Excessive anticoagulation with Warfarin
(Institute for Safe Medication Practices measure)

This measure is part of a set aiming to increase medication safety and avoid adverse drug events. Adverse drug events are defined as any injuries resulting from medication use, including physical or mental harm, or loss of function. This measure is the proportion of inpatients who had excessive anticoagulation with warfarin.

**Name and date of specifications used:** ADE-12, Institute for Safe Medication Practices reported by hospitals to the Oregon Association of Hospitals and Health Systems (OAHHS) as part of the CMS Partnership for Patients program.

**URL of Specifications:** No formal specifications are available.

**Measure Type:**

**Data Source:** Hospitals will track these data internally (through electronic health records, chart abstractions, or another manual process). OAHHS will collect these data from DRG hospitals via its online reporting tool and report to OHA.

**Measurement Period:**
- Year One: October 1, 2013 – September 30, 2014 (baseline)
- Year Two: October 1, 2014 – September 30, 2015 (performance year)

**Benchmark:** 5% or below

The equation used is \( \frac{N}{D} \times 100 \) and performance is reported as a percentage. Hospitals must submit numerators and denominators as detailed below.

**Improvement from Baseline Target:** Minnesota method with 1 percentage point floor

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1 Additional information on surveillance of adverse drug events can be found here: [http://www.health.gov/hai/ade.asp#final](http://www.health.gov/hai/ade.asp#final).
2 OHA reserves the right to contact hospitals directly or through OAHHS with additional questions about data submitted as part of the program. Hospitals must be able to provide documentation of data submitted should it be requested.
3 Information on improvement target calculations can be found in the ‘Hospital Improvement Target Brief’, here: [http://www.oregon.gov/oha/Pages/Hospital-Baseline-Data.aspx](http://www.oregon.gov/oha/Pages/Hospital-Baseline-Data.aspx).
Note that data are tracked on a monthly basis, but at the end of the program monthly data will be aggregated across the 12 months of the performance year to assess performance against benchmark. Guidance on how data will be aggregated for the baseline year are will be available here: [http://www.oregon.gov/oha/Pages/Hospital-Baseline-Data.aspx](http://www.oregon.gov/oha/Pages/Hospital-Baseline-Data.aspx).

**Data elements required denominator:** Distinct count of inpatient admissions in which the patient was administered Warfarin during the tracked month. Count is distinct per person per admission, and should be reported in the month in which the patient is discharged. See ‘Additional Information’ below for more detail. Inpatients (admitted patients) receiving warfarin anticoagulation therapy during the tracked month.

**Required exclusions for denominator:** ED patients.

**Deviations from cited specifications for denominator:** None.

**Data elements required numerator:** Inpatients (admitted patients) experiencing excessive anticoagulation with warfarin (e.g. INR > 6) during the tracked month. The numerator is a distinct count of admissions in which patients who have a high INR during their admission after receiving Warfarin; therefore, one patient with multiple INRs above the threshold during an admission is counted only once in the numerator. Hospitals are to report only those high INRs that occur after the first dose of warfarin given by the hospital.

**Required exclusions for numerator:** None.

**Deviations from cited specifications for numerator:** ‘Excessive anticoagulation’ defined as INR > 6 (cited specifications state that ‘excessive’ is organizationally defined).

**Additional Denominator and Numerator Clarification:**

The denominator for this measure is a distinct count of admissions per patient in which Warfarin is administered (i.e., a patient is counted once per admission in which Warfarin is administered). The numerator is also a distinct count per admission per patient (after a patient receives Warfarin): A patient is counted in the numerator once if he or she receives Warfarin at
any point in that admission and subsequently his/her INR is greater than 6.

For example, say a patient is admitted from June 1-20 and receives Warfarin three times, and during this admission has an INR > 6 two times after the Warfarin was administered. For the month of June she would be counted once in the denominator (because she received Warfarin during this admission), and only once in the numerator (because the elevated INR is only counted once per admission).

Say she is again admitted from August 28 – September 5 and receives Warfarin once, but her INR never exceeds the threshold. In this case, she is again counted in the denominator for September (since she received Warfarin during this admission and was discharged in September), but is not counted in the numerator (as her INR stayed at a safe level).

However, over the course of the measurement year this patient would be counted twice in the denominator (as she received Warfarin in two separate admissions), and only once in the numerator (as in only one admission did her INR exceed the threshold).

These specifications were updated on 3 December 2014 to include clarification on the numerator and denominator (to make clear that the count is per patient per admission. In addition, it was also noted that patients should be reported in the month in which they are discharged.