

Distance to Delivery in Virginia: Methodology Notes

JULY 2026

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Overview

Maternal health is a key focus for public health officials at both the national and state levels. The closure of birthing centers and labor and delivery departments, especially in rural communities, can limit access to care and affect outcomes for mothers and infants.

This analysis and accompanying interactive report utilize Virginia's patient-level hospital discharge data to examine travel distance and travel time for childbirth in Virginia, emphasizing variation across urban and rural areas.

Data Source

The analysis within the report was performed using Virginia Health Information Patient Level Dataset (PLD) with facility capacity (staffed beds) from the Annual Licensure Survey Data (ALSD) received from Virginia Health Information (VHI), which administers and maintains the statewide database on behalf of the Virginia Department of Health (VDH). The PLD contains historical hospital discharge data from all state-licensed hospitals.

This report focuses on discharge records from 2019 through 2024 for cesarean and vaginal deliveries as defined by the Centers for Medicare and Medicaid Services (CMS) Medicare Severity Diagnosis-Related Groups (MS-DRGs) or All Patient Refined Diagnosis-Related Groups (APR-DRGs)^{1,2}.

Data in the analysis was limited to Virginia residents who were 11 or older that gave birth and had high-quality geographic matches for their location of residence's geographic coordinates (93.6% of delivery records in the data extract). Virginia residence is based on the mother's ZIP code available on the discharge record.

Note that the ALSA staffed beds statistics used in the report are based on hospital fiscal years, in contrast to the PLD statistics which are based on calendar years (based on discharge dates).

¹ All Patient Refined Diagnosis Related Groups (APR-DRGS) Version 20.0. 3M Health Information Systems. (2003). Retrieved from <https://hcup-us.ahrq.gov/db/nation/nis/APR-DRGsV20MethodologyOverviewandBibliography.pdf> in May 2026.

² Centers for Medicare and Medicaid Services (CMS). ICD-10-CM/PCS MS-DRG v37.2 Definitions. (n.d.) Retrieved from https://www.cms.gov/icd10m/version372-fullcode-cms/fullcode_cms/P0001.html in May 2026.

Time Period

The analysis includes discharge records from January of 2019 through December of 2024, where the year is defined based on mother's discharge date. Statistics are presented for single year and an aggregated value across all years (2019 through 2024 combined).

Patient and Hospital Address Geocoding

Patient addresses of residence and hospital addresses were available with full street detail for this analysis, assuring more precise geolocation. Addresses were geocoded using a third-party, HIPAA-compliant tool, Geocodio³, in order to obtain geographic coordinates, i.e. latitude and longitude of these locations. Geocodio has been relied upon for large scale geocoding of addresses from healthcare databases.

Geocodio returns geographic coordinates formatted as decimal degrees with 6 decimals of precision, more than sufficient for a very precise geolocation of the building that represents someone's residence or the hospital's main building. The tool also returns information about the accuracy of the match, indicating whether the input addresses were matched to the exact location or to some other less accurate location, varying from rooftop location (e.g. exact location) to a "place" accuracy (i.e., the returned coordinates represent the ZIP code or city/town centroid) or "state" accuracy (i.e., the returned coordinates represent the state centroid). The latter indicates that the input address either did not include the street address detail needed, or the available street detail could not provide a match using Geocodio's current algorithm, so the match was made to a larger geographic area.

Most patient addresses returned high accuracy matches. We selected only the highest accuracy matches for this analysis, specifically 'rooftop', 'nearest rooftop match', and 'range interpolation' with a total of 97% of all address observations that were geocoded (Table 1). The remaining 3% of addresses were excluded because the input address information was either unavailable or the available match has lower accuracy, therefore the resulting travel time and travel distance calculations, as described in the next section, may produce highly inaccurate estimates.

³ More information about Geocodio and publicly available tool documentation are available at: <https://www.geocod.io/>.

TABLE 1. GEOCODING ACCURACY TYPE FOR PATIENT ADDRESSES

Accuracy Type	Number of Addresses	Percent of Addresses
Rooftop	493,808	94%
Nearest Rooftop Match	1,926	0%
Range Interpolation	17,501	3%
Street Center	6,483	1%
Place	5,621	1%
State	1	0%
Geocoding Not Possible	120	0%
All	525,460	100%

Patient addresses that represent PO Boxes (1% of all patient addresses; Table 2) were flagged and excluded from the analysis, regardless of accuracy type. They are likely to represent the address of a Post Office where the patient receives mail, rather than the actual location of residence.

TABLE 2. PO BOX PRESENCE FOR PATIENT ADDRESSES

PO Box Address	Number of Addresses	Percent of Addresses
No	521,200	99%
Yes	4,260	1%

A total of 98% of the geocoded patient addresses had high accuracy types and do not represent PO Boxes (Table 3).

