



## Treprostinil Sodium for the Treatment of Pulmonary Hypertension

### DESCRIPTION

Treprostinil sodium is a stable synthetic analog of prostacyclin, a powerful vasodilator and inhibitor of platelet aggregation. Its exact mechanism of vasodilation activity is not known, but prostacyclin synthase expression is decreased in the lungs of individuals with pulmonary arterial hypertension (PAH).

Treprostinil sodium is commercially available for use in three routes of administration: subcutaneous injection, intravenous injection and oral inhalation.

An example of a preparation of treprostinil sodium in injection form is Remodulin<sup>®</sup>.

An example of a preparation of treprostinil sodium in oral inhalation form is Tyvaso<sup>®</sup>.

### REFER TO DECISION SUPPORT TREE

### POLICY

#### Proposal is to add the following statement in blue text.

- Treprostinil sodium for injection for the treatment of pulmonary hypertension is considered **medically necessary** if the medical appropriateness criteria are met. (See **Medical Appropriateness below.**)
- Treprostinil sodium for oral inhalation for the treatment of pulmonary hypertension is considered **medically necessary** if the medical appropriateness criteria are met. (See **Medical Appropriateness below.**)
- Treprostinil sodium in combination therapy with another pulmonary hypertension agent (e.g., ambrisentan, bosentan, epoprostenol sodium, iloprost, sildenafil citrate, tadalafil) for the management of pulmonary arterial hypertension is considered **medically necessary** when used to diminish the rate of clinical deterioration when in transition from one agent to another.
- Treprostinil sodium for the treatment of other conditions/diseases, including, but not limited to, the following is considered **investigational**. (See **Applicable Tennessee State Mandate Requirements below.**)
  - Pulmonary hypertension with left heart disease (WHO Group 2)
  - Pulmonary hypertension associated with lung diseases and/or hypoxemia (WHO Group 3)
  - Pulmonary hypertension due to chronic thrombotic and/or embolic disease (WHO Group 4)
  - Pulmonary hypertension with unclear multifactorial mechanisms (e.g., hematological disorders, systemic orders, metabolic disorders) (WHO Group 5)
  - Pulmonary arterial hypertension in combination therapy with another pulmonary hypertension agent (e.g., ambrisentan, bosentan, epoprostenol sodium, iloprost, sildenafil citrate, tadalafil) in uses other than to diminish the rate of clinical deterioration when in transition from one agent to another

#### Policies with similar titles:

- Ambrisentan for the Treatment of Pulmonary Hypertension
- Bosentan for the Treatment of Pulmonary Hypertension
- Epoprostenol for the Treatment of Pulmonary Hypertension
- Iloprost for the Treatment of Pulmonary Hypertension
- Sildenafil Citrate for the Treatment of Pulmonary Hypertension



## MEDICAL APPROPRIATENESS

### Proposal is to add the following statements in blue text.

- Treprostinil sodium in injection form for the treatment of pulmonary hypertension is considered **medically appropriate** if **ALL** of the following criteria are met:
  - Disease is classified as World Health Organization (WHO) Group 1I [i.e., pulmonary arterial hypertension (PAH)]
  - Individual has a functional classification per the New York Heart Association/World Health Organization (NYHA/WHO) Classification of Functional Status of Patients with Pulmonary Hypertension of **ANY ONE** of the following:
    - Class II – mild limitation of exercise tolerance
    - Class III – moderate limitation of exercise tolerance
    - Class IV – severe limitation of exercise tolerance
- Treprostinil sodium in oral inhalation form for the treatment of pulmonary hypertension is considered **medically appropriate** if **ALL** of the following criteria are met:
  - Disease is classified as World Health Organization (WHO) Group 1 [i.e., pulmonary arterial hypertension (PAH)]
  - Class III (moderate limitation of exercise tolerance) functional classification per the New York Heart Association/World Health Organization (NYHA/WHO) Classification of Functional Status of Patients with Pulmonary Hypertension

## APPLICABLE TENNESSEE STATE MANDATE REQUIREMENTS

Tennessee State law requires coverage of off-label indications of Food and Drug Administration (FDA) approved drugs when the off-label use is relative to life-threatening illnesses, such as cancer, AIDS, and coronary heart disease and recognized in one of the standard reference compendia (As defined in the statute: The United States Pharmacopoeia Drug Information, The American Medical Association Drug Evaluations, & The American Hospital Formulary Service Drug Information) or in the medical literature. This law is applicable to all fully insured members. The law is not applicable to self-funded accounts, but coverage for off-label uses may be provided based on the contractual agreement.

## ADDITIONAL INFORMATION

For appropriate dosage information, contraindications, precautions, warnings, and monitoring information, please refer to one of the standard reference compendia (e.g., The American Hospital Formulary Service Drug Information).

No controlled studies were found in the published literature that validate the use of treprostinil sodium for the treatment of any other conditions/diseases.

