
# A Report on Observation Unit Stays in Washington State

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## EXECUTIVE SUMMARY

Hospital-based observation units (OU) provide a setting where patients can be evaluated and given short term treatments while medical staff determines if an inpatient admission is required or if ambulatory care is sufficient. Initially established for managing patients presenting with chest pain, the typical length of stay within an OU was generally assumed to be about 24 hours or less, with an occasional stay of up to 48 hours.

In 2007 the Institute of Medicine heralded OU's as a desirable approach in managing common ambulatory care sensitive conditions; in 2008 the American College of Emergency Physicians deemed them to be a "best practice" in evaluating patients.

Then, in 2010, the Recovery Audit Contractors (RAC) program began auditing hospital discharges for the Centers for Medicare and Medicaid Services (CMS). Among other effects, those audits incentivized the growth of OUs with both positive and negative consequences. For the most part, Medicare patients admitted for observation stays found that they had lower out-of-pocket costs than they would have had if they were admitted as inpatients. However, in some instances a patient's aggregate copayments could well exceed those for a typical inpatient stay. Moreover, a subset of Medicare patients discharged from a hospital OU to a nursing home found that Medicare would not pay for their nursing home stay, but if they had been discharged from an *inpatient* unit, their nursing home care would have been covered.

For hospitals, the consequences from RAC audits were also positive and negative. Treating less severely ill patients as outpatients (in the OU) could increase a hospital's inpatient case mix index and lead to higher reimbursement rates. However, the RAC audit findings could also lead to withdrawal of payments up to three years after an inpatient stay if it was determined that that stay should have occurred in an OU. Such a finding could also result in no payment, whatsoever, due to restrictions pertaining to timely billing.

In 2007 the Washington State Department of Health began collecting OU discharge data together with the inpatient data collected through the Comprehensive Hospital Abstract Reporting System (CHARS). This report focuses on the three most recent years' OU data, 2010-2012.

The report includes a background discussion, followed by brief overview of the data quality. The leading causes for OU stays are then identified for the state as a whole and for those hospitals whose leading causes differed for the state's. The statewide average lengths of stay (LOS) by age, over time, and among leading causes are also provided, as are hospital-specific LOS.

To assess variations among hospitals in LOS, the report then focuses on non-specific chest pain stays, looking at patients' characteristics in comparing hospitals with a long average LOS to those with a short average LOS.

To assess variations in the setting in which care is provided, hospitals' proportions of non-specific chest pain cases that are inpatient stays versus those that are OU stays are examined, again in terms of patients' characteristics.

Observation Unit cases with a LOS of three days or longer that are subsequently discharged to a nursing home are next assessed; these are cases where Medicare would have paid for the nursing home stay if the patient had been admitted to an inpatient unit instead of the OU.

Finally, the report looks at patient characteristics and variations among hospitals in terms of deaths occurring in the OU.

Below are the key findings:

- Statewide, non-specific chest pain was by far the leading cause for OU stays. In general, this held true for individual hospitals, although there were some hospitals where pregnancy-related conditions exceeded non-specific chest pain stays.
- Length of stay varied by age with older OU patients tending to have longer stays. LOS also varied by condition, with conditions more common among the elderly generally having the longer LOS.
- Between 2010 and 2012, the average LOS significantly increased; stays of three days or longer increased; and, while increases in average LOS were seen for all age groups, they were climbing fastest among those under age 65.
- Pronounced variations were seen among hospitals in their average LOS. This was true for all conditions combined and for non-specific chest pain alone. Looking at age, diagnoses and procedures, there did not appear to be any factors in the data that might explain these variations among select high-volume hospitals.
- Pronounced variations were seen in the choice of settings for treating non-specific chest pain patients. Some hospitals seemed more apt to care for those patients in the OU; others more apt to care for them in an inpatient unit. Here, too, there were not any factors in the data that might explain these variations among select high-volume hospitals.
- Pronounced variations were seen among the hospitals in the number of patients ages sixty-five or older who had a LOS of three days or longer and were discharged to a nursing home. Unlike inpatients, these OU patients would not have their nursing home stays paid for by Medicare, and thus could face steep long-term care costs. Again, there were not any factors in the data that seemed to explain these variations among select high-volume hospitals.
- An appreciable number of deaths occurred in the OU. This was somewhat surprising given the general purpose for OU stays, but it appeared as though a substantial portion of those deaths were associated with palliative care or DNRs.
- Overall the data quality appeared to be generally good.

Observation Unit data provide an additional perspective on a growing sector of the healthcare system that can have substantial financial implications for all involved. These data can also enhance our understanding of health care utilization, quality of care and underlying need, and we recommend that they be included in ongoing public health assessments and health care research analyses.

## BACKGROUND

"Are you a hospital inpatient or outpatient?" begins a patient advisory sheet from the Centers for Medicare and Medicaid Services (CMS)[i], and what seems like a patently simplistic question turns out to be, in fact, quite complex.

While inpatient care is generally assumed to be any care involving an overnight stay at a hospital, such an assumption would be mistaken. Some care involving an overnight hospitalization, or even many nights in the hospital, may actually be considered outpatient care – and insurers will

reimburse, and patients will be charged co-payments, accordingly. Units where these hospitalizations occur are known by many names, including the Clinical Decision Unit, the Chest Pain Unit, the Short Stay Unit, and the Rapid Diagnosis and Treatment Unit. For the purposes of this report we will refer to them as the Observation Unit (OU).

As early as the late-1970's, when the first severity-of-illness and intensity-of-service criteria were published, patients who needed less than 24 hours care were categorized as being admitted for "observation" care.[ii] By the mid-1980's hospitals began formally establishing units to care for these patients, generally to monitor those with chest pain who had a low to intermediate risk of an acute myocardial infarction.[iii] In 1996, CMS refined its payment codes to include observation care, but did not specify a particular care setting.[iv] By 2007, the Institute of Medicine concluded that OUs "reduce the need for boarding and diversion, avoid expensive hospitalizations, and appear to contribute to improved management of common ambulatory care sensitive conditions."[v] And in 2008, the American College of Emergency Physicians declared that using an OU for observation purposes "instead of a general inpatient bed or an acute emergency department bed, is a 'best practice.'"[vi]

In fact, it wasn't until 2010, four years after Congress passed the Tax Relief and Health Care Act establishing and fully implementing the Recovery Audit Contractors Program (RAC),[vii] that the growth – and, as some have maintained, the potentially negative implications – of OUs came to the fore.

