

Clinical Policy: Tezacaftor/Ivacaftor; Ivacaftor (Symdeko)

Reference Number: PA.CP.PHAR.377

Effective Date: 01/2019

Last Review Date: 07/2025

Description

Tezacaftor/ivacaftor; ivacaftor (Symdeko[®]) is a combination drug for cystic fibrosis (CF).

- Tezacaftor facilitates the cellular processing and trafficking of normal and select mutant forms of cystic fibrosis transmembrane conductance regulator [*CFTR*; (including *F508del-CFTR*)] to increase the amount of mature *CFTR* protein delivered to the cell surface.
- Ivacaftor is a *CFTR* potentiator that facilitates increased chloride transport by potentiating the channel-open probability (or gating) of the *CFTR* protein at the cell surface.
- The combined effect of tezacaftor and ivacaftor is increased quantity and function of *CFTR* at the cell surface, resulting in increases in chloride transport.

FDA Approved Indication(s)

Symdeko is indicated for the treatment of patients with CF aged 6 years and older who are homozygous for the *F508del* mutation or who have at least one mutation in the *CFTR* gene that is responsive to tezacaftor/ivacaftor based on *in vitro* data and/or clinical evidence.

If the patient's genotype is unknown, an FDA-cleared CF mutation test should be used to detect the presence of a *CFTR* mutation followed by verification with bi-directional sequencing when recommended by the mutation test instructions for use.

Policy/Criteria

Provider must submit documentation (such as office chart notes, lab results or other clinical information) supporting that member has met all approval criteria.

It is the policy of PA Health & Wellness[®] that Symdeko is **medically necessary** when the following criteria are met:

I. Initial Approval Criteria

A. Cystic Fibrosis (must meet all):

1. Diagnosis of CF;
2. Age $\geq$ 6 years;
3. Prescribed by or in consultation with a pulmonologist or cystic fibrosis specialist;
4. Documentation indicates member has baseline forced expiratory volume in 1 second (FEV1), unless member is unable to perform spirometry testing;
5. Symdeko is not prescribed concurrently with other *CFTR* modulator combination products (e.g., Alyftrek[®], Kalydeco[®], Orkambi[®], Trikafta[®]);
6. One of the following (a or b):
 - a. Confirmation member is homozygous for the *F508del* mutation in the *CFTR* gene;
 - b. Presence of at least one mutation in the *CFTR* gene that is responsive to Symdeko based on *in vitro* data and/or clinical evidence (*see Appendix D*);
7. Dose does not exceed one of the following (a or b):

- a. Age 6 to < 12 years weighing <30 kg (both i and ii):
 - i. Tezacaftor 50 mg/ivacaftor 150 mg;
 - ii. 1 tablet tezacaftor/ivacaftor and 1 tablet ivacaftor;
- b. Age 6 to < 12 years weighing ≥ 30 kg and ≥ 12 years (both i and ii):
 - i. Tezacaftor 100 mg/ivacaftor 300 mg per day;
 - ii. 1 tablet tezacaftor/ivacaftor and 1 tablet ivacaftor per day.

Approval duration: 6 months

B. Other diagnoses/indications

1. Refer to the off-label use policy for the relevant line of business if diagnosis is NOT specifically listed under section III (Diagnoses/Indications for which coverage is NOT authorized): PA.CP.PMN.53.

II. Continued Therapy

A. Cystic Fibrosis (must meet all):

1. Currently receiving medication via PA Health & Wellness benefit or member has previously met all initial approval criteria or the Continuity of Care policy (PA.PHARM.01) applies;
2. Member is responding positively to therapy OR the member continues to benefit from therapy based on prescriber's assessment;
3. Symdeko is not prescribed concurrently with other CFTR modulator combination products (e.g., Alyftrek, Kalydeco, Orkambi, Trikafta);
4. If request is for a dose increase, new dose does not exceed one of the following (a or b):
 - a. Age 6 to < 12 years weighing <30 kg (both i and ii):
 - i. Tezacaftor 50 mg/ivacaftor 150 mg;
 - ii. 1 tablet tezacaftor/ivacaftor and 1 tablet ivacaftor;
 - b. Age 6 to < 12 years weighing ≥ 30 kg and ≥ 12 years (both i and ii):
 - i. Tezacaftor 100 mg/ivacaftor 300 mg per day;
 - ii. 1 tablet tezacaftor/ivacaftor and 1 tablet ivacaftor per day.

