<sup>1-3,5</sup>**

- Duplicate angiotensin-modulating therapies (ACE inhibitor, ARB, ARNI) may increase the risk of adverse drug events without improving clinical outcomes, particularly if coordination of care issues play a role. Therapeutic duplication may also decrease overall medication regimen adherence.
- Certain antihypertensive and HF therapies, such as angiotensin-modulators, diuretics, and aldosterone antagonists, can impact renal function and electrolytes. Current HF treatment guidelines recommend routine laboratory assessment and follow-up to help achieve goals of therapy and prevent adverse events.

## Heart Failure Management Indicator Summary

### Improve HF medication adherence:<sup>1-3,5</sup>

- Medications are integral to managing HF and associated comorbidities and as such, patients with HF are prescribed an average of six different medications and may have complex dosing regimens. Significant medication nonadherence is estimated to range from 20 to 50% in patients with HFrEF and such nonadherence is associated with worse outcomes.
- Nonadherence to diet and medications can lead to HF exacerbations, hospitalizations, and disease progression while interventions to enhance medication adherence in patients with HF are associated with lower mortality and hospital admissions.
- Hypertension is one of the most important modifiable risk factors for HF. Achieving a significant reduction in systolic blood pressure can reduce the incidence of HF and overall cardiovascular death in patients with increased cardiovascular risk. In those with HFrEF, controlling blood pressure may reduce the risk of HF disease progression and adherence with antihypertensive therapy is key to success.

### Promote HF self-management and preventive care strategies.<sup>1-3,5</sup>

- Monitor HF signs and symptoms (including daily weights): provide patients with individualized information and if appropriate, include diuretic dose adjustments and a care plan to follow if they experience targeted weight gain in a specified time frame or worsening dyspnea/edema.
- Exercise: recommend regular aerobic exercise that provokes mild/moderate breathlessness as this improves HF symptoms and functional capacity while reducing risk of HF rehospitalization and mortality.
- Sodium and water intake: mild to moderate sodium restriction is reasonable to help diuretics maintain their efficacy although not supported by high level evidence. Restricted fluid intake may be appropriate for patients with refractory or advanced HF, who are symptomatic or have severe hyponatremia.
- Weight: promote maintenance of a healthy weight as HF mortality increases in patients with cardiac cachexia and those who are morbidly obese. Weight management may also positively affect comorbidities.
- Smoking/alcohol/other drug use: recommend smoking cessation, moderation or abstinence from alcohol consumption and avoidance of illicit drug use. Alternative products, herbal therapies and dietary supplements may also pose risks for patients with HF and should be avoided.
- Immunizations: recommend influenza and pneumococcal vaccines when appropriate.

### References:

1. Maddox TM, Januzzi JL Jr., Allen LA, et al. 2021 update to the 2017 ACC expert consensus decision pathway for optimization of heart failure treatment: answers to 10 pivotal issues about heart failure with reduced ejection fraction: a report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol* 2021;77:772–810. Available at: <https://doi.org/10.1016/j.jacc.2020.11.022>. Accessed March 2022.
2. Yancy CW, Jessup M, Bozkurt B, et al. 2017 ACC/AHA/HFSA focused update of the 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. *J Am Coll Cardiol*. 2017;70:776–803. Available at: <https://doi.org/10.1016/j.jacc.2017.04.025>. Accessed March 2022.
3. Yancy CW, Jessup M, Bozkurt B, et al. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2013;62:e147–239. Available at: <https://doi.org/10.1016/j.jacc.2013.05.019>. Accessed March 2022.
4. Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society of Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: executive summary. *J Heart Lung Transpl*. 2014;33:888–909. Available at: [https://www.jhltonline.org/article/S1053-2498\(14\)01156-5/fulltext](https://www.jhltonline.org/article/S1053-2498(14)01156-5/fulltext). Accessed March 2022.
5. Murphy SP, Ibrahim NE, Januzzi JL. Heart failure with reduced ejection fraction: a review. *JAMA*. 2020;324(5):488–504. Available at: <https://doi.org/10.1001/jama.2020.10262>. Accessed March 2022.
6. Das BB. Current state of pediatric heart failure. *Children*. 2018;5(7):88. Available at: <https://doi.org/10.3390/children5070088>. Accessed March 2022.
7. Page RL II, O’Bryant CL, Cheng D, et al, on behalf of the American Heart Association Clinical Pharmacology and Heart Failure and Transplantation Committees of the Council on Clinical Cardiology; Council on Cardiovascular Surgery and Anesthesia; Council on Cardiovascular and Stroke Nursing; and Council on Quality of Care and Outcomes Research. Drugs that may cause or exacerbate heart failure: a scientific statement from the American Heart Association. *Circulation*. 2016;134:e32–e69. Available at: <https://www.ahajournals.org/doi/10.1161/CIR.000000000000426>. Accessed March 2022.

