

Clinical Policy: Ivacaftor (Kalydeco)

Reference Number: CP.PHAR.210

Effective Date: 05.01.16

Last Review Date: 02.20

Line of Business: Commercial, HIM, Medicaid

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

Description

Ivacaftor (Kalydeco[®]) is a cystic fibrosis transmembrane conductance regulator (CFTR) potentiator.

FDA Approved Indication(s)

Kalydeco is indicated for the treatment of cystic fibrosis (CF) in patients age 6 months and older who have one mutation in the *CFTR* gene that is responsive to ivacaftor based on clinical and/or *in vitro* assay data.

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 health plans affiliated with Centene Corporation[®] that Kalydeco is **medically necessary** when the following criteria are met:

I. Initial Approval Criteria

A. Cystic Fibrosis (must meet all):

1. Diagnosis of CF confirmed by all of the following (a, b, c, and d):
 - a. Clinical symptoms consistent with CF in at least one organ system, or positive newborn screen or genetic testing for siblings of patients with CF;
 - b. Evidence of CFTR dysfunction confirmed by one of the following (i or ii) (*see Appendix D*):
 - i. Elevated sweat chloride ≥ 60 mmol/L;
 - ii. Genetic testing confirming the presence of two disease-causing mutations in *CFTR* gene, one from each parental allele;
 - c. Presence of one mutation in the *CFTR* gene responsive to ivacaftor based on clinical and/or *in vitro* assay data (*see Appendix E*);
 - d. Confirmation that a homozygous *F508del* mutation in the *CFTR* gene is not present;
2. Age ≥ 6 months;
3. Prescribed by or in consultation with a pulmonologist;

4. Chart notes indicate that pulmonary function tests, performed within the last 90 days, show a percent predicted forced expiratory volume in 1 second (ppFEV1) that is between 40-90%;
5. Kalydeco is not prescribed concurrently with other CFTR modulators (e.g., Orkambi, Symdeko, Trikafta);
6. Dose does not exceed one of the following (a, b, c, or d):
 - a. Age \geq 6 years: 300 mg (2 tablets) per day;
 - b. Age 6 months to < 6 years and weight 5 kg to < 7 kg: 50 mg (2 packets) per day;
 - c. Age 6 months to < 6 years and weight 7 kg to < 14 kg: 100 mg (2 packets) per day;
 - d. Age 6 months to < 6 years and weight \geq 14 kg: 150 mg (2 packets) 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): CP.CPA.09 for commercial, HIM.PHAR.21 for health insurance marketplace, and CP.PMN.53 for Medicaid.

II. Continued Therapy

A. Cystic Fibrosis (must meet all):

1. Currently receiving medication via Centene benefit or member has previously met initial approval criteria;
2. Member is responding positively to therapy as evidenced by a stabilization in ppFEV1 if baseline was \geq 70% or increase in ppFEV1 if baseline was < 70%;
3. Kalydeco is not prescribed concurrently with other CFTR modulators (e.g., Orkambi[®], Symdeko[®], Trikafta[™]);
4. If request is for a dose increase, new dose does not exceed one of the following (a, b, c, or d):
 - a. Age \geq 6 years: 300 mg (2 tablets) per day;
 - b. Age 6 months to < 6 years and weight 5 kg to < 7 kg: 50 mg (2 packets) per day;
 - c. Age 6 months to < 6 years and weight 7 kg to < 14 kg: 100 mg (2 packets) per day;
 - d. Age 6 months to < 6 years and weight \geq 14 kg: 150 mg (2 packets) per day.

Approval duration: 12 months

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

1. Currently receiving medication via Centene benefit and documentation supports positive response to therapy.
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): CP.CPA.09 for commercial, HIM.PHAR.21 for health insurance marketplace, and CP.PMN.53 for Medicaid.

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 policies – CP.CPA.09 for commercial, HIM.PHAR.21 for health insurance marketplace, and CP.PMN.53 for Medicaid or evidence of coverage documents.

IV. Appendices/General Information

Appendix A: Abbreviation/Acronym Key

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: General Information

- The Cystic Fibrosis Foundation’s Mutation Analysis Program (MAP; available here: <http://www.cfpaf.org/ResourceCenter/MutationAnalysisProgram>) offers free and confidential genetic testing to patients with a confirmed diagnosis of CF. It can take up to 60 days to receive genotyping results and additional time if further testing is needed.
- Kalydeco is not effective in patients with CF who are homozygous for the *F508del* mutation in the CFTR gene.
- It is recommended that transaminases (ALT and AST) be assessed prior to initiating Kalydeco, every 3 months during the first year of treatment, and annually thereafter. Dosing should be interrupted in patients with ALT or AST of greater than 5 times the upper limit of normal.
- Data from the study of CF patients with nine *CFTR* mutations did not support approval of the drug in patients with the G970R mutation. As of 2014, it is estimated that there are about 10 people worldwide who have this mutation, including two in the United States.
- 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.

