TECHNICAL NOTES:
Central Line-Associated Bloodstream Infections and Central Line Insertion Practices in California Hospitals, 2015

Introduction

Central line-associated bloodstream infection (CLABSI) rates are important markers for patient safety in acute care hospitals. More than half of CLABSI may be preventable if hospitals adhered to all recommended central line insertion practices (CLIP), which together are called a bundle, for each central line insertion. The CLIP bundle includes eight care practices, specifically, performing hand hygiene, using a recommended skin preparation agent, allowing the skin preparation agent to dry, and wearing five maximal sterile barriers (cap, mask, gown, gloves, and drape).

Health and Safety Code 1288.55(a)(2) requires California hospitals to perform surveillance and report CLABSI associated with inpatient treatment to the California Department of Public Health (CDPH). These *Technical Notes* describe the definitions, methods, and limitations CLABSI and CLIP data for the reporting period, January 1, 2015, to December 31, 2015. California hospitals submitted CLABSI data to the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN). CDPH accessed the NHSN data to produce this report.

NHSN is using HAI data reported by all U.S. hospitals in 2015 to establish new risk adjustment models and new national baselines against which future HAI prevention progress will be measured. Next year's annual report will show how California hospitals compared with the new 2015 national baselines and demonstrate if HAI prevention progress was made in 2016.

Methods

Reporting hospitals

In 2015, CDPH received data from 393 licensed general acute care hospitals representing 416 physical campuses that operated for the full 12 months of the reporting period. Of these, 21 hospitals reported combined CLABSI data for multiple hospital campuses under a single hospital license, and 372 hospitals reported data separately for each campus (Table A).

Table A. Reporting by General Acute Care Hospitals, 2015

	Reporting Hospitals	**Number of Campuses**
Hospitals that reported separately for each campus	372	372
Hospitals that reported multiple campuses together	21	44
Total	**393**	**416**

Data sources

California hospitals entered CLABSI and CLIP data into the NHSN online reporting system. For each NHSN-defined unit type and month, hospitals reported CLABSI, central line days, patient days, and CLIP data following NHSN surveillance definitions and reporting protocols [1-5]. Hospitals were responsible for providing to CDPH electronic permission to access NHSN data in inpatient areas where CLABSI and CLIP surveillance were conducted. On March 1, 2016, we downloaded the data sets used to produce this 2015 report.

Missing data

CDPH excluded from analyses the CLABSI data from hospitals that reported zero central line days, less than 12 months of data, or inpatient units defined as mixed acuity units (Table 47). Mixed acuity units provide care for a broad range of patients with various conditions and cannot be categorized by a single type of care provided. Therefore, mixed acuity units cannot be risk adjusted. Hospitals that reported only mixed acuity units were excluded from our analyses.

Definitions

CDPH required hospitals to comply with NHSN surveillance and reporting protocols, including NHSN standardized definitions [3]. Key definitions are:

- A **central line** is a catheter inserted into a vein or artery that terminates at or close to the heart or in one of the great vessels. Central lines may be used for infusing medications and nutrients, withdrawing blood, or monitoring blood pressure and blood flow.

- A **central line-associated bloodstream infection (CLABSI)** is a laboratory-confirmed bloodstream infection in a patient with a central line at the time of (or in the two days prior to) the onset of symptoms, and the bloodstream infection is not related to an infection from another body site.

- **Inpatient days** are the cumulative numbers of patients hospitalized each day in each inpatient ward/unit during the reporting period.

- **Central line days** are the cumulative numbers of hospitalized patients with a central line in place each day in each inpatient ward/unit during the reporting period.

- A **permanent central line** is a central line placed into an incision and threaded through a tunnel of tissue until it enters the appropriate vein or artery (also referred to as a tunneled catheter or graft).

- A **temporary central line** is a non-tunneled central line.

- A **major teaching hospital** is a hospital that is an important part of the teaching program of a medical school and the majority of medical students rotate through multiple clinical services.

- A **long-term acute care (LTAC)** hospital is defined by the Centers for Medicare & Medicaid Services (CMS) as a licensed general acute care hospital providing care for patients with medically complex conditions requiring an average length of stay greater than 25 days [6].

- A **rehabilitation hospital** is a hospital with inpatient wards for the evaluation and restoration of function for patients who have lost function due to acute or chronic pain, musculoskeletal problems, stroke, or catastrophic events resulting in complete or partial paralysis.