TABLE 3. GEOCODING ACCURACY TYPE AND PO BOX PRESENCE FOR PATIENT ADDRESSES

Accuracy Type	PO Box Address	Number of Addresses	Percent of Addresses
High Accuracy	No	513,142	98%
Not High Accuracy	No	8,058	2%
High Accuracy	Yes	93	0%
Not High Accuracy	Yes	4,167	1%

All hospital addresses used in this analysis returned high accuracy matches (Table 4).

TABLE 4. GEOCODING ACCURACY TYPE FOR HOSPITAL ADDRESSES

Accuracy Type	Number of Addresses	Percent of Addresses
Rooftop	54	96%
Range Interpolation	2	4%

Travel Distance and Travel Time Calculation

Geocodio's Distance API using the driving mode⁴ was used to calculate the driving distance (in miles) and driving time (in seconds) between patient's geocoded address (origin) and delivery hospital's geocoded address (destination). The driving time was transformed to minutes for the display in this report by dividing the output values by 60.

The driving distance and time between origins and destinations use real-world road networks. The API calculates routes with the Open Source Routing Machine (OSRM) over OpenStreetMap road data, using a standard car profile. The route it selects is the fastest one by estimated travel time, therefore the returned value for the *driving distance* represents *the length of the selected fastest route*. The route selected may use highways instead of local streets whenever they make for a faster route between origin and destination.

Geocodio's *driving time* calculations reflect *typical or average travel conditions*, not real-time traffic.

Mother and Delivery Characteristics

Delivery Type and Mother's Risk Status

Delivery type refers to either vaginal or cesarean deliveries, defined using the CMS MS-DRG or APR-DRG code submitted on the discharge record.

- Cesarean deliveries are hospital discharges with one of the following DRGs ^{1,2}:
 - MS DRGs: 783, 784, 785, 786, 787, 788
 - APR-DRGs: 839, 840
- Vaginal deliveries are hospital discharges with one of the following DRGs ^{1,2}:
 - MS DRGs: 768, 796, 797, 798, 805, 806, 807
 - APR-DRGs: 541, 542, 560

Delivery risk status is defined as 'High' if the delivery record met the criteria for severe maternal morbidity based on the definition⁵ from the Centers for Disease Control and Prevention (CDC); if the criteria were not met, the delivery risk status was labeled as

⁴ Geocodio Distance API Documentation. Available at <https://www.geocod.io/docs/#distance>.

⁵ Centers for Disease Control and Prevention (CDC) (May 2024). *Identifying Severe Maternal Morbidity (SMM)*. Retrieved from <https://www.cdc.gov/maternal-infant-health/php/severe-maternal-morbidity/icd.html> in May 2026.

'Low'. CDC's Severe Maternal Morbidity definition is based on the presence of selected ICD-10-CM diagnosis codes or ICD-10 PCS procedure codes which indicate life-threatening complications or conditions such as myocardial infarctions, cerebral infarctions, premature separation of placenta, and eclampsia. For a detailed list of codes used to define the 'High Risk' deliveries, please see Appendix A.

The combined delivery type and risk status groupings included in the report are:

- All Deliveries
- All Cesarean Deliveries
- All Vaginal Deliveries
- All High-Risk Deliveries
- All Low-Risk Deliveries
- High-Risk Cesarean Deliveries
- High-Risk Vaginal Deliveries
- Low Risk Cesarean Deliveries
- Low-Risk Vaginal Deliveries

Age Groups

Age groups are defined using the mother's age at the time of delivery based on age information listed on the discharge record. The groupings displayed in the report include:

- 11-19
- 20-29
- 30-39
- 40+

Race and Ethnicity

Race and Ethnicity are defined as mutually exclusive categories using the mother's reported race and ethnicity at the time of delivery based on information listed on the discharge record. The categories displayed in the report include:

- American Indian/Alaska Native (AI/AN)
- Asian
- Black
- Hispanic
- White
- Other

- Unknown

Health Insurance Type

Health Insurance Type refers to the payment details at the time of delivery based on information available on the discharge record about the expected payer. Hospital discharge data categorizes the patient's primary coverage as the primary expected source of payment (primary insurer expected to be responsible for reimbursing the hospital for the services provided). Insurance types displayed in the report include:

- All Health Insurance: All Payors
- Public Health Insurance: Medicaid, Medicare, Dual Medicare/Medicaid, Government Assistance, Local Government, Other Government, and Tricare
- Private Health Insurance: Commercial Payors; examples: Anthem BC/BS, Aetna, Cigna, United Healthcare
- Other or No Insurance: Self Pay, Indigent/Charity, Worker's Comp, Jail/Detention, Foreign, or Unknown

Geographic Groupings

Geographic information is based on mother's address at the time of delivery. Only mothers residing in Virginia were included.