## SOURCES

Lexi-Comp Online. (2009). AHFS DI. *Treprostinil Sodium*. Retrieved September 29, 2009 from Lexi-Comp Online with AHFS.

MICROMEDEX Healthcare Series. Drugdex Drug Evaluations. (2009). *Treprostinil*. Retrieved September 29, 2009 from MICROMEDEX Healthcare Series.

U. S. Food and Drug Administration. (2008, March). Center for Drug Evaluation and Research. *Remodulin<sup>®</sup> (treprostinil sodium) injection*. Retrieved September 29, 2009 from [http://www.accessdata.fda.gov/drugsatfda\\_docs/label/2008/021272s008lbl.pdf](http://www.accessdata.fda.gov/drugsatfda_docs/label/2008/021272s008lbl.pdf).



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# Policy

Medical Policy Manual

**Draft: Do Not Implement**

U. S. Food and Drug Administration. (2008, March). Center for Drug Evaluation and Research. *Remodulin<sup>®</sup> (treprostinil sodium) injection approval letter*. Retrieved September 29, 2009 from [http://www.accessdata.fda.gov/drugsatfda\\_docs/applletter/2008/021272s008ltr.pdf](http://www.accessdata.fda.gov/drugsatfda_docs/applletter/2008/021272s008ltr.pdf).

U. S. Food and Drug Administration. (2009, July). Center for Drug Evaluation and Research. *Tyvaso<sup>®</sup> (treprostinil sodium) inhalation solution*. Retrieved September 29, 2009 from [http://www.accessdata.fda.gov/drugsatfda\\_docs/label/2009/022387LBL.pdf](http://www.accessdata.fda.gov/drugsatfda_docs/label/2009/022387LBL.pdf).

U. S. Food and Drug Administration. (2009, July). Center for Drug Evaluation and Research. *Tyvaso<sup>®</sup> (treprostinil sodium) inhalation solution approval letter*. Retrieved September 29, 2009 from [http://www.accessdata.fda.gov/drugsatfda\\_docs/applletter/2009/022387s000ltr.pdf](http://www.accessdata.fda.gov/drugsatfda_docs/applletter/2009/022387s000ltr.pdf).

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## Pharmaceutical Decision Support Tree

### Treprostinil Sodium (Remodulin<sup>®</sup>, Tyvaso<sup>®</sup>)

1. Is the requested medication being used to treat **ANY ONE** of the following?

- Pulmonary hypertension with left heart disease (WHO Group 2)
- Pulmonary hypertension associated with lung diseases and/or hypoxemia (WHO Group 3)
- Pulmonary hypertension due to chronic thrombotic and/or embolic disease (WHO Group 4)
- Pulmonary hypertension with unclear multifactorial mechanisms (e.g., hematological disorders, systemic orders, metabolic disorders) (WHO Group 5)
- Pulmonary arterial hypertension in combination therapy with another pulmonary hypertension agent (e.g., ambrisentan, bosentan, epoprostenol sodium, iloprost, sildenafil citrate, tadalafil) for uses other than to diminish the rate of clinical deterioration when in transition from one agent to another

If yes, this does not meet medical necessity and/or medical appropriateness criteria  
If no, go to question #2

2. Does the individual have a diagnosis of pulmonary arterial hypertension (PAH) [i.e., World Health Organization (WHO) Group 1]?

If yes, go to question #3  
If no, this does not meet medical necessity and/or medical appropriateness criteria

3. Is the individual receiving another agent for the treatment of PAH (e.g., ambrisentan, bosentan, epoprostenol sodium, iloprost, sildenafil citrate, tadalafil)?

If yes, go to question #4  
If no, go to question #5

4. Does the individual require combination therapy to diminish the rate of clinical deterioration in transition to treprostinil sodium?

If yes, go to question #5  
If no, this does not meet medical necessity and/or medical appropriateness criteria

5. Does the individual have a Class III (moderate limitation of exercise tolerance) functional classification per the New York Heart Association/World Health Organization (NYHA/WHO) Classification of Functional Status of Patients with Pulmonary Hypertension?

If yes, this satisfies medical necessity and medical appropriateness criteria  
If no, go to question #6

6. Does the individual have a functional classification per the New York Heart Association/World Health Organization (NYHA/WHO) Classification of Functional Status of Patients with Pulmonary Hypertension of **ANY ONE** of the following?

- Class II – mild limitation of exercise tolerance
- Class IV – severe limitation of exercise tolerance?

If yes, go to question #7  
If no, this does not meet medical necessity and/or medical appropriateness criteria

7. Is the agent requested the injection form of treprostinil sodium (e.g., Remodulin<sup>®</sup>)?



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## Pharmaceutical Decision Support Tree

If yes, this satisfies medical necessity and medical appropriateness criteria

If no, this does not meet medical necessity and/or medical appropriateness criteria