CDPH defined patient care locations

NHSN defines more than 60 inpatient acute care hospital unit and ward types [1]. CDPH consolidated NHSN-defined unit/ward types into 41 patient care locations [Appendix A], as recommended by a CDPH-convened metrics work group in 2011. Each patient care location was considered to be providing similar types of care and having similar CLABSI risks based on 2009 U.S. CLABSI rates [7]. CDPH further defined hospital patient care locations in four major groupings based on the care level: critical care (excluding neonates), neonatal critical care, general care (non-critical inpatient care), and special care (bone marrow transplant, oncology (including hematology), and solid organ transplant). We presented 2015 CLABSI data by these CDPH-defined patient care locations and groupings.

CDPH method for risk adjustment: stratified rates by patient care locations

California Health and Safety Code section 1288.55 (c)(1) requires CDPH to publicly disclose information on hospital-specific CLABSI rates following a risk adjustment process consistent with NHSN methodology. Sicker patients are more likely to have a central line and to be at increased risk for CLABSI. Hospital unit types are a proxy measure for patient severity of illness and the type of care provided. CLABSI rates vary by hospital unit type [7]. To make fair comparisons across hospitals, CDPH presented rates in a way that accounted for differences in the severity of illness of patients across hospitals. This accounting did not control for all potential confounding variables, but provided an appropriate level of risk adjustment given the available information [8].

CDPH used a risk adjustment strategy that is both consistent with NHSN methodology and provides the most straightforward, comprehensive, and accurate means of comparing CLABSI rates within and between hospitals. In 2011, the metrics work group and HAI Advisory Committee recommended that CDPH report hospital-specific CLABSI rates stratified (classified) by patient care locations [9, 10].

Quality assurance and control

Hospital personnel were responsible for the quality and completeness of their reported CLABSI data. CDPH helped hospitals identify systematic data errors by reviewing each hospital's NHSN data and notifying hospitals of discrepancies. In September, October, November, and December 2015, and February and March 2016, CDPH distributed quality assurance and control reports that identified missing, incomplete, or potentially aberrant data. In February 2016, we also notified hospitals with fewer than 12 months of data or missing a complete NHSN annual hospital survey. We encouraged hospitals to conduct a final review of their data and complete all changes and corrections before the final data download on March 1, 2016. Hospitals were responsible for making data corrections in NHSN.

Validation

In 2014, CDPH validation efforts helped hospitals assess and improve case-finding and evaluate completeness in identifying and reporting CLABSI. CDPH staff helped hospitals identify gaps in their routine surveillance practices that resulted in missed CLABSI. Hospitals found to have low case-finding, defined as missing one or more CLABSI during a single quarter, were visited in 2015 for re-validation. CDPH staff conducted 63 onsite re-validations in 2015 in hospitals that missed CLABSI in 2014 validation. Of the 63 hospitals re-validated in 2015, 24 were again missing at least one CLABSI in 2015. In 2016, CDPH is continuing to follow-up with these 24 hospitals and their leadership representatives to review surveillance practices, case-finding processes, and reporting issues.

Data presentation and statistical analyses

We reported the numbers of observed CLABSI and central line days, unadjusted CLABSI rates per 1000 central line days, and 95% confidence intervals (assuming an exact Poisson distribution [11]), grouped by patient care locations. Confidence intervals provided a measure of the precision of each stratified rate [12]. Because of instability of rates with small sample sizes, we did not present rates or 95% confidence intervals for patient care locations with fewer than 50 reported central line days. We did not compare CLABSI rates for any patient care location with fewer than 10 reporting hospitals.

We reported CLABSI rates separately for permanent central lines and temporary central lines in special care locations because the CLABSI risk differs by central line type. Both types are frequently used in special care locations. We reported CLABSI rates in neonatal critical care locations for each of five infant birth weight categories, less than or equal to 750 grams, 751-1000 grams, 1001-1500 grams, 1501-2500 grams, and more than 2500 grams. We also reported each hospital's number of predicted CLABSI, standardized infection ratio (SIR), and 95% confidence intervals.