The groupings presented in the report include:

- Counties
- Urban Counties
- Rural Counties
- Health Planning Regions
- Statewide

Counties

Virginia has 95 counties with 38 cities that are treated as county equivalents. These city selections may be less visible on the maps due to the smaller geographic borders for these locations⁶.

⁶ The Voice of Commonwealth's Counties. (2022). Retrieved from <https://www.vaco.org/virginia-counties> in May 2026.

Health Planning Regions

The Virginia Department of Health (VDH) defines the local Health Planning districts and regions⁷. These regions allow for a coordinated regional effort to address a wide range of public and emergency response purposes and are defined at the county level (Table 5). For a list of counties by health planning region, please see Appendix B.

TABLE 5: NUMBER OF COUNTIES BY HEALTH PLANNING REGION

Health Planning Region	Number of Counties
Central Virginia	27
Eastern Virginia	26
Northern Virginia	9
Northwestern Virginia	32
Southwest Virginia	39

Urbanicity

Urbanicity refers to a county level assignment of the Urban or Rural status. These are defined using the National Center for Health Statistics (NCHS) Urban-Rural Classification scheme for counties, with Urban being defined as Metropolitan counties and Rural being defined as Nonmetropolitan counties. This classification scheme is created using the U.S. Census data.⁸

Maternity Hospitals

There are a total of 55 hospitals with delivery-related discharge records during the 2019-2024 reporting time frame, with 6 hospitals dropping during this period. For more details about the 55 hospitals in this analysis, referenced as “maternity hospitals” below, please see Appendices C and D.

Maternity hospital details within the report include the following:

- Hospital County
- Hospital Health Planning Region
- Hospital Urbanicity status using the NCHS Urban-Rural Classification scheme

⁷ Hospital & Healthcare Preparedness. Virginia Department of Health (VDH). (2026). Retrieved from <https://www.vdh.virginia.gov/emergency-preparedness/hospital-healthcare-preparedness/> in May 2026.

⁸ National Centers for Health Statistics (NCHS) urban-rural classification scheme for counties. Centers for Disease Control. (2024). Retrieved from https://www.cdc.gov/nchs/data-analysis-tools/urban-rural.html#cdc_data_surveillance_section_5-data-files-and-documentation in May 2026.

- Hospital size by staffed beds based on information provided for the most recent quarter of data for each facility.

For information on number of deliveries by hospital and year, please see Appendix D.

Report Measures

The measures calculated and included in this report are listed below.

Average Travel Time to Delivery in Minutes

This is defined as the estimated travel time in minutes between mother's residence and hospital of delivery, averaged across groupings of interest.

Average Distance to Delivery in Miles

This is defined as the estimated travel distance in miles between mother's residence and hospital of delivery, averaged across groupings of interest.

Percentage of Deliveries More Than 50 Miles or 60 Minutes from Home

This is defined as the percentage of deliveries where the mother had to travel more than an estimated 50 miles or 60 minutes for delivery.

Number of Deliveries

This represents the number of delivery events.

Report Summary Statements

At the top of each page, there is a dynamic summary of key points for this analysis.

- The **Statewide** page includes a statement that highlights:
 - The proportion of mothers that had resided in rural areas during the selected time frame;
 - The average distance traveled and average time traveled for mothers that reside in rural areas compared to the same average measure values for mothers that reside in urban areas within the state during the selected time frame. The difference is calculated as a simple subtraction between the respective average measure values.

The Statewide page summary statement updates based on the filter selections for year, delivery type, and health insurance type.

- The **County** page includes a statement that compares the average distance traveled and average time traveled for mothers from the selected county, on one hand, and the average distance traveled and average time traveled, respectively, for mothers from all counties of the same urbanicity status (i.e., all rural counties, all urban counties), on the other hand. The difference is calculated as a simple subtraction between the respective average measure values.

The County page summary statement updates based on the filter selections for year, delivery type, county of residence, and health insurance type.

- The **Trends Over Time** page includes a statement that highlights the difference in the average distance traveled for mothers in Virginia between 2019 and 2024 as a percent, and the difference in the average time traveled for mothers in Virginia between 2019 and 2024 as a percent. The percent is calculated as the 2024 value divided by the 2019 value, then multiplying the result by 100.

The Trends Over Time page summary statement updates based on the filter selections for delivery type and health insurance type.

Data Suppression

Data suppression rules consistent with the CMS Cell Size Suppression Policy were applied to all measure calculations⁹. Counts between 1 and 10 were suppressed, and, if necessary, additional counts or high granularity breakdowns were suppressed to prevent users from deriving suppressed values from other displayed data points, also referred to as “secondary suppression”.