The CMS regulations and guidance manual states:

> *Observation care is a well-defined set of specific, clinically appropriate services, which include ongoing short term treatment, assessment, and reassessment, that are furnished while a decision is being made regarding whether patients will require further treatment as hospital inpatients or if they are able to be discharged from the hospital… In the majority of cases, the decision whether to discharge a patient from the hospital following resolution of the reason for the observation care or to admit the patient as an inpatient can be made in less than 48 hours, usually in less than 24 hours.*[viii]

Based, in part, upon this guidance, RAC audits assessed the appropriateness of short stay admissions, and included post-payment reviews of inpatient claims with potential withdrawals of payments up to three years after the fact. According to the American Hospital Association, these audits – and the potential withdrawal of payments – created administrative burdens and financial consequences that generated a "greater caution when admitting patients for inpatient stays" and incentivized the growth of OU programs in their stead.[ix]

While such caution in the face of RAC audits may have reduced costs[x] and, arguably, helped to place patients in a more appropriate healthcare setting, it may have also increased the potential of financially affecting patients who might be unaware of their OU status and the subsequent rules governing their copayments and their access to long-term care services.

If, for instance, a Medicare patient is admitted to a hospital as an inpatient, he or she pays a one-time deductible for all hospital services and 20% of the approved charges for physician services. If, however, a Medicare patient is admitted to the hospital *as an OU patient*, he or she must pay a copayment for each service provided during the stay and while no single service copayment may exceed the one-time deductible charge for an inpatient stay, multiple service copayments can exceed that threshold. These OU patients are also subject to the 20% copayment for physician

services as well as the often exorbitant hospital-rate charges for any and all drugs[xi], including those that are part of their normal prescriptions as well as any OTC supplements.[xii] Moreover, Medicare inpatients who have a hospital stay of three days or longer and are subsequently discharged to a nursing home will not be charged for their nursing home stay; CMS will pay for it. But Medicare OU patients who have a stay of three days or longer and are subsequently discharged to a nursing home will have to pay for that nursing home care on their own.[xiii]

Because OU patients generally stay in the same units with inpatients (or in units that are indistinguishable from an inpatient unit), they may not know or fully understand that they are not inpatients. And while private insurers may not have the same rules as CMS for drugs and nursing home care coverage, those insurers often do treat OU stays as outpatient care and will bill their enrollees accordingly.[xiv]

Of course, not all OU stays are more expensive than an inpatient stay. In a recent comparison[xv] of a three day inpatient stay and a three day OU stay for the same condition, syncope, a Medicare inpatient, on average, could expect to pay $1,285 out-of-pocket, while a Medicare OU patient would only pay $533.[1]

And while CMS rules on OU stays may create administrative burdens for hospitals, hospitals can also financially benefit from having an OU program. CMS and other insurers, for instance, adjust their reimbursement rates for inpatient stays, in part, on the overall acuity of the hospital's inpatients. This adjustment for acuity is implemented through a case-mix multiplier: the higher the proportion of complex inpatients a hospital admits, the higher their case-mix multiplier. By treating low acuity patients in the OU – and not as an inpatient – hospitals can boost their proportion of higher acuity inpatients and thereby their inpatient case-mix multiplier, and thus increase their overall reimbursement rates.[xvi]

In January, 2014, CMS adopted a "two midnight" rule under which stays of two days or longer are presumed to be inpatient stays unless there is strong clinical documentation to the contrary.[xvii] The impacts of that policy change are not reflected in these data, but will be worth watching for as additional data are collected.

As noted from the start, "Are you a hospital inpatient or outpatient?" is neither a simple question, nor are the potential consequences trivial.

[1] If, however, that hospitalization was followed by a seven-day nursing home stay (as the article assumes), the inpatient would incur no additional costs while the OU patient would pay an additional $1,736 out-of-pocket.

## REPORT OBJECTIVES

In 2007, the Washington State Department of Health (DOH) began collecting OU data along with the inpatient data they had historically collected through the Comprehensive Hospital Abstract Reporting System (CHARS). This report focuses on those OU data collected for the three most recent calendar years, 2010 through 2012.

The report broadly provides descriptive statistics for the state as a whole, as well as hospital-specific measures pertaining to OU utilization. It begins with an overview of the data quality, followed by an assessment of the leading causes for OU stays, and includes a brief discussion of hospitals whose leading causes differ from the state's leading causes.

Next the report examines length of stay (LOS) by age, over time, and among leading causes. Focusing on non-specific chest pain OU stays, it compares cases in hospitals with a long average LOS to cases in hospitals with a short average LOS.

Mirroring the underlying intent of a RAC audit, the next section then looks at the setting – inpatient or OU – where hospitals treated their non-specific chest pain cases, assessing the percent of inpatient stays that are two days or shorter and the percent that are OU stays.

Focusing on those patients ages 75 or older and the concerns raised by Medicare's long-term care reimbursement rules, the report then looks at hospitals with OU cases having a LOS of three days or longer who are subsequently discharged to a nursing home.

Finally, there is an assessment of deaths occurring in the OU.

Overall, the report's intent is to profile OU stays, address areas of concern pertaining to those stays, and spur further interest in analyzing these data for public health assessment and health care research purposes.

## DATA QUALITY

In general, the data quality appeared to be quite good. There were, however, a handful of instances where specific hospitals did not report LOS information or patients' age, or they included in their submissions cases that were treatment room visits and not OU stays. There were also instances where, for the same patient, LOS information reported in terms of days conflicted with LOS information reported in hours.

We worked closely with the DOH Hospital and Patient Data Systems staff to address these data quality concerns. They were often able to access additional data files, including Hospital Revenue Center datasets, to complete some hospitals' missing information and verify or exclude select records.

Somewhat surprisingly, the most recent year's data, 2012, was of poorer quality than the previous two years data. In particular, the 2012 file included treatment room data from two hospitals, which were ultimately excluded from the analysis data set, and excluded age and LOS information for a substantial portion of one hospital's records; these were recaptured from the revenue datasets. In the few instances where the LOS reported in hours substantially differed from LOS reported in days, we looked at the total charges to determine which seemed most reasonable. In addition, any records where the average charge per 24 hour day was less than $500 were excluded.

