OPERATIONAL DEFINITION
MEASUREMENT: Percent of Patients Delayed

I. Description and Rationale

This measure answers the question:
How efficiently is the flow through the ED, PICU, and PACU to beds on inpatient units?

This is a composite measure of (1) ED patients waiting 1 hour or more for admission, (2) patients waiting 2 hours or more for a transfer from the PICU to a unit, and (3) patients waiting 20 minutes or more in the PACU for transfer to a unit. It measures the percent of patients who were delayed from either of these units to an inpatient bed. A delay is defined as:

Flow	Delay	Time Measured from
ED to Inpatient Bed	1 hour or Greater	Care completed in the ED until patient arrives on the unit
PICU to Inpatient Bed	2 hours or Greater	Time the transfer order is written until the patient arrives on the unit
PACU to Inpatient Bed	20 Minutes or Greater	Time discharge criteria are met until the time the patient actually leaves the PACU

II. Population Definition

Population includes: 1) All patients who transfer from the PICU or the CICU to an inpatient bed, 2) patients with a PACU stay who are admitted to an inpatient bed, and 3) ED patients who are admitted to an inpatient bed.

III. Data Source(s)

Flow	Data Source
ED to Inpatient Bed	EPIC
PICU to Inpatient Bed	EPIC
PACU to Inpatient Bed	EPIC

IV. Sampling and Data Collection Plan

Flow	Data Source
ED to Inpatient Bed	All ED patients that are transferred to an inpatient unit
PICU to Inpatient Bed	All patients who are transferred from B5CC or B6HI to an inpatient unit are collected out of EPIC system. Prior to July, 2010, a random number generator is run to randomly pull 40 of these transfers. These patients are manually looked up in ICIS/EPIC to get their transfer order information. After July 2010, all data is being pulled from EPIC.
PACU to Inpatient Bed	All PACU patients that are transferred to an inpatient unit

V. Calculation

Prior to July 2010

Weighted Percent of patients delayed= $$\frac{N_1 + N_2 + \frac{N_3}{D_{3Sample}}\left(D_{3Total}\right)}{D_1 + D_2 + D_{3Total}}$$

where:
N_1 = Number of patients who are admitted through the ED and wait one hour or more from care completed in the ED until arriving on the unit
D_1 = Total number of patients who are admitted through the ED.
N_2 = Number of patients waiting 20 minutes or more in the PACU for an inpatient bed.
D_2 = Number of total cases (excluding SDS) entering the PACU.
N_3 = Number of patient transfers from the PICU to an inpatient bed who wait 2 hours or more from the time the transfer order is written until the patient arrives in their general care inpatient unit.
$D_{3Sample}$ = Number of patients in Random Sample of patient transfers from the PICU to an inpatient bed
D_{3Total} = Total number of patient transfers from the PICU to an inpatient bed

AfterJuly 2010

Weighted Percent of patients delayed= $$\frac{N_1 + N_2 + N_3}{D_1 + D_2 + D_3}$$

where:
N_1 = Number of patients who are admitted through the ED and wait one hour or more from care completed in the ED until arriving on the unit
D_1 = Total number of patients who are admitted through the ED.
N_2 = Number of patients waiting 20 minutes or more in the PACU for an inpatient bed.
D_2 = Number of total cases (excluding SDS) entering the PACU.
N_3 = Number of patient transfers from the PICU or CICU to an inpatient bed who wait 2 hours or more from the time the transfer order is written until the patient arrives in their general care inpatient unit.
D_3 = Total number of patient transfers from the PICU or CICU to an inpatient bed

VI. Analysis Plan and Frequency of Reporting

Data is pulled from daily, with a 2 day lag. Reports are pulled together monthly & quarterly or on an ad-hoc basis.

VII. Reporting Venues

- Results are reported on the CCHMC Hospital Scorecard under "Health Care Delivery"
- Results are posted to the "System Level Measures for Healthcare Delivery" quarterly

- Monthly results are posted to the Centerlink, Patient-Centered Flow Site and on the Patient-Centered Flow Strategic Improvement Priority's monthly report.

VIII. Limitations

- (Prior to July 2010) The measure of patients delayed from the PICU to an inpatient bed is subject to sampling error.
- The ED and PICU flow measure defines arrival on the unit as the stop time while the PACU measure defines leaving the PACU as the stop time (a surrogate for arrival to the unit).
- PACU delays represent delays in the PACU as well as delays on the floor. For example, they could be delayed waiting on orders to be written. In other words, the delay doesn't just represent floor or transportation delays.

VIIII. Experts/Resources

X. Revision History

Version	Primary Author(s)	Description of Version	Date Completed
Draft	AMA		12/30/2005
Final	AMA	• Added limitations	01/26/2006
Revision 1	AMA	Sampling Plan for PICU delay measure	6/30/2006
Revision 2	VMB		10/13/2009
Revision 3	AMA	• Data will now include the CICU • Data for ICU delays includes 100% of data from EPIC • Changed/Update Reporting Venues section	7/16/2010
Revision 4	AMA	• Reworded the PACU delay definition to include 20 minutes as a failure. Measure has not changed. There was an error in the wording of this definition only.	8/22/12