**External Messages**

<b>Flag Internal Messages</b>	<b>External Messages</b>
3206 NSAID use with Heart Failure	<p>According to submitted pharmacy and medical claims, it appears your patient with heart failure (HF) recently received a nonsteroidal anti-inflammatory drug (NSAID). HF treatment guidelines recommend that NSAIDs should be avoided in patients with HF because they can cause sodium and water retention, leading to heart failure exacerbations. Additionally, NSAID use can attenuate the efficacy and enhance the toxicity of diuretics and angiotensin-modulating therapies, both of which are guideline-directed medical therapies for HF. Please review this information, consider an alternative therapy if appropriate, and monitor your patient for symptoms of worsening heart failure if continued NSAID use is necessary.</p>
5724 Heart Failure: Underuse of Beta-blocker Therapy	<p>According to submitted pharmacy and medical claims, it appears your patient with heart failure (HF) may not be receiving HF-specific beta-blocker (BB) therapy (carvedilol, sustained-release metoprolol, bisoprolol). Use of HF-specific BB therapy in conjunction with angiotensin-modulating therapy decreases morbidity, mortality, and hospitalizations in patients with HF. Current HF guidelines recommend use of HF-specific BBs in all patients with chronic HF with reduced ejection fraction (HFrEF), unless there are contraindications. Pediatric HF guidelines, following adult data, encourage considering BBs in children with systolic dysfunction. Please review your patient's medication regimen and determine if a HF-specific BB would be appropriate.</p>
9986 Heart Failure: Underuse of Angiotensin-modulating Therapy	<p>According to submitted pharmacy and medical claims, it appears your patient with heart failure (HF) may not be receiving angiotensin-modulating therapy (i.e., ACE inhibitor [ACEI], angiotensin receptor blocker [ARB], or angiotensin receptor-neprilysin inhibitor [ARNI]). Use of angiotensin-modulating therapy decreases morbidity, mortality, and hospitalizations in patients with HF. Current HF guidelines recommend use of angiotensin-modulating therapy in all patients with chronic HF with reduced ejection fraction (HFrEF), unless there are contraindications. Pediatric HF guidelines also encourage use of ACE inhibitors in children with systolic dysfunction. Please review your patient's medication regimen and determine if angiotensin-modulating therapy would be appropriate.</p>
10221 Heart Failure: Underuse of Aldosterone Antagonist	<p>According to submitted pharmacy and medical claims, it appears your patient with heart failure (HF) may not be receiving aldosterone antagonist therapy (spironolactone or eplerenone). Use of aldosterone antagonist therapy decreases mortality and risk of hospitalization in patients with HF. Current practice guidelines recommend the use of an aldosterone antagonist in patients with chronic HF with reduced ejection fraction (HFrEF) who remain symptomatic while already receiving angiotensin-modulating and beta-blocker therapy, unless contraindications exist (i.e., hyperkalemia, severe renal impairment). Please review your patient's medication regimen and determine if aldosterone antagonist therapy would be appropriate.</p>

**External Messages**

<b>Flag Internal Messages</b>	<b>External Messages</b>
15353 HF: Nonadherence with Antihypertensives	According to submitted pharmacy and medical claims, it appears your patient with heart failure may be nonadherent with chronic antihypertensive therapy, based on receiving less than a 60-day supply of the identified medication in a recent 90-day period. Poor antihypertensive medication adherence can lead to heart failure exacerbations, hospitalizations, and disease progression. Please review this information to determine the best course of action for your patient.
110701 HF: Duplicate Angiotensin-modulating Therapy	According to submitted pharmacy and medical claims, it appears your patient with heart failure may be receiving more than one angiotensin-modulating therapy concurrently. Duplication of angiotensin-modulating therapies may increase the risk of adverse drug events and decrease overall medication regimen adherence without improving clinical outcomes. Please review your patient's medication regimen and verify if one of these medications should be discontinued.
116347 Select HF Therapy without Annual Lab Monitoring	According to submitted pharmacy and medical claims, your patient diagnosed with heart failure (HF) is receiving an angiotensin-modulating therapy (such as an ACE inhibitor or angiotensin receptor blocker), a diuretic or an aldosterone antagonist but has not had renal function tests or electrolytes obtained in the last year. Renal dysfunction and electrolyte abnormalities have been reported with these therapies. Heart failure treatment guidelines recommend routine monitoring of renal function to assess therapy and prevent adverse events. Please consider ordering renal function and electrolyte tests for your patient.
116522 Heart Failure: Underuse of SGLT2 Inhibitor	According to submitted pharmacy and medical claims, it appears your patient with heart failure (HF) may not be receiving sodium-glucose cotransporter-2 (SGLT2) inhibitor therapy. Use of select SGLT2 inhibitors decreases mortality and risk of hospitalization in patients with HF, regardless of the presence of diabetes. Current HF guidelines recommend the use of an SGLT2 inhibitor (specifically dapagliflozin or empagliflozin) in patients with chronic HF with reduced ejection fraction (HFrEF) who remain symptomatic while already receiving angiotensin-modulating and beta-blocker therapy, unless contraindications exist. Please review your patient's medication regimen and determine if SGLT2 inhibitor therapy would be appropriate.

03/17/2022