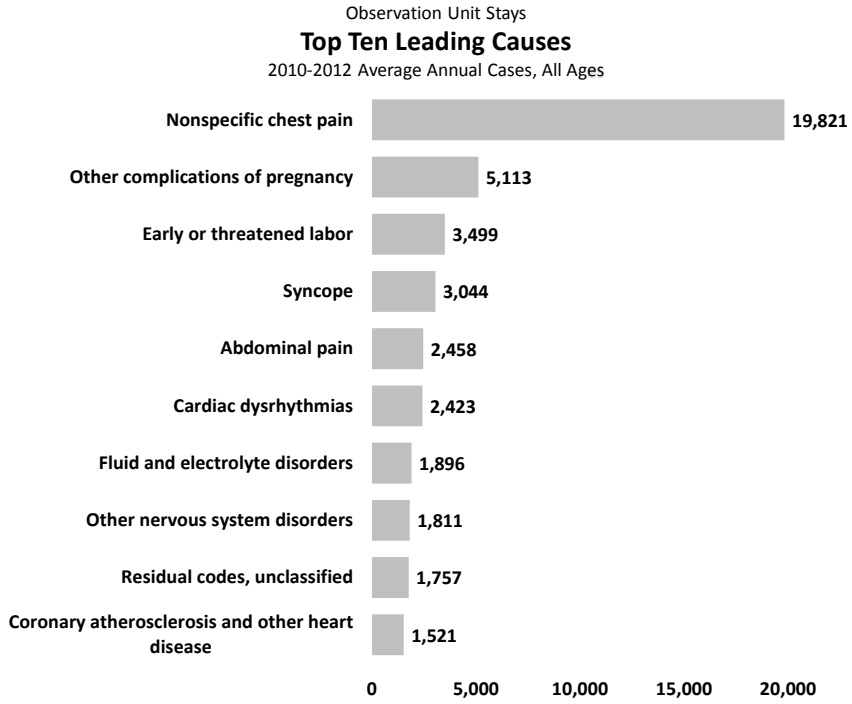
Finally, although LOS was generally based upon the total hours reported for each stay, for slightly less than 3 percent of the cases (8,314) LOS was reported in days only. Of those 3 percent reporting days only, 75 percent were one day stays (6,274), 0.1 percent (7) had a LOS of two or three days, and the remainder (2,033) had stays of four days or longer. All of these days were converted to hours by multiplying them by 24.

After edits and corrections, of the 290,703 records for the years 2010 to 2012 combined, 287,388 (99%) were ultimately used in the analysis. However, analysts currently in possession of OU data sets are encouraged to check with the DOH Hospital and Patient Data Systems staff to be sure they have the most recently corrected files.

## LEADING CAUSES

Hospital OU patient records were re-coded using the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification System (CCS). The CCS groups together conditions that have similar clinical characteristics. These groupings are based upon the patients' primary diagnosis. The ICD-9-CM diagnosis codes included in each CCS category can be found at http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp.

**Figure 1**




As seen in Figure 1, for all ages combined the most common cause for an OU stay was, by and far, non-specific chest pain, a condition for which many OU programs were originally established to address.

The number of OU patients seen for non-specific chest pain, on average 19,821 per year, was nearly four times the number seen for the second leading cause for an OU stay, complications of pregnancy, which averaged 5,113 per year.

The third leading cause was also pregnancy related, early or threatened labor, averaging 3,499 cases per year. However, even in combination with other complications of pregnancy, these two still equaled less than half the number of non-specific chest pain stays.

Syncope, or fainting, was fourth; this condition was only common among elderly patients. Conversely, the fifth leading cause, abdominal pain, was in the top ten for all age groups except newborns and those ages 75 or older.

Cardiac dysrhythmia, an irregular heartbeat, was sixth. Fluid and electrolyte disorders (generally associated with dehydration) were seventh. Other nervous system disorders (typically acute or chronic pain or numbness) were eighth. A "residual codes" group, about half of which related to altered mental states and about a fourth related to suspected maternal or fetal conditions, was ninth. And, coronary atherosclerosis (a leading cause of heart disease deaths) was tenth.

As suggested above, leading causes differed by age, and these differences are shown in detail in Appendix A. There Figures A-1 through A-8 include the ten leading cause for OU stays for eight age categories from newborns to those ages 85 or older; below is a brief summary including Table 1 listing the top two causes by age group. .

Among newborns, acute bronchitis and other upper respiratory infections were the two leading causes for an OU stay.

For children ages one to fourteen, upper respiratory infections and fracture of upper limb were the leading causes.

For ages 15 to 24, pregnancy-related conditions were the two top causes: other complications of pregnancy, and early or threatened labor.

Other complications of pregnancy was also the leading cause for those ages 25 to 44, although it is in this age group where we first see the emergence of non-specific chest pain, running as a close second leading cause.

By ages 45 to 64, non-specific chest pain far outweighs any other leading cause, more than 10 times the second leading cause, syncope.

Non-specific chest pain was also the leading cause for those ages 65 to 74, 74 to 84, and 85 or older. For these age groups the second leading cause was also the same, syncope.

Since the growth in OUs was driven largely by CMS, it is perhaps counter to expectations that the average annual number of non-specific chest pain cases for those ages 45 to 64 was more than 30 percent greater than those ages 65 or older.

In fact, for all conditions combined, those ages 65 or older, which are generally covered by Medicare, constitute only about one-third of all of the OU stays, while those under age 65, and generally not covered by Medicare, make up the remaining two-thirds.

Of the 92 hospitals reporting OU data, 66 had non-specific chest pain as their leading cause. Of the remaining 26, three were pediatric hospitals, and 10 had non-specific chest pain as their second leading cause. Of those remaining 30, 10 had fewer than 1,000 total OU cases per year. The remaining three were Legacy Salmon Creek, Providence Holy Family, and Swedish First Hill, although Swedish First Hill still averaged less than 100 cases per year in any one CCS category.

**Table 1**

Observation Unit Stays

**Top Two Leading Causes by Age Group**

2010-2012 Average Annual Cases by Ages

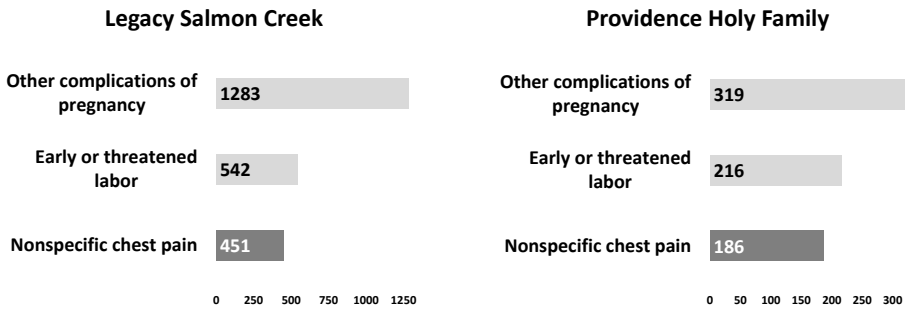
| Age Groups/Leading Conditions | Cases per year | Age group % |
|---|---|---|
| **Newborns - Total** | **1,656** | **100%** |
| Acute bronchitis | 348 | 21% |
| Other upper respiratory infections | 145 | 9% |
| **Ages 1 to 14 - Total** | **4,855** | **100%** |
| Upper respiratory infections | 267 | 5% |
| Fracture of upper limb | 257 | 5% |
| **Ages 15 to 24 - Total** | **9,270** | **100%** |
| Other complications of pregnancy | 2,398 | 26% |
| Early or threatened labor | 1,631 | 18% |
| **Ages 25 to 44 - Total** | **18,990** | **100%** |
| Other complications of pregnancy | 2,695 | 14% |
| Non-specific chest pain | 2,568 | 14% |
| **Ages 45 to 64 - Total** | **27,198** | **100%** |
| Non-specific chest pain | 9,747 | 36% |
| Syncope | 782 | 3% |
| **Ages 65 to 74 - Total** | **13,194** | **100%** |
| Non-specific chest pain | 3,625 | 27% |
| Syncope | 637 | 5% |
| **Ages 75 to 84 - Total** | **11,787** | **100%** |
| Non-specific chest pain | 2,533 | 21% |
| Syncope | 733 | 6% |
| **Ages 85 or older - Total** | **8,632** | **100%** |
| Non-specific chest pain | 1,207 | 14% |
| Syncope | 578 | 7% |

**Figure 2**

Observation Unit Stays

**Top Three Leading Causes at Legacy Salmon Creek and Providence Holy Family**

2010-2012 Average Annual Cases




But Legacy Salmon Creek and Providence Holy Family did average well over one hundred OU cases per year for their three leading OU stays, as seen above in Figure 2.