CDPH reported CLABSI measures in six ways. We presented:

1. Hospital-specific CLABSI SIRs and 95% confidence intervals for general acute care hospitals other than LTAC and rehabilitation acute care hospitals (Table 1);

2. Hospital-specific CLABSI SIRs and 95% confidence intervals for LTAC hospitals (Table 2);

3. The percentage change in 2015 California average rates with the average 2014 CLABSI rates (Table 3);

4. 2015 statewide average CLABSI rates for each CDPH-defined patient care location. The California average rate is the patient care location-specific pooled mean rate (i.e., the total number of CLABSI divided by the total number of central line days from hospitals reporting that patient care location). California average CLABSI rates are the peer-based standards against which individual hospital location CLABSI rates are compared. For patient care locations with at least 10 reporting hospitals, we presented the distributions of hospital-specific CLABSI rates as key percentiles. Key percentiles provide a measure of the inter-hospital variability in CLABSI rates for each patient care location (Table 4);

5. An alphabetical list of California hospitals, patient care locations, and symbols identifying those hospital-specific locations where 2015 CLABSI rates were statistically higher (H), lower (L), or no different (N) from state average rates (Table 5). Similar to consumer product evaluations, this table provided a visual summary of all hospitals listed in one ‘snapshot;’ and

6. Detailed hospital-specific 2015 CLABSI information for each CDPH-defined patient care location. Information includes an alphabetical list of California hospitals, numbers of CLABSI, central line days, and patient days, CLABSI rates and their 95% confidence intervals, and symbols indicating patient care locations that were statistically higher, lower, or no different from statewide average rates (Tables 6 - 46).

We also presented the hospitals excluded from CLABSI analyses because they did not use central lines during the reporting period, reported less than 12 months of data for all locations, or included ‘mixed acuity’ patient care locations that could not be risk adjusted (Table 47).

CDPH presented CLIP data as the percentage of observations that reported adherence to all eight components of the CLIP bundle, calculated as the total number of adherent insertions divided by the total number of CLIP observations, in each critical care unit. We presented a single overall CLIP percentage for NICU; we did not stratify NICU CLIP data by birth weight categories. We allowed povidone iodine, alcohol, chlorhexidine gluconate (CHG), or other specified skin prep agents to meet the CLIP criteria for appropriate skin prep for infants less than 60 days old. Among special care area locations, CLIP data were presented only for oncology medical/surgical critical care units.

Rate comparisons

A. Hospital-specific rates compared to California average rates using patient care location-specific confidence intervals

A confidence interval is a range of values that quantifies the random variation of a rate. The wider the interval, the greater the uncertainty associated with the rate. The width of the confidence interval is in part related to the reported numbers of central line days. Smaller facilities with fewer central line days have less precision associated with their rates and wider confidence intervals. Confidence intervals provide no information about systematic errors or bias.

We used confidence intervals to compare hospital-specific rates with the state average rates for each patient care location. This approach assumed that the statewide average is the 'true value' for the rate and the comparison was equivalent to performing an exact single-sample test. A hospital-specific CLABSI rate was statistically higher than the California average rate if the hospital's entire 95% confidence interval was higher than the average, statistically lower than the California average rate if the hospital's entire confidence interval was lower than the average rate, and statistically not different from the California average rate if the hospital's confidence interval contained the average rate.

A hospital was more likely to have statistically higher or lower CLABSI rates if the hospital-specific rates were extreme (much higher or lower than the California average CLABSI rate). A hospital was also more likely to be statistically higher or lower than the average rate if the hospital had a large number of central line days, because the rate was more stable and the confidence interval was not as wide. Two hospitals with the same rate can have different statistical testing conclusions solely as a result of the number of central line days reported. Any assessment of rates must consider the degree of precision in the rate as reflected by the width of the confidence interval. Additionally, a report of no CLABSI may not be statistically different from the statewide average if the rate is based on few central line days. This is especially true as the statewide average becomes lower; it is difficult to detect a statistical difference between a low average CLABSI rate and a CLABSI rate of zero.

B. Comparisons to the national average rate using a standardized infection ratio (SIR)

The NHSN SIR compared the reported number of CLABSI with the predicted (expected) number based on the national baseline data and adjusted for patient care locations [13-14]. Adjusting for the variety of patient care locations provided for a more fair comparison of hospitals' reported infections with the predicted number of infections. The NHSN system calculated an SIR only when the predicted number of CLABSI was greater than 1.0. In 2015, CDPH also calculated and reported SIR when the predicted number of infections was less than 1.0, but greater than or equal to 0.2. This change allowed more hospitals (e.g., small and rural hospitals) to compare their infection incidence to the national baselines. CDPH reported CLABSI results (i.e. incidence higher than or the same as predicted) for more California hospitals in 2015. In the past, these hospital results would have been missing, with an indication

that there were “too few data to calculate.” National CLABSI baselines for general acute care hospitals were calculated from data reported to NHSN from 2006-2008. National CLABSI baselines for LTAC hospitals were calculated from data reported to NHSN in 2013.