The breakdown combinations of one of the delivery types (a) high-risk vaginal deliveries, (b) high-risk cesarean deliveries, (c) low-risk vaginal deliveries, and (d) low-risk cesarean deliveries, respectively, with the health insurance type ‘other or no insurance’ have consistently low counts in this analysis, therefore these combinations were excluded from the final reporting dataset in order to prevent the over-suppression of statistics once secondary suppression rules are implemented.

⁹ CMS Cell Suppression Policy. ResDAC. (2024). Retrieved from <https://resdac.org/articles/cms-cell-size-suppression-policy> in May 2026.

Suppressed or otherwise unavailable data points are indicated by the presence of an asterisk symbol (*) in charts and tooltips.

Data Limitations and Considerations

We recommend considering the following information when using the report:

- Travel time¹⁰ and travel distance represent estimates. The actual routes used for driving to the hospital and the actual point of origin (which might have been a location different than the home address) are not available, therefore these calculations approximate or estimate the respective travel route and should be interpreted as such. Additionally, depending on the time of day, day of the week and month, the actual drive would be impacted by seasonal and time traffic patterns that are not modeled in this analysis.
- The use of different geocoding and geographic analyses tools may offer different results than the tool selected for this analysis, thus the output presented in this analysis should be understood as specific to the tool used for this purpose. To validate the output, we spot-checked a small set of origin-destination pairs for driving distance and time against the same calculations produced by Google Maps, and the output statistics appeared comparable and differences were reasonable. Small differences are expected given there may be multiple routing options and the driving time depends on real-time traffic.
- Two of the main measures presented in this analysis (i.e., Average Travel Time to Delivery, Average Distance to Delivery) are calculated as averages, and therefore are subject to outliers, especially when the aggregate includes deliveries that occurred in unusual circumstances. We recommend always consulting the "Percentage of Deliveries More Than 50 Miles or 60 Minutes from Home" statistics, for a more robust calculation based on proportion of deliveries that would be considered above the threshold of reasonable travel time or travel distance. This calculation uses the total number of deliveries with travel time or distance values above the threshold as the numerator; the magnitude of travel time or distance beyond those thresholds does not affect the calculation.

¹⁰ Per Geocodio: "Geocodio's Distance API uses average travel times, and it doesn't take real-time traffic into account." Retrieved from <https://www.geocod.io/updates/2026-01-06-distance-matrix-api-launch-on-July-13>, 2026.

- For high-risk births, this definition is based on the presence of ICD-10-CM diagnosis and ICD-10 PCS codes. If these codes are not available or were inaccurately coded, then some high-risk deliveries may not be captured.
- Research indicates that rural communities grew by ~1.6% from 2020 to 2025¹¹. This population migration from urban to rural communities may be a factor that impacts the travel time for deliveries among Virginia expectant mothers in addition to changes in birth facility availability. Statistical significance testing was not performed, so any changes over time should be interpreted with caution.
- Facility details are grouped based on Medicare Provider Numbers (MPN). Although infrequent (6 of the 55 maternity hospitals), as informed by the details available in the ALSD data, a single MPN can group two or more distinct hospital affiliated facilities or off campus departments of hospitals. Some of these distinct facilities or departments are not located at the same physical location or in the immediate vicinity of the main hospital campus. The PLD data does not have the granularity needed to be able to identify or separate out locations, and therefore in this analysis we have used the main hospital campus' address as the destination for deliveries associated with its MPN. If a portion of the deliveries attributed to a specific MPN take place in different locations than assumed, calculations may over- or underestimate the driving distance and time for the respective subset of deliveries.

¹¹ Weldon Cooper Center for Public Service. 2025 Virginia Population Estimates (2026, Feb 24). Retrieved from <https://www.coopercenter.org/research/2025-virginia-population-estimates> in July 2026.

Appendix A: High-Risk Delivery Criteria

To define deliveries as “high risk” for this analysis, we used the criteria for Severe Maternal Morbidity, as defined by the Centers for Disease Control and Prevention (CDC), and available in the table below, with detailed ICD-10 Diagnosis (DX) and Procedure (PR) codes used for this purpose. A delivery was labeled as “high risk” if any of these ICD-10 codes were present on the delivery record.