Contrary to the statewide experience both these hospitals had other complications of pregnancy and early or threatened labor as their leading OU stays. The differences compared to the statewide experience were most pronounced in Legacy Salmon Creek where the two pregnancy-related CCS stays approximately equaled four times the number of non-specific chest pain stays. No marked changes were seen in the year-to-year totals for these conditions and, as was seen statewide, "other current antepartum conditions or complications described elsewhere" (ICD-9-CM 648.93) was the most common primary diagnosis code associated with the other complications of pregnancy stays at this hospital, with "abdominal pain" (ICD-9-CM code 789.0) as the most common secondary diagnosis among those cases.

For Providence Holy Family, the two pregnancy-related CCS stays were almost three times the number of non-specific chest pain stays. Year-to-year totals for all three conditions did increase, although the proportion of the three that were non-specific chest pain dropped from 28 percent in 2010, to 26 percent in 2011, to 24 percent in 2012. The primary and secondary diagnoses here were also the same as seen statewide.

### LENGTH OF STAY – By age and over time

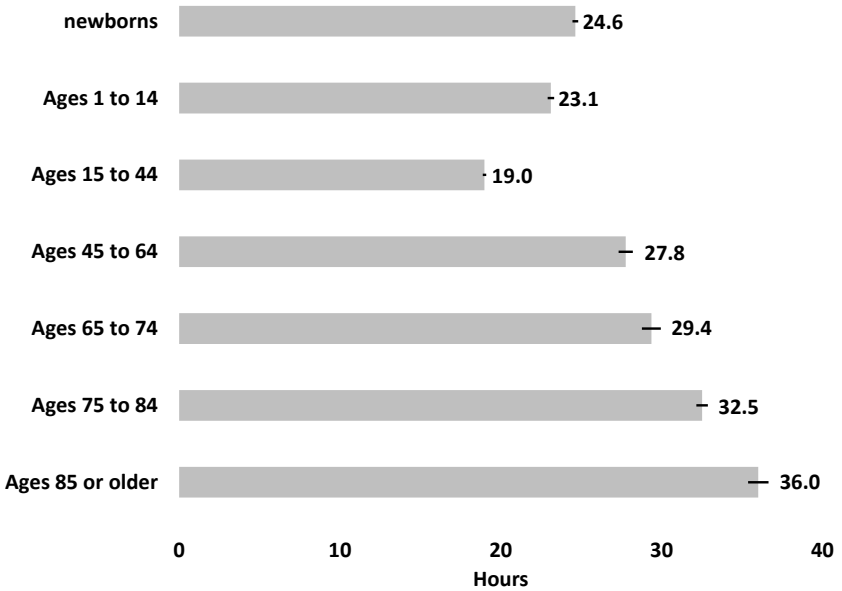
While the overall average LOS was 26.6 hours, Figure 3 shows that the average LOS significantly differed among age groups, with those ages 15 to 45 having the shortest average LOS. From ages 15 to 44 and older there is a continuous increase in the average LOS, with those ages 85 or older having the longest average LOS.

**Figure 3**

Observation Unit Stays

**Average Length of Stay in Hours by Age Groups**

2010-2012 Average LOS with 95% confidence intervals




Broadly grouping OU cases into those under or over age 65, in Figure 4 we see that the average LOS for each year was significantly higher than the average LOS of the previous year. This was true for those ages 65 or older, those under age 65, and for all ages combined. Specifically, for those ages 65 or older there was a 9 percent increase in the average LOS from 2010 to 2012; for those under age 65 there was an 18 percent increase from 2010 to 2012; and, for all ages combined there was a 15 percent increase in average LOS from 2010 to 2012.

One component of these increases in average LOS was the increase in the proportion of cases with a LOS of three days or longer. Although such cases constituted only 6 percent of all OU cases from 2010 to 2012, they are outside the normal LOS expectations for an OU stay, and they are increasing more rapidly than OU stays in general: from 2010 to 2012, there was a 7 percent increase in all OU cases, and a 35 percent increase in OU cases with a LOS of three days or longer.

Even though older OU patients generally have a longer average LOS, increases stays among the elderly did not appear to be the major factor underlying the increase in three day or longer LOS stays. Instead, as Figure 5 suggests, it was the number of OU cases among those under age 65 with three day or longer LOS that had risen more rapidly: from 2010 to 2012 there was a 22 percent increase in three day LOS for those ages 65 and older – and a 52 percent increase for those under age 65. Within the under age 65 group, those ages 15 to 45 and those ages 45 to 64 each had a 55 percent increase from 2010 to 2012 in OU cases with a LOS of three days or longer (not shown).

As Figure 5 also shows, the gap between the older and younger age groups has narrowed in terms of absolute numbers. Similarly, in terms of the percent of all OU cases with a LOS of three days or longer, in 2010, 58 percent were ages 65 or older but, by 2012, only 52 percent were in that age category.

**Figure 4**

Observation Unit Stays

**Average Length of Stay by Year**

2010-2012 Average LOS with 95% confidence intervals

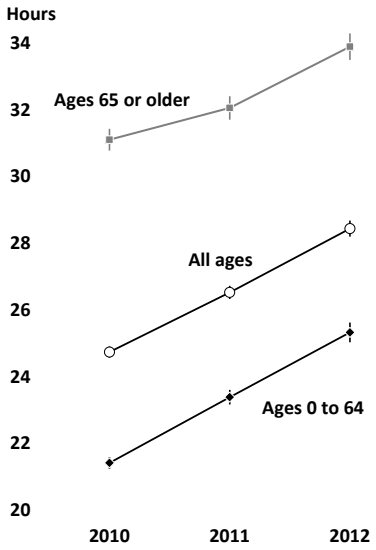
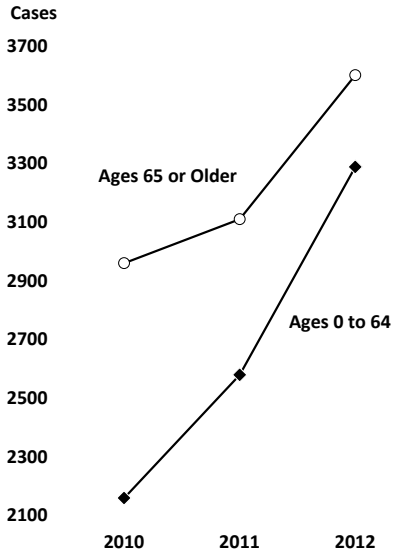