If an SIR was generated for a hospital, the calculated 95% confidence interval determined if the observed number of infections was significantly different from predicted. If the confidence interval included the value of 1.0, the SIR indicated that the observed number of infections was not considered different from the predicted number of infections. Based on the 95% confidence interval, we labeled each SIR as indicating “no difference” between the numbers of observed and predicted infections, “higher” because more infections were observed than predicted, or “lower” because fewer infections were observed than predicted.

C. Comparisons of California average rates by patient care locations over time

CDPH monitors California average rate trends over time to provide important information about progress toward CLABSI prevention and control. CLABSI prevention success over time is evidenced by hospitals reporting sustained low rates over time or sustained and significant rate reductions [15]. CLABSI prevention and control challenges are evidenced by hospitals with consistently high rates over time or rate reductions that were not sustained (such as a one-time rate decrease followed by a rate increase the next year) [15]. CLABSI rates should be interpreted with some caution. A hospital with consistently high rates may be systematically different than the other hospitals included in the state average with which it is being compared. Statistical testing of rate trends has important limitations, including difficulties in detecting statistically significant differences between hospitals as CLABSI rates become lower.

Limitations and Context

CDPH recommends caution if comparing these 2015 CLABSI data with previous years’ data, because 2015 data were affected by surveillance improvements and changes. NHSN implemented several data classification and reporting changes that affected the 2015 CLABSI data. For example, yeast (e.g., Candida species) can cause bloodstream infections, often associated with extended use of central lines. In 2015, NHSN reporting rules changed regarding yeast identified in blood cultures. Yeast in the blood of a patient with a central line could no longer be attributed to a urinary tract infection or pneumonia (for most hospitalized patients) as in past years. NHSN instructed hospitals to report a CLABSI for a patient with a yeast bloodstream infection and a central line. This resulted in more CLABSI reported in 2015 than previous years.

CLABSI rates and SIR were affected by clinical and infection control practices related to central line insertion and maintenance practices, patient risk factors, and surveillance methods. We reported hospital-specific CLABSI SIR and CLABSI rates stratified by patient care location to make the data more comparable. These methods cannot control for all individual patient factors that can affected CLABSI rates.

Readers should also consider the overall context of these SIR and rates. A low CLABSI rate or SIR may reflect greater adherence to care practices known to prevent infections, or may reflect less effective surveillance methods that detected fewer infections, including failure to appropriately apply standardized surveillance definitions and protocols. A high SIR or rate may reflect failure to consistently implement all recommended infection prevention practices, or more consistent, effective infection surveillance, including complete reviews of laboratory and clinical data, and accurate application of standardized surveillance definitions and protocols. Finally, readers should consider comparisons between two time periods cautiously, as more time may be needed to determine if changes will be sustained, and therefore, are more meaningful.

References

1. CDC, NHSN. Unit Defined Location Labels: Master CDC Locations and Descriptions. [Accessed July 23, 2015]; http://www.cdc.gov/nhsn/PDFs/master-locations-descriptions.pdf

2. CDC, NHSN. Surveillance for Central Line-associated Bloodstream Infections (CLABSI). [Accessed July 23, 2015]; http://www.cdc.gov/nhsn/acute-care-hospital/clabsi

3. Centers for Disease Control and Prevention. National Healthcare Safety Network. Key Terms. [Accessed 22 June 2015]; http://www.cdc.gov/nhsn/PDFs/pscManual/16pscKeyTerms_current.pdf

4. CDC, NHSN. Surveillance for Central Line Insertion Practices Adherence. [Accessed July 23, 2015]; http://www.cdc.gov/nhsn/acute-care-hospital/clip/index.html

5. Horan, TC, Andrus M and Dudeck MA. CDC/NHSN surveillance definitions of health care-associated infection and criteria for specific types of infections in the acute care setting. Am J Infect Control 2008; 36:309-32

6. Medicare Payment Advisory Commission. Report to the Congress: Medicare Payment Policy. Chapter 11 Long-term care hospital services 2015. [Accessed June 12, 2015]; http://medpac.gov/documents/reports/chapter-11-long-term-care-hospital-services-(march-2015-report).pdf?sfvrsn=0

7. CDC, NHSN. National Healthcare Safety Network (NHSN) Report, Data summary for 2009, device-associated module. [Accessed July 23, 2015]; http://www.cdc.gov/nhsn/PDFs/dataStat/2010NHSNReport.pdf

8. McKibben L, Horan TC, Tokars JI, et al. Guidance on public reporting of healthcare-associated infections: recommendation of the Healthcare Infection Control Practices Advisory Committee. Infect Control Hosp Epidemiol. 2005; 26:580-7.