Approval duration: 12 months

B. Other diagnoses/indications (must meet 1 or 2):

1. Currently receiving medication via PA Health & Wellness benefit and documentation supports positive response to therapy or the Continuity of Care policy (PA.PHARM.01) applies.

Approval duration: Duration of request or 6 months (whichever is less); or

2. Refer to the off-label use policy for the relevant line of business if diagnosis is NOT specifically listed under section III (Diagnoses/Indications for which coverage is NOT authorized): PA.CP.PMN.53.

III. Diagnoses/Indications for which coverage is NOT authorized:

- A. Non-FDA approved indications, which are not addressed in this policy, unless there is sufficient documentation of efficacy and safety according to the off label use policy – PA.CP.PMN.53 or evidence of coverage documents.

IV. Appendices/General Information

Appendix A: Abbreviation/Acronym Key

ACFLD: advanced cystic fibrosis lung disease

CF: cystic fibrosis

CFTR: cystic fibrosis transmembrane conductance regulator

FDA: Food and Drug Administration

ppFEV1: percent predicted forced expiratory volume in 1 second

Appendix B: Therapeutic Alternatives

Not applicable

Appendix C: Contraindications/Boxed Warnings

None reported

Appendix D: List of CFTR Gene Mutations that Produce CFTR Protein and are Responsive to Symdeko

CFTR Gene Mutations that Produce CFTR Protein and are Responsive to Symdeko					
546insCTA	E92K	G576A	L346P	R117G	S589N
711+3A→G	E116K	G576A;R668C [†]	L967S	R117H	S737F
2789+5G→A	E193K	G622D	L997F	R117L	S912L
3272-26A→G	E403D	G970D	L1324P	R117P	S945L
3849+10kbC→T	E588V	G1069R	L1335P	R170H	S977F
A120T	E822K	G1244E	L1480P	R258G	S1159F
A234D	E831X	G1249R	M152V	R334L	S1159P
A349V	F191V	G1349D	M265R	R334Q	S1251N
A445E	F311del	H939R	M952I	R347H	S1255P
A554E	F311L	H1054D	M952T	R347L	T338I
A1006E	F508C	H1375P	P5L	R347P	T1036N
A1067T	F508C; S1251N [†]	I148T	P67L	R352Q	T1053I
D110E	F508del*	I175V	P205S	R352W	V201M
D110H	F575Y	I336K	Q98R	R553Q	V232D
D192G	F1016S	I601F	Q237E	R668C	V562I
D443Y	F1052V	I618T	Q237H	R751L	V754M
D443Y;G576A; R668C [†]	F1074L	I807M	Q359R	R792G	V1153E
D579G	F1099L	I980K	Q1291R	R933G	V1240G
D614G	G126D	I1027T	R31L	R1066H	V1293G
D836Y	G178E	I1139V	R74Q	R1070Q	W1282R
D924N	G178R	I1269N	R74W	R1070W	Y109N
D979V	G194R	I1366N	R74W; D1270N [†]	R1162L	Y161S
D1152H	G194V	K1060T	R74W; V201M [†]	R1283M	Y1014C
D1270N	G314E	L15P	R74W;V201M; D1270N [†]	R1283S	Y1032C

CFTR Gene Mutations that Produce CFTR Protein and are Responsive to Symdeko					
<i>E56K</i>	<i>G551D</i>	<i>L206W</i>	<i>R75Q</i>	<i>S549N</i>	
<i>E60K</i>	<i>G551S</i>	<i>L320V</i>	<i>R117C</i>	<i>S549R</i>	
*A patient must have two copies of the <i>F508del</i> mutation or at least one copy of a responsive mutation presented in this table to be indicated. † Complex/compound mutations where a single allele of the CFTR gene has multiple mutations; these exist independent of the presence of mutations on the other allele.					

Appendix E: General Information

- The Cystic Fibrosis Foundation (CFF) Mutation Analysis Program (MAP) available here: <https://www.cff.org/medical-professionals/mutation-analysis-program>. The MAP is a free and confidential genetic testing program for people with a strongly suspected or confirmed diagnosis of CF.
- Regarding the diagnostic criteria for CF of “genetic testing confirming the presence of two disease-causing mutations in CFTR gene,” this is to ensure that whether heterozygous or homozygous, there are two disease-causing mutations in the CFTR gene, one from each parental allele.
- Most children can do spirometry by age 6, though some preschoolers are able to perform the test at a younger age. Some young children aren’t able to take a deep enough breath and blow out hard and long enough for spirometry. Forced oscillometry is another way to test lung function in young children. This test measures how easily air flows in the lungs (resistance and compliance) with the use of a machine.

