RATIONALE FOR INCLUSION IN PA PROGRAM

Background
Zelboraf is an orally-administered drug to treat patients with late-stage (metastatic) or unresectable (cannot be removed by surgery) melanoma, non-small cell lung cancer, hairy cell leukemia, Erdheim-Chester disease or Langerhans cell histiocytosis. Zelboraf is specifically indicated for the treatment of patients with melanoma whose tumors express a gene mutation called BRAF V600E. The drug has not been studied in patients whose melanoma tests negative for that mutation by an FDA approved diagnostic (1-4).

The cobas® 4800 BRAF V600 Mutation Test is a companion diagnostic that will help determine if a patient's melanoma cells have the BRAF V600E mutation. The BRAF protein is normally involved in regulating cell growth, but is mutated in about half of the patients with late-stage melanomas. Zelboraf is a BRAF inhibitor that is able to block the function of the V600E-mutated BRAF protein (1-4).

Regulatory Status
FDA-approved indication: Zelboraf is a kinase inhibitor indicated for the treatment of patients with unresectable or metastatic melanoma with BRAF V600E mutation as detected by an FDA-approved test (1).

Limitations of Use:
Zelboraf is not indicated for treatment of patients with wild-type BRAF melanoma (1).

Off-Label Uses: (2-4)
1. Hairy Cell Leukemia – prior therapy with a purine analog regimen
2. Non-Small Cell Lung Cancer (NSCLC) – with BRAF V600E mutation as detected by an FDA-approved test
3. Erdheim-Chester disease – with BRAF V600E mutation as detected by an FDA-approved test
4. Langerhans cell histiocytosis – with BRAF V600E mutation as detected by an FDA-approved test

QT prolongation has occurred and patients should receive baseline and regular electrocardiogram and electrolyte monitoring. Zelboraf is associated with concentration-dependent QTc interval prolongation. ECG and electrolytes, including potassium, magnesium, and calcium, should be monitored before treatment with Zelboraf and after
dose modification. Monitoring of ECGs should occur 15 days after treatment initiation and then monthly during the first 3 months of treatment, followed by every 3 months thereafter or more often as clinically indicated. Zelboraf is not recommended for patients with uncontrolled electrolyte abnormalities, long QT syndrome, or those taking medications that prolong the QT interval. Initiation of Zelboraf is not recommended in patients with QTc >500 ms (1).

Liver abnormalities have also occurred and liver enzymes and bilirubin should be assessed at baseline and throughout therapy. Patients should be monitored for serious ophthalmologic reactions such as uveitis, hypersensitivity reactions, and severe skin reactions, including Stevens-Johnson syndrome and topical epidermal necrolysis. Sun exposure should be avoided due to photosensitivity reactions with Zelboraf (1).

Cutaneous squamous cell carcinomas (cuSCC) have developed in Zelboraf-treated patients. Any lesions, cuSCC or new primary melanomas, should be excised and Zelboraf continued at the same dose. It is recommended that all patients receive a dermatologic evaluation prior to initiation of therapy and every two months while on therapy. Any suspicious skin lesions should be excised, sent for dermatopathologic evaluation and treated as per standard of care. Monitoring should be considered for 6 months following discontinuation of Zelboraf. Zelboraf can cause fetal harm. Female patients should be advised of the potential risk to the fetus and to use effective contraception (1).

Safety and efficacy in pediatric patients below the age of 18 have not been established (1).

**Summary**

Zelboraf is approved for patients 18 years of age or older for unresectable or metastatic melanoma with BRAF V600E mutation, in which the BRAF V600E mutation must be detectable by an FDA-approved test. Zelboraf is not indicated for patients with wild-type BRAF. Clinically adverse reactions may occur with Zelboraf therapy including prolongation of the QT interval, liver abnormalities, and cutaneous squamous cell
carcinomas. Patients should be assessed at baseline and throughout therapy to aid in the monitoring of these treatment related adverse reactions (1-4).

Prior authorization is required to ensure the safe, clinically appropriate and cost-effective use of Zelboraf (vemurafenib) while maintaining optimal therapeutic outcomes.

References