9. California Department of Public Health Healthcare Associated Infections Metrics Work Group recommendations on CLABSI reporting. [Accessed July 23, 2015];

http://www.cdph.ca.gov/programs/hai/Documents/CLABSI%20-%20Metrics%20Group%20Recommendations.pdf

10. California Department of Public Health Healthcare Associated Infections Advisory Committee, Meeting summary 06-09-2011. [Accessed July 23, 2015]; http://www.cdph.ca.gov/programs/hai/Pages/HAIAdvisoryCommitteeMeeting--June9,2011.aspx

11. Daly, L., Simple SAS macros for the calculation of exact binomial and Poisson confidence limits. Comput Biol Med, 1992. 22(5): p. 351-61.

12. Association of Public Health Observatories: Technical Briefing 3. Commonly used public health statistics and their confidence intervals. [Accessed July 23, 2015]; http://www.apho.org.uk/resource/item.aspx?RID=48457

13. CDC, NHSN. National and State Healthcare-Associated Infections Standardized Infection Ratio Report. Using Data Reported to the National Healthcare Safety Network. [Accessed July 27, 2015]; http://www.cdc.gov/HAI/pdfs/SIR/national-SIR-Report_03_29_2012.pdf

14. CDC, NHSN. NHSN e-news: SIR Special Edition. Updated December 10, 2010. [Accessed on July 27, 2015]; http://www.cdc.gov/nhsn/PDFs/Newsletters/NHSN_NL_OCT_2010SE_final.pdf

15. Spiegelhalter DJ. Problems in assessing rates of infections with methicillin resistant *Staphylococcus aureus*. BMJ 2005;331:1013-5.

APPENDIX A
CDPH DEFINED PATIENT CARE LOCATIONS

Patient care settings within hospitals are organized into units that generally reflect the severity of illness and types of care provided, and are a proxy (substitute) measure for severity of illness among patients. NHSN defines more than 60 unit types for inpatient acute care hospital settings. California hospitals self-identified more than 50 different NHSN-defined unit types.

As recommended by the CDPH Metrics Work Group and HAI Advisory Committee, CDPH enrolled NHSN-defined unit types into **21 categories of patient care locations.** The CDPH Metrics Work Group judged these categories to provide similar types of care, have similar risks of CLABSI based on published 2009 U.S. CLABSI rates, and to be appropriate for consolidation. In 2014 and 2015, the 21 categories of patient care locations were further subdivided into 41 **distinct patient care locations**. In 2013 there were 21 categories of patient care locations and divided into 37 distinct patient care locations.

This Appendix identifies the 21 categories of patient care locations, **the 41 distinct patient care locations (based on important subdivisions) used to present data in this release**, and lists NHSN-defined units included within each.

Critical care areas include nursing care locations that provide intensive observation, diagnosis, and therapeutic procedures for patients who are critically ill. These areas exclude step-down, intermediate, or telemetry care areas. The following are the CDPH-defined patient care locations associated with critical care areas:

- ***Medical critical care*** locations specialize in care of critically ill patients with nonsurgical conditions including cardiac, neurological, prenatal, or respiratory conditions. These CDPH-defined patient care locations are further subdivided by
    - Major teaching institutions
    - All other (non-major teaching) institutions

- ***Medical/surgical critical care*** locations specialize in care of critically ill patients with medical and/or surgical conditions. These CDPH-defined patient care locations are further subdivided by
    - Major teaching institutions
    - All other (non-major teaching) institutions

- ***Surgical critical care patient locations*** specialize in critical care for pre- or post-surgical conditions, including cardiac and thoracic surgery and neurosurgery.

- ***Burn critical care locations*** specialize in care of critically ill patients with significant/major burns.

- ***Trauma critical care*** patient locations specialize in care of critically ill patients who require a high level of monitoring and/or intervention following trauma or during critical illness related to trauma.