**Figure 5**

Observation Unit Stays

**Three Days or Longer Stays by Year**

2010-2012




## LENGTH OF STAY – By leading causes

Differences in the average LOS by leading causes are shown in Figure 6. Other nervous system disorders, which had ranked ninth in leading causes among all OU stays, ranks first in average LOS, and is significantly longer than any of the other conditions' average LOS. Fluid and electrolyte disorders which had ranked eighth as a leading cause ranks second in average LOS. Abdominal pain, which had ranked fifth in leading causes, ranks third in average LOS.

Somewhat surprisingly, even though LOS, in general, increased with age, that pattern did not readily correspond with these leading causes. That is, the median age, as shown in Figure 7, was not necessarily higher in the longer LOS conditions, although it was lower in the two pregnancy-related ones.

**Figure 6**

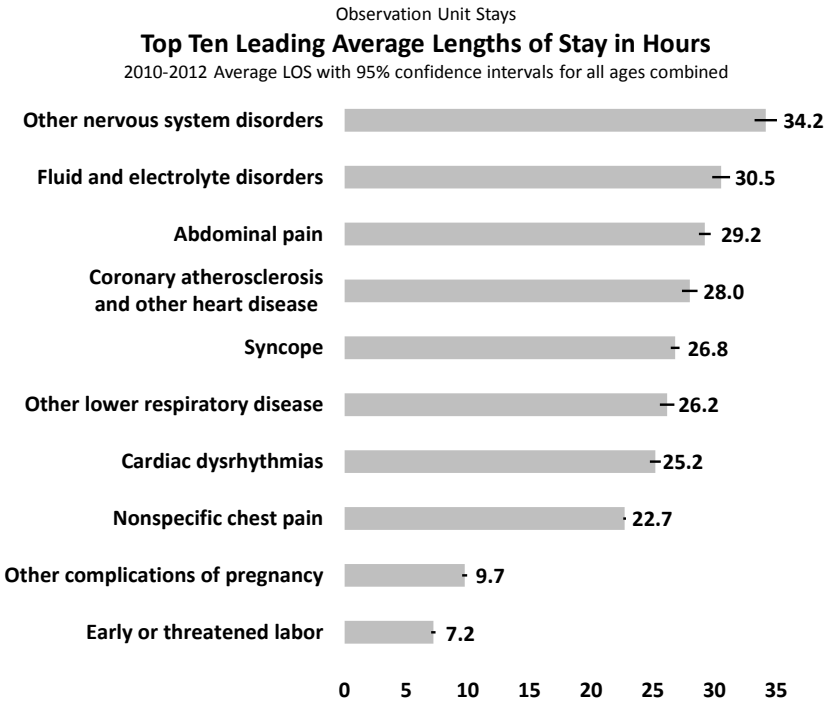
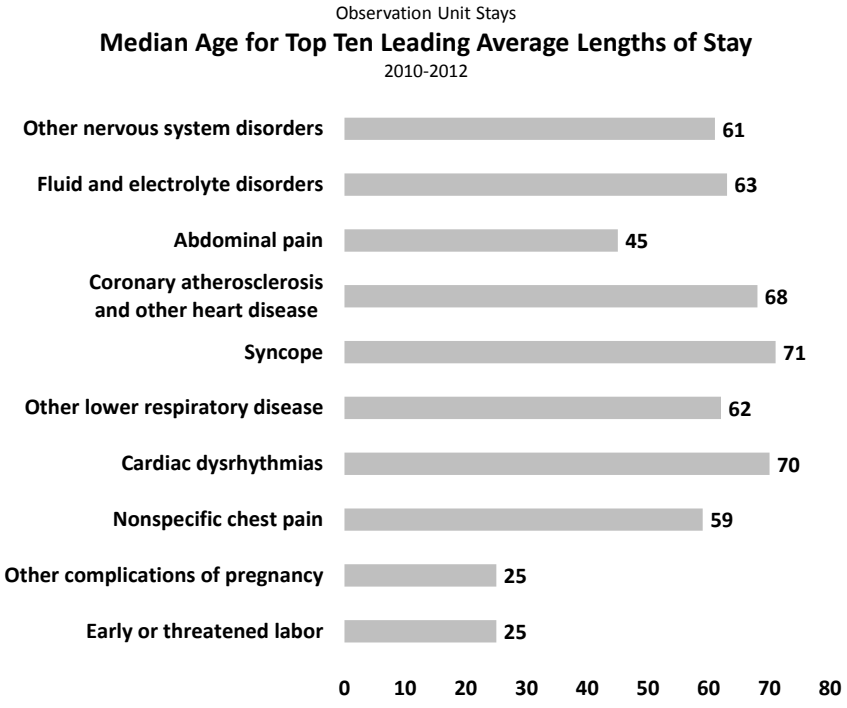



**Figure 7**




Although the three most common conditions, non-specific chest pain, other complications of pregnancy, and early or threatened labor, had the lowest LOS among the top ten, because these three conditions were so much more prevalent than any others, we examined their average LOS by year.

As seen in In Figure 8, the average LOS for non-specific chest pain shows a steady increase, with each succeeding year significantly higher than the preceding one; overall, between 2010 and 2012, the average LOS for this condition increased by 8 percent.

For other complications of pregnancy, there was a non-significant increase in the average LOS between 2010 and 2011, but a marked increase between 2011 and 2012; overall, between 2010 and 2012, LOS increased by 34 percent. For early or threatened pregnancy, there was a non-significant decrease in LOS from 2010 to 2011, but a marked increase between 2011 and 2012; overall, between 2010 and 2012, LOS increased by 25 percent.