Severe Maternal Morbidity Indicator	Diagnosis (DX) or Procedure (PR) Code	ICD-10 Code(s)
Acute Myocardial Infarction	DX	I21.*, I22.*
Aneurysm	DX	I71.*, I79.0
Acute Renal Failure	DX	N17.*, O90.4
Acute Respiratory Distress Syndrome	DX	J80, J95.1, J95.2, J95.3, J95.82*, J96.0*, J96.2*, J96.9*, R06.03, R09.2
Amniotic Fluid Embolism	DX	O88.112, O88.113, O88.119, O88.12, O88.13
Cardiac Arrest / Ventricular Fibrillation	DX	I46.*, I49.0*
Conversion of Cardiac Rhythm	PR	5A12012, 5A2204Z
Disseminated Intravascular Coagulation	DX	D65, D68.8, D68.9, O45.002, O45.003, O45.009, O45.012, O45.013, O45.019, O45.022, O45.023, O45.029, O45.092, O45.093, O45.099, O46.002, O46.003, O46.009, O46.012, O46.013, O46.019, O46.022, O46.023, O46.029, O46.092, O46.093, O46.099, O67.0, O72.3
Eclampsia	DX	O15.*
Heart Failure / Arrest During Surgery or Procedure	DX	I97.120, I97.121, I97.130, I97.131, I97.710, I97.711
Puerperal Cerebrovascular Disorders	DX	A81.2, G45.*, G46.*, G93.49, H34.0*, I60.*, I61.*, I62.*, I63.00, I63.01*, I63.1*, I63.2*, I63.3*, I63.4*, I63.5*, I63.6, I63.8*, I63.9, I65.*, I66.*, I67.*, I68.*, O22.50, O22.52, O22.53, I97.810, I97.811, I97.820, I97.821, O87.3
Pulmonary Edema / Acute Heart Failure	DX	I50.1, I50.20, I50.21, I50.23, I50.30, I50.31, I50.33, I50.40, I50.41, I50.43, I50.810, I50.811, I50.813, I50.814, I50.82, I50.83, I50.84, I50.89, I50.9, J81.0
Severe Anesthesia Complications	DX	O29.112–O29.119, O29.122–O29.129, O29.192–O29.199, O29.212–O29.219, O29.292–O29.299, O74.0, O74.1, O74.2, O74.3, O89.0*, O89.1, O89.2, T88.2XXA, T88.3XXA
Sepsis	DX	A32.7, A40.*, A41.*, I76, O85, O86.04, R65.20, R65.21, T81.12XA, T81.44XA
Shock	DX	O75.1, R57.*, T78.2XXA, T81.10XA, T81.11XA, T81.19XA, T88.6XXA

Severe Maternal Morbidity Indicator	Diagnosis (DX) or Procedure (PR) Code	ICD-10 Code(s)
Sickle Cell Disease With Crisis	DX	D57.00, D57.01, D57.02, D57.211, D57.212, D57.219, D57.411, D57.412, D57.419, D57.811, D57.812, D57.819
Air and Thrombotic Embolism	DX	I26.*, O88.012–O88.03, O88.212–O88.23, O88.312–O88.33, O88.812–O88.83, T80.0XXA
Hysterectomy	PR	0UT90ZL, 0UT90ZZ, 0UT97ZL, 0UT97ZZ
Temporary Tracheostomy	PR	0B110F4, 0B113F4, 0B114F4
Ventilation	PR	5A1935Z, 5A1945Z, 5A1955Z

Source: Centers for Disease Control and Prevention (CDC) (May 2024). *Identifying Severe Maternal Morbidity (SMM)*. Retrieved from <https://www.cdc.gov/maternal-infant-health/php/severe-maternal-morbidity/icd.html> in May 2026.

Appendix B: County to Health Planning Region Crosswalk

Health Planning Region	Number of Counties	Counties
Central Virginia	27	Amelia County, Brunswick County, Buckingham County, Charles City County, Charlotte County, Chesterfield County, Cumberland County, Dinwiddie County, Goochland County, Greenville County, Halifax County, Hanover County, Henrico County, Lunenburg County, Mecklenburg County, New Kent County, Nottoway County, Powhatan County, Prince Edward County, Prince George County, Surry County, Sussex County, Colonial Heights City, Emporia City, Hopewell City, Petersburg City
Eastern Virginia	26	Accomack County, Essex County, Gloucester County, Isle of Wight County, James City County, King and Queen County, King William County, Lancaster County, Mathews County, Middlesex County, Northampton County, Northumberland County, Richmond County, Southampton County, Westmoreland County, York County, Chesapeake City, Franklin City, Hampton City, Newport News City, Norfolk City, Poquoson City, Portsmouth City, Suffolk City, Virginia Beach City, Williamsburg City
Northern Virginia	9	Arlington County, Fairfax County, Loudoun County, Prince William County, Alexandria City, Fairfax City, Falls Church City, Manassas City, Manassas Park City
Northwestern Virginia	32	Albemarle County, Augusta County, Bath County, Caroline County, Clarke County, Culpeper County, Fauquier County, Fluvanna County, Frederick County, Greene County, Highland County, King George County, Louisa County, Madison County, Nelson County, Orange County, Page County, Rappahannock County, Rockbridge County, Rockingham County, Shenandoah County, Spotsylvania County, Stafford County, Warren County, Buena Vista City, Charlottesville City, Fredericksburg City, Harrisonburg City, Lexington City, Staunton City, Waynesboro City, Winchester City
Southwest Virginia	39	Alleghany County, Amherst County, Appomattox County, Bedford County, Bland County, Botetourt County, Buchanan County, Campbell County, Carroll County, Craig County, Dickenson County, Floyd County, Franklin County, Giles County, Grayson County, Henry County, Lee County, Montgomery County, Patrick County, Pittsylvania County, Pulaski County, Roanoke County, Russell County, Scott County, Smyth County, Tazewell County, Washington County, Wise County, Wythe County, Bristol City, Covington City, Danville City, Galax City, Lynchburg City, Martinsville City, Norton City, Radford City, Roanoke City, Salem City