- ***Long-term acute critical care*** locations specialize in critically ill patients suffering from medically complex conditions, or patients who have suffered recent catastrophic illness or injury and require an extended stay in an acute care environment.

- ***Pediatric critical care*** locations specialize in critical care to patients less than or equal to 18 years of age including surgical and/or medical care.

Neonatal critical care areas

- *Neonatal critical care* locations specialize in Level II/III and/or Level III critical care provided to newborns and infants. These CDPH-defined patient care locations are further subdivided by birth weight categories of
    - *less than or equal to 750 grams*
    - *751 grams - 1000 grams*
    - *1001 grams - 1500 grams*
    - *1501 grams - 2500 grams*
    - *more than 2500 grams*

General Care areas

- ***Step down general care*** locations specialize in patients that are hemodynamically stable who can benefit from close supervision and monitoring. These CDPH-defined patient care locations are further subdivided by age groups as

    - *Adult*
    - *Neonatal (*infants of weight ≥1500 grams requiring resuscitation and stabilization before transfer to a facility at which newborn intensive care is provided)
    - *Pediatric step down general care* locations specialize in patients less than or equal to 18 years of age

- ***Medical general care*** locations provide evaluation and treatment of nonsurgical conditions including acute stroke, burn, gerontology, medical, neurology, pulmonary, or telemetry services.

- ***Medical/surgical general care*** locations provide evaluation and treatment of medical and/or surgical conditions including gynecological.

- ***Surgical general care*** locations provide evaluation and treatment for pre- or post-surgical conditions including neurosurgery, orthopedic, orthopedic trauma, or vascular surgery.

- ***Long-term acute care*** locations specialize in patients suffering from medically complex conditions, or patients who have suffered recent catastrophic illness or injury and require an extended stay in an acute care environment.

- ***Rehabilitation general care*** locations provide care to patients who have lost function due to acute or chronic pain, musculoskeletal problems, stroke, or catastrophic events resulting in complete or partial paralysis. These CDPH-defined locations are further subdivided by age of patient

    - *Adult*
    - *Pediatric patients* (patients less than or equal to 18 years of age)

- ***Labor, delivery, postpartum general care*** locations provide evaluation and treatment of normal and high risk pregnancy patients.

- ***Behavioral general care*** locations provide evaluation and treatment of patients with acute psychiatric or behavioral disorders.

- ***Jail general care*** locations provide evaluation and treatment of patients who are in custody of law enforcement during their treatment.

- ***Pediatric general care*** locations provide evaluation or treatment to any patient less than or equal to 18 years of age for any medical or surgical condition.

Special Care Areas

- ***Bone marrow transplant special care*** locations specialize in patients who undergo bone marrow (stem cell) transplant for the treatment of various disorders. These CDPH-defined locations are further subdivided by age of patients

    - Adult patients further subdivided by the type of central line
        - Permanent central lines
        - Temporary central lines

    - Pediatric patients (patients less than or equal to 18 years of age) further subdivided by the type of central line
        - Permanent central lines
        - Temporary central lines

- ***Oncology special care*** locations specialize in patients who require management and treatment for cancer and/or blood disorders. Some of these CDPH-defined locations are further subdivided by age of patients

    - Oncology - Medical/Surgical Critical care further subdivided by type of central line (added in 2014)
        - Permanent central lines

        - Temporary central lines

    - General Hematology/Oncology Ward further subdivided by the type of central line
        - Permanent central lines
        - Temporary central lines

    - Pediatric patients (patients less than or equal to 18 years of age) – General Hematology/Oncology Ward further subdivided by the type of central line
        - Permanent central lines
        - Temporary central lines

    - Oncology solid tumor ward further subdivided by type of central lines (added in 2014)
        - Permanent central lines
        - Temporary central lines

- ***Solid organ transplant special care*** locations specialize in patients requiring postoperative care after solid organ transplant. These CDPH-defined locations are further subdivided by the type of central line

    - Permanent central lines
    - Temporary central lines

California Department of Public Health (CDPH) Patient Care Locations and the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) Unit Types