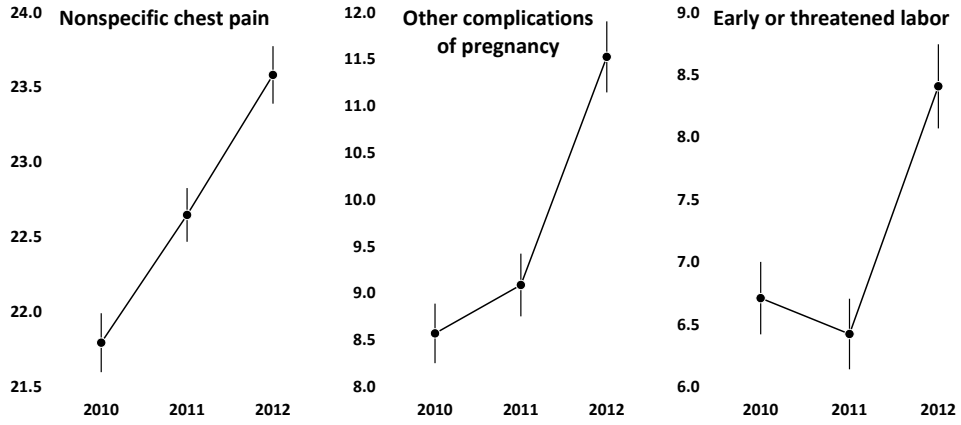
In total, there was slightly less than a 14 percent increase between 2010 and 2012 for these three conditions combined, and slightly more than a 15 percent increase for all other conditions combined.

**Figure 8**

Observation Unit Stays

**Average LOS for Top Three Causes by Year**

2010-2012 Average LOS with 95% confidence intervals




## LENGTH OF STAY – By hospital

Figure 9 shows hospital-specific average LOS for all causes combined. There we see broad variation among the hospitals, with Harborview, Northwest and Virginia Mason having the longest average LOS, and Quincy Valley, Legacy Salmon Creek and Toppenish Community having the shortest.

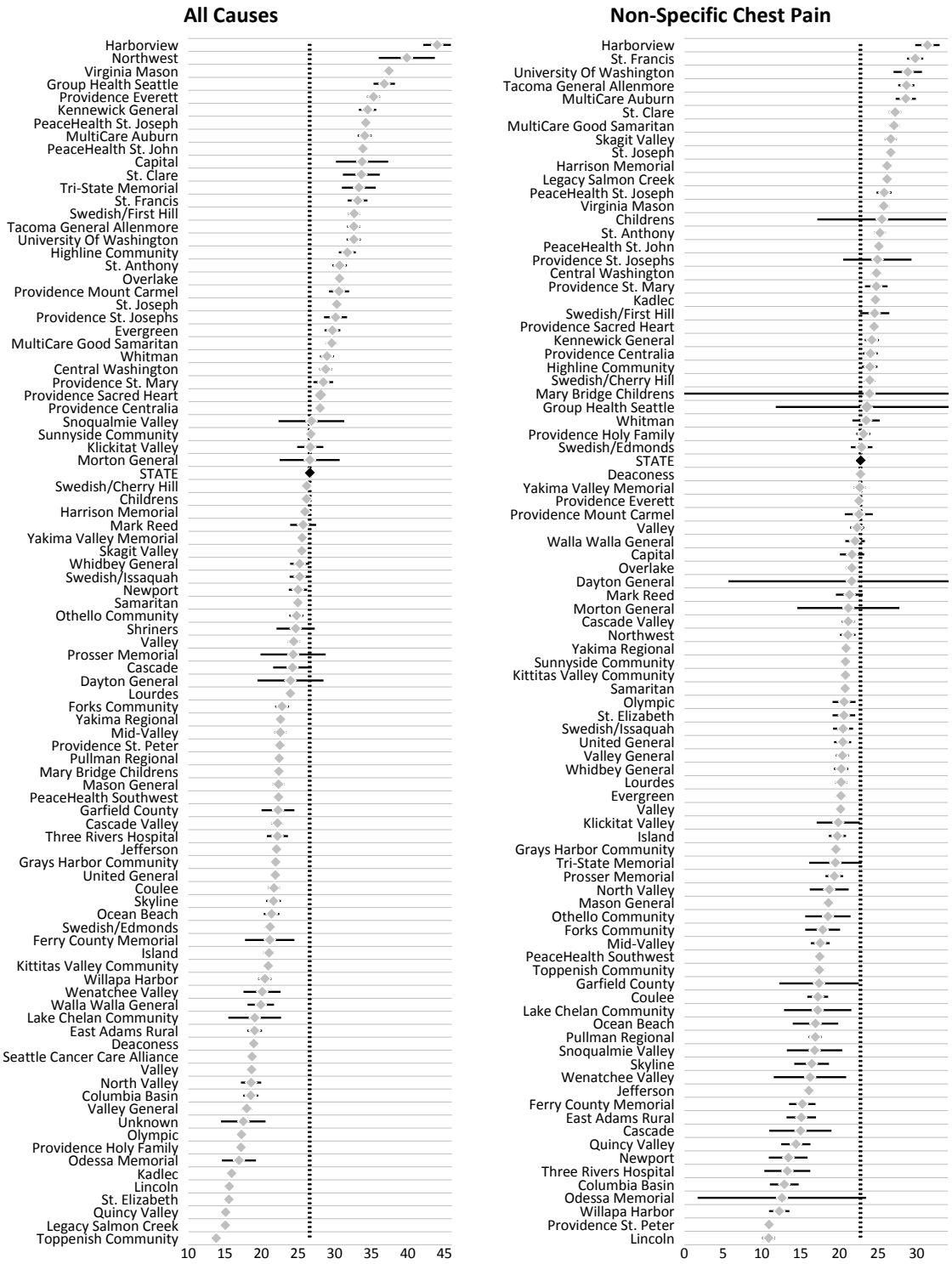
Most notably, the hospitals' average LOS does not appear to cluster around the statewide rate. Instead, we see 29 hospitals with an average LOS that is significantly longer than the statewide average, and 47 hospitals with a LOS that is significantly shorter.

**Figure 9**

**Observation Unit Stays**

## Average LOS for All Causes and Non-Specific Chest Pain by Hospital

**2010-2012 Combined with 95% confidence intervals**



While age and case mix may account for some of the variation seen, severity of illness seems an unlikely factor since more acutely ill patients would presumably be admitted as an inpatient. To account for case mix, Figure 9 also shows hospital-specific average LOS for those cases with non-specific chest pain only. In addition to being the same general condition, there are specific criteria[xviii] outlining the clinical indicators for OU admissions of patients with chest pain; these further assure that the comparisons are appropriate.

Nevertheless, broad variations among the hospitals remain, with Harborview, St. Francis and the University of Washington having the longest average LOS, 31.4, 29.8 and 28.8 hours respectively, and Willapa Harbor, Providence St. Peter and Lincoln having the shortest, 12.2, 10.9 and 10.9 hours. Overall, 21 hospitals show an average LOS for non-specific chest pain that is significantly longer than the statewide average, and 44 have an average LOS that is significantly shorter.

### LENGTH OF STAY – Focused assessment

To assess these variations in OU LOS, we focused on non-specific chest pain, looking at three hospitals with the longest average LOS and having a thousand or more such cases between 2010 and 2012, and three hospitals with the shortest LOS and also having a thousand or more such cases. These are shown in Figure 10.