Appendix C: Maternity Hospital Details

The following list of hospitals represents the delivery hospitals used in this analysis, and the main hospital address which was used for the calculations of driving time and driving distance for associated deliveries.

Hospital Name	Hospital Address	Hospital County and Urbanicity
Augusta Health	78 Medical Center Drive, Fishersville, VA 22939	Augusta County (Urban)
Bon Secours DePaul Medical Center	150 Kingsley Lane, Norfolk, VA 23505	Norfolk City (Urban)
Bon Secours Mary Immaculate Hospital	2 Bernardine Drive, Newport News, VA 23602	Newport News City (Urban)
Bon Secours Maryview Medical Center	3636 High Street, Portsmouth, VA 23707	Portsmouth City (Urban)
Bon Secours Memorial Regional Medical Center	8260 Atlee Road, Mechanicsville, VA 23116	Hanover County (Urban)
Bon Secours Southside Medical Center	200 Medical Park Boulevard, Petersburg, VA 23805	Petersburg City (Urban)
Bon Secours St. Francis Medical Center	13700 St. Francis Boulevard, Midlothian, VA 23114	Chesterfield County (Urban)
Bon Secours St. Mary's Hospital	5801 Bremono Road, Richmond, VA 23226	Henrico County (Urban)
Carilion Medical Center	1906 Belleview Avenue, Roanoke, VA 24014	Roanoke City (Urban)
Carilion New River Valley Hospital	2900 Lamb Circle, Christiansburg, VA 24073	Montgomery County (Urban)
Centra Health	1920 Atherholt Road, Lynchburg, VA 24502	Lynchburg City (Urban)
Centra Southside Community Hospital	800 Oak Street, Farmville, VA 23901	Prince Edward County (Rural)
Chesapeake Regional Medical Center	736 Battlefield Boulevard North, Chesapeake, VA 23320	Chesapeake City (Urban)
CJW Medical Center	7101 Jahnke Road, Richmond, VA 23225	Richmond City (Urban)
Clinch Valley Medical Center	6801 Governor GC Peery Highway, Richlands, VA 24641	Tazewell County (Rural)
Fauquier Hospital	500 Hospital Drive, Warrenton, VA 20186	Fauquier County (Urban)
Henrico Doctors' Hospital	1602 Skipwith Road, Richmond, VA 23229	Henrico County (Urban)
Inova Alexandria Hospital	4320 Seminary Road, Alexandria, VA 22304	Alexandria City (Urban)
Inova Fair Oaks Hospital	3600 Joseph Siewick Drive, Fairfax, VA 22033	Fairfax County (Urban)
Inova Fairfax Hospital	3300 Gallows Road, Falls Church, VA 22042	Fairfax County (Urban)
Inova Loudoun Hospital	44045 Riverside Parkway, Leesburg, VA 20176	Loudoun County (Urban)
Johnston Memorial Hospital	16000 Johnston Memorial Drive, Abingdon, VA 24211	Washington County (Urban)
LewisGale Hospital Montgomery	3700 South Main Street, Blacksburg, VA 24060	Montgomery County (Urban)
LewisGale Medical Center	1900 Electric Road, Salem, VA 24153	Salem City (Urban)
Lonesome Pine Norton^	1990 Holton Avenue, East, Big Stone Gap, VA 24219	Wise County (Rural)