CDPH Patient Care Locations	CDC NHSN Unit Types That Comprise the CDPH Patient Care Locations
Critical care areas	
Medical Critical Care - Major Teaching Hospitals*	Medical Cardiac Critical Care
	Medical Critical Care Major Teaching*
	Neurologic Critical Care
	Respiratory Critical Care
Medical/Surgical Critical Care- Major Teaching Hospitals	Medical/Surgical Critical Care Teaching
Medical Critical Care - All Other Non-Major Teaching Hospitals	Medical Cardiac Critical Care
	Medical Critical Care All Others
	Neurologic Critical Care
Medical/Surgical Critical Care - All Other Non-Teaching Hospitals	Medical/Surgical Critical Care All Others
Surgical Critical	Neurosurgical Critical Care
	Surgical Cardiothoracic Critical Care
	Surgical Critical Care
Burn Critical Care	Burn Critical Care
Trauma Critical Care	Trauma Critical Care
Long Term Acute Critical Care	Long-Term Acute Critical Care
Pediatric Critical Care	Pediatric Cardiothoracic Critical Care
	Pediatric Medical Critical Care
	Pediatric Medical/Surgical Critical Care
Neonatal Critical Care Areas	
Neonatal Critical Care: Birth weight <= 750 Grams	Neonatal Critical Care (Level III)
	Neonatal Critical Care(Level II/III)
Neonatal Critical Care: Birth weight 751-1000 Grams	Neonatal Critical Care (Level III)
	Neonatal Critical Care(Level II/III)
Neonatal Critical Care: Birth weight 1001-1500 Grams	Neonatal Critical Care (Level III)
	Neonatal Critical Care(Level II/III)
Neonatal Critical Care: Birth weight 1501-2500 Grams	Neonatal Critical Care (Level III)
	Neonatal Critical Care(Level II/III)
Neonatal Critical Care: Birth weight >2500 Grams	Neonatal Critical Care (Level III)
	Neonatal Critical Care(Level II/III)
General care areas (wards)	
Adult Step Down	Adult Step Down Unit (post-critical care)
Neonatal Step Down	Step down Neonatal ICU (Level II)
Pediatric Step Down	Pediatric Step Down Unit (post-critical care)
Medical	Acute Stroke Ward
	Inpatient Burn Ward
	Inpatient Gerontology Ward
	Inpatient Medical Ward
	Inpatient Neurology Ward
	Inpatient Pulmonary Ward
	Telemetry Unit
Medical/Surgical	Inpatient Genitourinary Ward
	Inpatient Gynecology Ward
	Inpatient Medical/Surgical Ward
Surgical	Inpatient Neurosurgical Ward

California Department of Public Health (CDPH) Patient Care Locations and the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) Unit Types

CDPH Patient Care Locations	CDC NHSN Unit Types That Comprise the CDPH Patient Care Locations
	Inpatient Orthopedic Trauma Ward
	Inpatient Orthopedic Ward
	Inpatient Surgical Ward
	Inpatient Vascular Surgery Ward
Long Term Acute Care	Inpatient Long Term Acute Care Ward
Adult Rehabilitation	Inpatient Rehabilitation Ward
	Rehabilitation Hospital Ward
Labor, Deliver, Recovery, Post-partum	Inpatient Postpartum Ward
	Inpatient antepartum ward
	Labor and Delivery Ward
	Labor, Delivery, Recovery, Postpartum Suite (LDRP)
Behavioral Health/Psych	Inpatient Adolescent Behavioral Health Ward
	Inpatient Behavioral Health/Psych Ward
	Inpatient Pediatric Behavioral Health Ward
Jail	Inpatient Jail Unit
Pediatric - All General	Inpatient Medical Pediatric Ward
	Inpatient Pediatric Med/Surg Ward
	Inpatient Pediatric Surgical Ward
	Inpatient Well Baby Nursery (Level I)
Pediatric Rehabilitation	Inpatient Pediatric Rehabilitation Ward
Special care areas	
Oncology Medical /Surgical Critical Care	Oncology Medical/Surgical Critical Care
Oncology (including Hematology)	Hematology/Oncology SCA
Pediatric Oncology (including Hematology)	Pediatric Hematology/Oncology SCA
Oncology Solid Tumor Ward	Oncology Solid Tumor Ward
Bone Marrow Transplant	Bone Marrow Transplant SCA
Pediatric Bone Marrow Transplant	Pediatric Bone Marrow Transplant SCA
Solid Organ Transplant	Solid Organ Transplant SCA

*If a hospital was designated as a major teaching hospital, **all critical medical care services** (cardiac, medical, neurologic and respiratory) were combined to create the CDPH patient care location 'Medical Critical Care – Major Teaching Hospital'. Similarly, if a hospital was designated as a non-major teaching hospital, all medical critical care services were combined.