Appendix E: CFTR Gene Mutations that are Responsive to Kalydeco

CFTR Gene Mutations that are Responsive to Kalydeco				
A1067T	E56K	G551S	R347H	S977F
A455E	F1052V	K1060T	R352Q	2789+5G→A (28)

CFTR Gene Mutations that are Responsive to Kalydeco				
D110E	F1074L	L206W	R74W	3272-26A→G (23)
D110H	G1069R	P67L	S1251N	3849+10kBc→T (40)
D115H	G1244E	R1070Q	S1255P	711+3A→G (2)
D1270N	G1349D	R1070W	S459R	E831X (1)
D579G	G178R	R117C	S549N	
E193K	G551D	R117H	S945L	

V. Dosage and Administration

Indication	Dosing Regimen	Maximum Dose
CF	<i>Adults and pediatric patients age 6 years and older: one 150 mg tablet PO every 12 hours with fat-containing food.</i>	Age ≥ 6 years: 300 mg/day
	<i>Pediatric patients 6 months to less than 6 years of age weighing 5 kg to less than 7 kg: one 25 mg packet mixed with 1 teaspoon (5 mL) of soft food or liquid and PO every 12 hours with fat containing food.</i>	Age 6 months to < 6 years and weight 5 kg to < 7 kg: 50 mg/day
	<i>Pediatric patients 6 months to less than 6 years of age weighing 7 kg to less than 14 kg: one 50 mg packet mixed with 1 teaspoon (5 mL) of soft food or liquid and PO every 12 hours with fat containing food.</i>	Age 6 months to < 6 years and weight 7 kg to < 14 kg: 100 mg/day
	<i>Pediatric patients 6 months to less than 6 years of age weighing 14 kg or greater: one 75 mg packet mixed with 1 teaspoon (5 mL) of soft food or liquid and PO every 12 hours with fat-containing food.</i>	Age 6 months to < 6 years and weight ≥ 14 kg: 150 mg/day

VI. Product Availability

- Tablets: 150 mg
- Unit-dose packets containing oral granules: 25 mg, 50 mg, 75 mg

VII. References

1. Kalydeco Prescribing Information. Boston, MA: Vertex Pharmaceuticals, Inc.; April 2019. Available at <https://www.kalydeco.com/>. Accessed October 28, 2019.
2. Mogayzel PJ, Naureckas ET, Robinson KA, et al. Cystic fibrosis pulmonary guidelines: Chronic medications for maintenance of lung health. *Am J Respir Crit Care Med.* 2013; 187(7): 680-689.
3. 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.
4. 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.

Reviews, Revisions, and Approvals	Date	P&T Approval Date
Policy split from CP.PHAR.54 CF Treatments. Evidence of a “significant improvement in FEV1” under continued approval is replaced with “Member continues to respond positively to Kalydeco therapy in one or more of the following areas: pulmonary function, quality of life, pulmonary exacerbations”. Not having increased LFTs is removed as a discontinuation reason. Continuation approval period is extended from 6 to 12 months.	05.16	05.16
Dosing criteria expanded by age. Efficacy statement edited to indicate general positive response to therapy.	05.17	05.17
Removed the requirement of specific gene mutations, G551D, G1244E, G1349D, G178R, G551S, R117H, S1251N, S1255P, S549N, or S549R, there are now over 20 gene mutation susceptible to Kalydeco. Appendix B added. Added maximum dose for pediatric patients.	06.17	11.17
1Q18 annual review: - Policies combined for Centene Medicaid, Marketplace, and Commercial lines of business. - No significant changes. - References reviewed and updated.	10.26.17	02.18
RT4: revised minimum age requirement from 2 years to 1 year and older; references reviewed and updated.	09.13.18	
1Q 2019 annual review: no significant changes; references reviewed and updated.	10.16.18	02.19
RT4: updated age limit to reflect newly FDA-approved indication for use in patients 6 months of age and older; added new dosage form of 25 mg oral granule packets; references reviewed and updated.	05.29.19	
1Q 2020 annual review: added the following criteria to initial approval: comprehensive diagnostic criteria (e.g., clinical symptoms in at least one organ, positive newborn screen, siblings genetic testing, and evidence of CFTR dysfunction) to confirm diagnosis of CF, prescriber requirement of pulmonologist, chart notes indicate that pulmonary function tests (ppFEV1 between 40-90%), not prescribed concurrently with other CFTR modulators; added the following to continued therapy criteria: positive response as evidenced by stabilization in ppFEV1 in lieu of an increase is acceptable if baseline was $\geq 70\%$, not prescribed concurrently with other CFTR modulators; added diagnosis clarification in Appendix D; changed approval durations of commercial from length of benefit to 6 months initial and 12 months continued; references reviewed and updated.	12.17.19	02.20

Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

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This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

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Note:

For Medicaid members, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

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