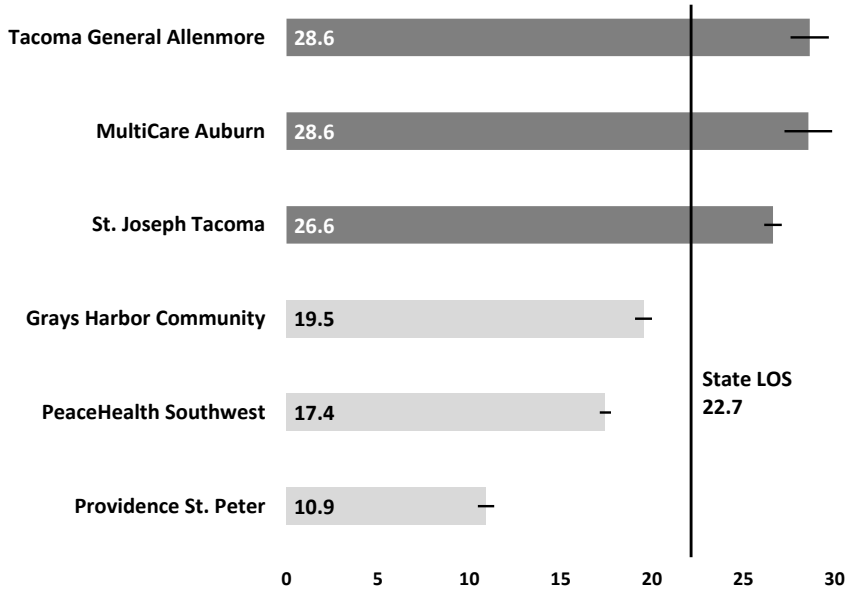
Both Tacoma General Allenmore and MultiCare Auburn had the longest non-specific chest pain stays with an average LOS of 28.6 hours each. Providence St. Peter had the shortest average LOS, 10.9 hours. There is more than a two-and-a-half fold difference between these hospitals' average LOS for the same condition.

**Figure 10**

Observation Unit Stays

**Top Three High and Low Hospitals Length of Stays for Non-Specific Chest Pain**

2010-2012 Average LOS with 95% confidence intervals for hospitals with 1,000 or more non-specific chest pain cases



For all these cases the primary diagnoses fell within the general category of chest pain (ICD-9-CM 786.5), with the most common sub-categories being "other chest pain" (ICD-9-CM 786.59) followed by "chest pain, unspecified" (ICD-9-CM 786.50); together these accounted for 97 percent of the primary diagnoses for the six hospitals. For shorter-stay Grays Harbor Community and longer-stay St. Joseph Tacoma, a slightly more specific sub-category, "precordial pain" (ICD-9-CM 786.51), was listed for 6 percent and 7 percent of the cases respectively.

Ninety-four percent of the cases reported a secondary diagnosis, with "unspecified essential hypertension" (ICD-9-CM 401.9) being the most common: 43 percent overall, with a high of 51 percent at shorter-stay Providence St. Peter, and a low of 30 percent at shorter-stay Grays Harbor Community. Second most common was "chronic ischemic heart disease, unspecified" (ICD-9-CM 414.9), with 19 percent overall, and a high of 30 percent at Providence St Peter, and a low of 8 percent at longer-stay Tacoma General Allenmore.

The third most common secondary diagnosis was "esophageal reflux" (ICD-9-CM 530.81), 14 percent overall, with a high of 26 percent at Grays Harbor Community, and a low of 8 percent at Tacoma General Allenmore. Tacoma General Allenmore also reported proportionately more cases with "diabetes mellitus without mention of complication" (ICD-9-CM 250.00) as a secondary diagnoses: 21 percent versus 11 percent for all six hospitals combined. In general, Grays Harbor Community had the highest average number of diagnoses listed, 10.0; shorter-stay PeaceHealth Southwest had the lowest, 4.4.

Cases within the shorter-stay hospitals tended to have more procedures reported.[2] That is, the three longer-stay hospitals, plus shorter-stay PeaceHealth Southwest, reported that only 9 percent or fewer of their cases had a primary procedure. However, the remaining two shorter-stay hospitals, Grays Harbor Community and Providence St. Peter, reported 76 percent and 21 percent of their cases as having a procedure. For Grays Harbor Community, 29 percent of their cases had a cardiac stress test (ICD-9-CM 89.4) and an additional 24 percent had a radioisotope scan (ICD-9-CM 92.0) listed as a primary procedure; for Providence St. Peter, 18 percent of their cases also had cardiac stress test as their primary procedure.

Looking at discharge disposition, for all six hospitals, and for all three years, only one case was admitted as an inpatient to the hospital where the OU stay occurred, and that was at Providence St. Peter. In fact, the most common discharge disposition was a routine discharge home: 97 percent for all six hospitals combined, with a high of 98 percent at Providence St. Peter, and a low of 94 percent at Tacoma General Allenmore. The second leading discharge disposition category was patient left against medical advice: 1.5 percent for all six hospitals, with a high of 2.2 percent at Tacoma General Allenmore, and a low of 1.1 percent at PeaceHealth Southwest.

Looking at age differences, Providence St. Peter had the highest proportion of patients who were ages 65 or older, 38 percent, and longer-stay MultiCare Auburn had the lowest proportion, 28 percent. Providence St. Peter also had the highest proportion of patients ages 75 or older, 20 percent, and MultiCare Auburn also had the lowest, 12 percent. As Figure 11 indicates, for the state as a whole the average LOS increases with age.

[2] Based upon ICD-9 procedures reported in the standard public file; it may be possible that additional procedures were reported in the revenue files using CPT and HCPCS codes.

Finally, looking at source of admission, the overwhelming number came from a "non-health care facility point of origin," a clinic or physician's office, or the emergency department, with one minor exception: St. Joseph Tacoma reported that 7 percent (224) of their admissions were transfers from another hospital; for all six hospitals combined such admissions only equaled 2 percent.[3] There were no admissions from a nursing home in MultiCare Auburn or in Tacoma General Allenmore, and only one such admission in St. Joseph Tacoma. There were also no admissions from a nursing home at Grays Harbor Community, but five were admitted to Providence St. Peter (0.2%), and nineteen to PeaceHealth Southwest (0.4%).

In summary, the three hospitals with shorter LOS for non-specific chest pain tended to treat patients with similar diagnoses as those treated in hospitals with longer LOS, tended to have more diagnostic procedures performed, and their patients tended to be older. Taken as a whole, the OU data available does not appear to provide any additional information that might explain why we observed such pronounced differences in LOS for non-specific chest pain among these six hospitals.