V. Dosage and Administration

Indication	Dosing Regimen	Maximum Dose
CF	Pediatric patients age 6 to < 12 years weighing < 30 kg: one tablet (containing tezacaftor 50 mg/ivacaftor 75 mg) in the morning and one tablet (containing ivacaftor 75 mg) in the evening, approximately 12 hours apart with fat-containing food.	Age 6 to < 12 years weighing < 30 kg: Tezacaftor 50mg/ivacaftor 150 mg
	Adults and pediatric patients age 12 years and older or pediatric patients age 6 to < 12 years weighing 30 kg or more: one tablet (containing tezacaftor 100 mg/ivacaftor 150 mg) in the morning and one tablet (containing ivacaftor 150 mg) in the evening, approximately 12 hours apart with fat-containing food.	Age 6 to < 12 years weighing 30 kg or more and age ≥ 12 years:
	Reduce dose in patients with moderate and severe hepatic impairment.	
	Reduce dose when co-administered with drugs that are moderate or strong CYP3A inhibitors.	

VI. Product Availability

Tablets: co-packaged as tezacaftor 50 mg/ivacaftor 75 mg fixed dose combination tablets with ivacaftor 75 mg tablets OR tezacaftor 100 mg/ivacaftor 150 mg fixed dose combination tablets with ivacaftor 150 mg tablets

VII. References

1. Symdeko Prescribing Information. Boston, MA: Vertex Pharmaceuticals Incorporated; January 2025. Available at: https://pi.vrtx.com/files/uspi_tezacaftor_ivacaftor.pdf. Accessed April 14, 2025.
2. Farrell PM, White TB, Ren CL et al. Diagnosis of cystic fibrosis: Consensus guidelines from the Cystic Fibrosis Foundation. J Pediatr. 2017; 181S: S4-15.
3. Ren CL, Morgan RL, Oermann C, et al. Cystic Fibrosis Foundation pulmonary guidelines: Use of cystic fibrosis transmembrane conductance regulator modulator therapy in patients with cystic fibrosis. Ann Am Thorac Soc. 2018; 15(3): 271-280.
4. Alexander S, Alshafi K, Al-Yaghchi C, et al. Clinical Guidelines: Care of Children with Cystic Fibrosis. Royal Brompton and Harefield NHS. 2020;(8):22-23.
5. Kapnadak SG, Dimango E, Hadjiliadis D, et al. Cystic Fibrosis Foundation consensus guidelines for the care of individuals with advanced cystic fibrosis lung disease. J Cyst Fibros. 2020 May;19(3):344-354.
6. Mogayzel PJ Jr, Naureckas ET, Robinson KA, et al. Pulmonary Clinical Practice Guidelines Committee. Cystic fibrosis pulmonary guidelines. Chronic medications for maintenance of lung health. Am J Respir Crit Care Med. 2013 Apr 1;187(7):680-9.
7. Cystic Fibrosis Foundation: Clinical Care Guidelines. Available at: <https://www.cff.org/medical-professionals/clinical-care-guidelines>. Accessed April 17, 2025.

Reviews, Revisions, and Approvals	Date
Policy created	01/2019
1Q 2020 annual review: lowered age restriction to 6 yr and older; added the following criteria to initial approval: prescriber requirement of pulmonologist or cystic fibrosis specialist, requirement for baseline FEV1 unless unable to perform spirometry, requirement that Symdeko not be prescribed concurrently with other ivacaftor-containing CFTR modulator combination products; added the following to continued therapy criteria: not prescribed concurrently with other CFTR modulators; references reviewed and updated.	04/2020
1Q 2021 annual review: references reviewed and updated.	01/2021
1Q 2021 annual review: references reviewed and updated.	01/2022
1Q 2023 annual review: no significant changes; updated Appendix D and Appendix E; references reviewed and updated.	01/2023
3Q 2023 annual review: Updated criteria to include maximum dosing stratified by age and weight; references reviewed and updated.	07/2023
3Q 2024 annual review: no significant changes; updated Appendix D; references reviewed and updated.	07/2024

Reviews, Revisions, and Approvals	Date
3Q 2025 annual review: added Alyftrek to list of CFTR modulator concurrent exclusion criteria; references reviewed and updated.	07/2025