Hospital Name	Hospital Address	Hospital County and Urbanicity
Mary Washington Hospital	1001 Sam Perry Boulevard, Fredericksburg, VA 22401	Fredericksburg City (Urban)
Norton Community Hospital^	100 15th Street, NW, Norton, VA 24273	Norton City (Rural)
Reston Hospital Center	1850 Town Center Parkway, Reston, VA 20190	Fairfax County (Urban)
Riverside Regional Medical Center	500 J. Clyde Morris Boulevard, Newport News, VA 23601	Newport News City (Urban)
Riverside Shore Memorial Hospital	20480 Market Street, Onancock, VA 23417	Accomack County (Rural)
Sentara Careplex Hospital	3000 Coliseum Drive, Hampton, VA 23666	Hampton City (Urban)
Sentara Halifax Regional Hospital	2204 Wilborn Avenue, South Boston, VA 24592	Halifax County (Rural)
Sentara Leigh Hospital	830 Kempsville Road, Norfolk, VA 23502	Norfolk City (Urban)
Sentara Martha Jefferson Hospital	500 Martha Jefferson Drive, Charlottesville, VA 22911	Albemarle County (Urban)
Sentara Norfolk General Hospital	600 Gresham Drive, Norfolk, VA 23507	Norfolk City (Urban)
Sentara Northern Virginia Medical Center	2300 Opitz Boulevard, Woodbridge, VA 22191	Prince William County (Urban)
Sentara Obici Hospital	2800 Godwin Boulevard, Suffolk, VA 23434	Suffolk City (Urban)
Sentara Princess Anne Hospital	2025 Glenn Mitchell Drive, Virginia Beach, VA 23456	Virginia Beach City (Urban)
Sentara RMH Medical Center	2010 Health Campus Drive, Harrisonburg, VA 22801	Rockingham County (Urban)
Sentara Williamsburg Regional Medical Center	100 Sentara Circle, Williamsburg, VA 23188	York County (Urban)
Sovah Health - Danville	142 South Main Street, Danville, VA 24541	Danville City (Rural)
Sovah Health - Martinsville	320 Hospital Drive, Martinsville, VA 24112	Martinsville City (Rural)
Spotsylvania Regional Medical Center	4600 Spotsylvania Parkway, Fredericksburg, VA 22408	Spotsylvania County (Urban)
Stafford Hospital	101 Hospital Center Blvd, Stafford, VA 22554	Stafford County (Urban)
Stone Springs Hospital Center	24440 Stone Springs Blvd, Dulles, VA 20166	Loudoun County (Urban)
Twin County Regional Healthcare	200 Hospital Drive, Galax, VA 24333	Galax City (Rural)
University of Virginia Medical Center	1215 Lee Street, Charlottesville, VA 22903	Charlottesville City (Urban)
UVA Health Culpeper Medical Center	501 Sunset Lane, Culpeper, VA 22701	Culpeper County (Urban)
UVA Health Haymarket Medical Center	15225 Healthcote Blvd, Haymarket, VA 20169	Prince William County (Urban)
UVA Health Prince William Medical Center	8700 Sudley Road, Manassas, VA 20110	Manassas City (Urban)
Valley Health Winchester Medical Center	1840 Amherst Street, Winchester, VA 22601	Winchester City (Urban)
VCU Community Memorial Hospital	<i>From April 2022 forward:</i> 1755 North Mecklenburg Avenue, South Hill, VA 23970	Mecklenburg County (Rural)
	<i>Through March 2022:</i> 125 Buena Vista Circle, South Hill, VA 23970	Mecklenburg County (Rural)
VCU Medical Center	1250 East Marshall Street, Richmond, VA 23298	Richmond City (Urban)

Hospital Name	Hospital Address	Hospital County and Urbanicity
Virginia Hospital Center	1701 N. George Mason Drive, Arlington, VA 22205	Arlington County (Urban)
Wythe County Community Hospital	600 West Ridge Road, Wytheville, VA 24382	Wythe County (Rural)

^Starting in 2021, Norton Community Hospital started to be reported under Lonesome Pine Norton.

Appendix D: Number of Deliveries by Year and Hospital

The number of deliveries in this table reflects the PLD records selected for the analysis, which represent a subset of all deliveries that took place at these hospitals. Exclusions applied are described throughout this document.

