Title: *Users of Pegfilgrastim Less Than or Equal to 13 Years of age*

Amgen Protocol Number: 20180440

Study Sponsor:	Amgen, Inc. 1 Amgen Center Drive Thousand Oaks, CA Tel: 805-447-1000
Department:	Center for Observational Research
Therapeutic Area:	Oncology
Key Sponsor Contact:	PPD Senior Manager Bldg 34 Neighborhood 4B PPD
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Confidentiality Notice

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1. BACKGROUND AND RATIONALE

On 08 November 2018, FDA informed Amgen that they are evaluating pegfilgrastim Injection medication errors associated with doses less than 6 mg (0.6 mL) in pediatric patients weighing less than 45 kg.

The FDA requested the following information from Amgen:

1. *"An analysis of your U.S. and foreign postmarket serious and non-serious medication error/adverse event cases and complaints associated with Pegfilgrastim Injection and suspected wrong dose errors (including but not limited to overdose, underdose, dose omission, and dose confusion) involving the preparation and administration of doses less than 6 mg (0.6 mL). You should limit your analysis to cases and complaints received in the last 5 years. Your analysis should include:*
2. *Describe the trends and use of Pegfilgrastim Injection in U.S. pediatric patients weighing less than 45 kg (using ≤ 13 years of age as a surrogate for weight) in the last 3 years.*
3. *A description of your plans to prevent wrong dose errors in patients requiring Pegfilgrastim doses less than 6 mg (0.6 mL). It would be helpful if you could include discussion on any recommendations or suggestions made by a reporter such as including a dosage form suitable for pediatric doses and addition of syringe markings to measure doses less than 6 mg (0.6 mL)."*

CfOR was alerted on 6th Dec to provide description of the trends and use of pegfilgrastim injection in pediatric patients weighing less than 45 kg for the last 3 years in the US (ie, question #2). To align with the question #1 that requested information on product complaints in the last 5 years, the team decided to provide last 5 year data for question #2 instead of the last 3 years requested by the FDA. This study is to answer question #2 above.

2. OBJECTIVES

To answer the questions #2 above this study will:

1. Describe the users of pegfilgrastim between 01/01/2013 and 01/01/2017, stratified by age ≤ 13 y vs. > 13 y and calendar year.

3. STUDY POPULATION/SAMPLE SIZE/STATISTICAL ANALYSES PLANS

The Truven MarketScan® database[1] captures person-specific clinical utilization, expenditures, and enrollment across inpatient, outpatient, prescription drug, and carve-out services from a selection of large employers, health plans, and government and public organizations. The MarketScan® databases link paid claims and encounter data to detailed patient information across sites and types of providers, and over time. The annual medical databases include private sector health data from approximately 100 payers. Our study population was extracted from both "Commercial Claims and Encounters (Commercial) Database" and the "Medicare Supplemental and Coordination of Benefits (Medicare) Database". The MarketScan Commercial Database contains the inpatient, outpatient, and outpatient prescription drug experience of employees and their dependents, covered under a variety of fee-for-service and managed care health plans, including exclusive provider organizations, PPOs, POS plans, indemnity plans, and health maintenance organizations (HMOs).

Users of pegfilgrastim will be identified as patients who received their first administration of pegfilgrastim between 01 Jan 2013 and 31 Dec 2017 without any prior use of pegfilgrastim. Users of pegfilgrastim will be identified in the database as patients with at least one claim with HCPCS code ("J2505", "C9119", "S0135") or at least once claim with NDC code ("54868522900", "55513019001", "55513019201") for pegfilgrastim. There will be no continuous enrollment required for users of pegfilgrastim. The age of users of pegfilgrastim will be defined as the difference between year of first pegfilgrastim administration and year of birth (date of birth is not available in the database). The results will be stratified by age at first administration (≤ 13 y vs. > 13 y) and reported by 12-month intervals.

Table shell:

Number of users of pegfilgrastim stratified by age at first administration

	Age ≤ 13 years		Age > 13 years	Total
12-month intervals	**n**	**%**	**n**	**n**
1 Jan 2013 - 31 Dec 2013	n	%	n	n
1 Jan 2014 - 31 Dec 2014	n	%	n	n
1 Jan 2015 - 31 Dec 2015	n	%	n	n
1 Jan 2016 - 31 Dec 2016	n	%	n	n
1 Jan 2017 - 31 Dec 2017	n	%	n	n
Total	n	%	n	n

The Truven Marketscan database includes patients enrolled in Medicare Supplemental but does not include traditional Medicare enrollees. Thus, proportion of users of pegfilgrastim ≤ 13 y of age may be an overestimation of the national proportion of users of pegfilgrastim ≤ 13 y of age.

4. COLLECTION, RECORDING, AND REPORTING OF SAFETY INFORMATION AND PRODUCT COMPLAINTS

4.1 Safety Collection and Recording Requirements

This study is analyzing secondary data from Truven Marketscan commercial claims database and no safety data will be collected or reported.

5. SUBJECT CONFIDENTIALITY

This study will comply with all applicable laws regarding subject privacy. No direct subject contact or collection of additional subject data will occur. Study results will be in tabular form and aggregate analyses that omits subject identification. Any publications and reports will not include subject identifiers.

6. PUBLICATION INTENT

The results of this study will not be published separate from submission to relevant regulatory authorities.

7. REFERENCES

1. Cappell KA, Shreay S, Cao Z, Varker HV, Paoli CJ, Gitlin M. Red blood cell (RBC) transfusion rates among US chronic dialysis patients during changes to Medicare end-stage renal disease (ESRD) reimbursement systems and erythropoiesis stimulating agent (ESA) labels. *BMC Nephrology.* 2014;15:116.