Hospital	2019	2020	2021	2022	2023	2024	2019-2024
Augusta Health	2,892	2,919	2,985	2,610	3,249	3,954	18,609
Bon Secours DePaul Medical Center	3,477	519	0	0	0	0	3,996
Bon Secours Mary Immaculate Hospital	4,266	3,879	4,488	4,650	3,768	3,183	24,234
Bon Secours Maryview Medical Center	444	0	0	0	0	0	444
Bon Secours Memorial Regional Medical Center	2,985	2,871	3,129	3,297	3,054	2,859	18,195
Bon Secours Southside Medical Center	2,541	2,274	1,878	1,779	1,767	1,572	11,811
Bon Secours St. Francis Medical Center	6,591	6,156	6,222	6,771	6,810	7,167	39,717
Bon Secours St. Mary's Hospital	5,844	6,156	6,345	6,291	6,387	6,591	37,614
Carilion Medical Center	8,970	8,439	8,466	9,012	8,721	9,444	53,052
Carilion New River Valley Hospital	2,598	2,388	2,205	2,436	2,070	2,334	14,031
Centra Health	5,706	7,410	7,398	7,659	7,569	7,836	43,578
Centra Southside Community Hospital	555	783	798	714	816	810	4,476
Chesapeake Regional Medical Center	7,638	7,779	8,349	8,688	7,860	7,212	47,526
CJW Medical Center	8,025	8,043	8,595	7,542	6,456	6,462	45,123
Clinch Valley Medical Center	675	528	510	444	402	336	2,895
Fauquier Hospital	1,482	1,065	1,173	1,371	1,347	1,662	8,100
Henrico Doctors' Hospital	11,754	11,595	12,453	12,486	11,841	11,907	72,036
Inova Alexandria Hospital	8,301	7,755	7,929	8,064	7,824	8,109	47,982
Inova Fair Oaks Hospital	9,030	8,061	10,308	10,380	10,623	9,813	58,215
Inova Fairfax Hospital	28,263	26,220	26,307	27,135	25,593	26,559	160,077
Inova Loudoun Hospital	6,735	6,687	7,536	7,506	7,134	7,947	43,545
Johnston Memorial Hospital	1,341	1,353	1,458	1,107	1,134	1,110	7,503
LewisGale Hospital Montgomery	1,491	1,626	1,668	1,116	1,212	309	7,422
LewisGale Medical Center	2,796	3,057	3,336	3,519	3,453	4,314	20,475
Lonesome Pine Norton^	474	117	504	681	651	606	3,033
Mary Washington Hospital	4,821	5,109	4,965	5,484	6,555	6,240	33,174
Norton Community Hospital^	384	648	114	0	0	0	1,146
Reston Hospital Center	8,748	8,253	5,790	5,307	5,388	3,930	37,416
Riverside Regional Medical Center	7,287	8,082	7,935	7,839	8,361	9,162	48,666
Riverside Shore Memorial Hospital	510	546	598	548	582	536	3,320
Sentara Careplex Hospital	1,392	1,596	1,338	1,107	1,392	1,539	8,364
Sentara Halifax Regional Hospital	1,041	954	756	696	345	0	3,792

Hospital	2019	2020	2021	2022	2023	2024	2019-2024
Sentara Leigh Hospital	4,692	8,091	8,823	8,907	8,931	8,817	48,261
Sentara Martha Jefferson Hospital	4,089	3,747	3,369	3,360	3,435	3,465	21,465
Sentara Norfolk General Hospital	6,534	9,393	8,007	8,694	8,955	9,990	51,573
Sentara Northern Virginia Medical Center	4,137	3,873	3,816	4,728	4,707	4,626	25,887
Sentara Obici Hospital	3,816	3,627	3,255	3,447	3,243	3,279	20,667
Sentara Princess Anne Hospital	6,174	5,718	5,601	6,135	5,826	5,616	35,070
Sentara RMH Medical Center	5,208	5,070	4,794	5,121	4,371	3,504	28,068
Sentara Williamsburg Regional Medical Center	2,451	2,109	2,049	2,328	1,965	1,650	12,552
Sovah Health - Danville	1,743	1,779	1,809	2,169	2,166	2,391	12,057
Sovah Health - Martinsville	903	546	372	45	0	0	1,866
Spotsylvania Regional Medical Center	1,878	3,585	3,705	3,489	2,892	2,487	18,036
Stafford Hospital	2,568	3,675	3,459	3,336	2,964	2,820	18,822
Stone Springs Hospital Center	1,776	2,022	2,601	2,376	2,538	3,477	14,790
Twin County Regional Healthcare	699	675	663	600	459	603	3,699
University of Virginia Medical Center	5,433	5,508	6,435	6,507	6,642	6,882	37,407
UVA Health Culpeper Medical Center	1,419	1,554	1,644	1,680	1,818	1,794	9,909
UVA Health Haymarket Medical Center	3,111	855	0	0	0	0	3,966
UVA Health Prince William Medical Center	2,532	4,980	5,865	5,853	5,301	5,592	30,123
Valley Health Winchester Medical Center	5,355	5,325	5,025	5,115	5,157	5,052	31,029
VCU Community Memorial Hospital	531	534	576	594	744	726	3,705
VCU Medical Center	7,410	7,122	7,278	7,824	8,538	9,306	47,478
Virginia Hospital Center	8,421	11,004	9,942	10,953	10,818	10,767	61,905
Wythe County Community Hospital	954	879	711	939	849	972	5,304

^ Starting in 2021, Norton Community Hospital started to be reported under Lonesome Pine Norton.