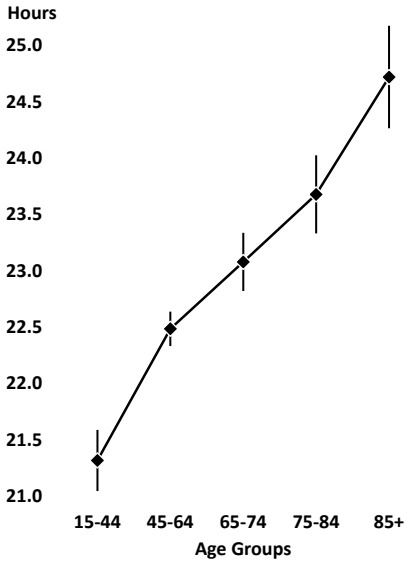
**Figure 11**

Observation Unit Stays

**Non-Specific Chest Pain**

**Average Length of Stay by Age**

2010-2012 with 95% confidence intervals




[3] Of those transfers to St. Joseph Tacoma, 97 percent were elective and their average LOS for non-specific chest pain, 23.1 hours, was shorter than St. Joseph's overall LOS for non-specific chest pain.

### INPATIENT AND OBSERVATION UNIT STAYS FOR NON-SPECIFIC CHEST PAIN

Since there are concerns over appropriately admitting patients to either the OU or to an inpatient unit – with potential financial implications for providers, patients and payers – we turned again to non-specific chest pain patients, and compared the proportion of those cases treated within each hospital's care setting, i.e., inpatient or OU.

We began by identifying each hospital's inpatients from 2010 to 2012 with non-specific chest pain that had a routine discharge and, following the guidance RAC audits use in assessing the appropriateness of short stay admissions, stayed for two days or less. We further excluded those inpatient cases with any procedures unless they were diagnostic cardiac stress tests or radioisotope scans. The remaining inpatients, we surmised, could have been potential candidates for the OU.

Then, for each hospital, we added together those inpatient cases meeting our criteria with the hospital's OU non-specific chest pain cases, and computed the percent each setting represented. Statewide there were 10,145 inpatients with non-specific chest pain who met our inpatient criteria, and 56,862 OU patients with non-specific chest pain, for a combined total of 67,007; hence, 15 percent were inpatients and 85 percent were OU patients.

Looking first at the six hospitals discussed in the previous section who had had longer or shorter OU stays for non-specific chest pain (see Figure 10), we found that the three hospitals having shorter OU stays also had a lower proportion of inpatient admission of two days or less. Conversely, the three hospitals that had longer OU stays had a higher proportion of inpatient admission of two days or less.

Specifically, for shorter-stay PeaceHealth Southwest, only 11 percent of their non-specific chest pain cases were inpatients with stays of two days or less; for Providence St. Peter, only 6 percent were inpatients; and, for Grays Harbor Community, a mere 1 percent. Conversely, for longer-stay Tacoma General Allenmore, 36 percent of their non-specific chest pain cases were inpatients with a LOS of two days or less; for St. Joseph Tacoma, 19 percent; and for MultiCare Auburn, 15 percent, the same as the statewide percent.

These findings dispelled our concern that the three hospitals with shorter OU stays for non-specific chest pain may have had a high proportion of two-day inpatient stays, and that only the shortest LOS cases were being admitted to the OU.

Looking more broadly, we next identified those hospitals with a thousand non-specific chest pain cases or more that fell into the top three and bottom three in terms of the percent of those cases that were inpatients. Grays Harbor Community with its 1 percent was, once again, among the lower three, together with Providence Everett, where 2 percent of its total cases meeting our criteria were inpatients, and PeaceHealth St. John, where 4 percent were inpatients. MultiCare Good Samaritan, where 60 percent of its non-specific chest pain patients meeting our criteria were inpatients, together with St. Clare, at 48 percent, and St. Francis, at 46 percent, were highest. These are shown in Figure 12.

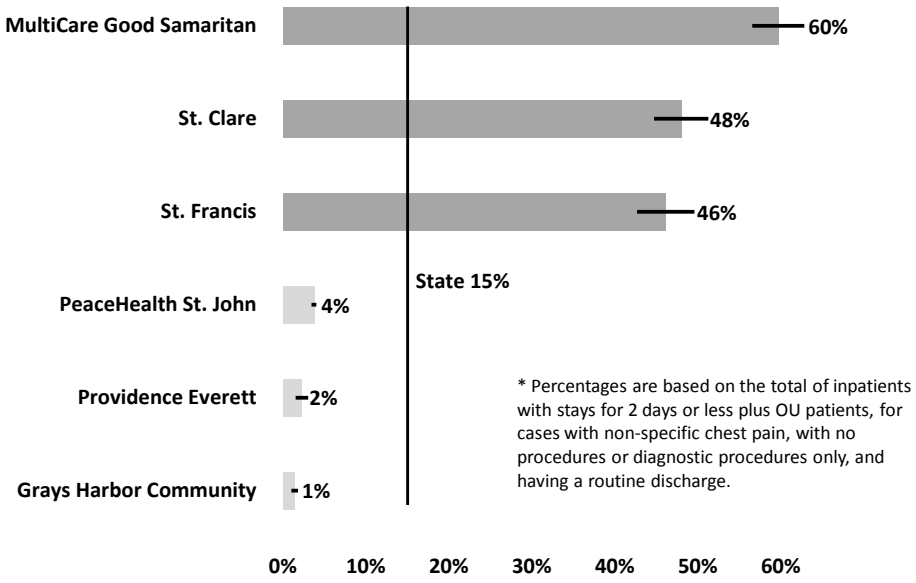
The primary diagnoses for these cases were "other chest pain" (ICD-9-CM 786.59) followed by "chest pain, unspecified" (ICD-9-CM 786.50), and then "precordial pain" (ICD-9-CM 786.51). This order was true for each hospital and within each setting.

**Figure 12**

Observation Unit and Inpatient Stays

**Inpatients as a percent* of inpatient and OU stays for Non-Specific Chest Pain**

2010-2012 short-stay inpatients and observation unit stays combined




For the secondary diagnosis, hypertension-related diagnoses (ICD-9-CM 401) were the most frequent in four of the six hospitals. For high-inpatient MultiCare Good Samaritan and low-inpatient Grays Harbor Community, it was the second most frequent secondary diagnosis, and chronic ischemic heart disease-related diagnosis (ICD-9-CM 414) was first. Chronic ischemic heart disease-related conditions were second leading secondary diagnosis for the remaining four hospitals.

For the OU cases, Grays Harbor Community had the highest average number of diagnoses reported, 10.0, and high-inpatient St. Francis had the fewest, 7.0. For inpatient cases, Grays Harbor Community also had the highest average number of diagnoses reported, 11.1, and low-inpatient PeaceHealth St. John had the fewest, 7.9.

Among the six hospitals, high-inpatient St. Clare had the lowest proportion of patients ages sixty-five or older for inpatients and OU cases combined, 20 percent. For inpatients-only St. Clare also had the lowest proportion that was ages 65 or older, 24 percent.

Conversely, low-inpatient PeaceHealth St. John had the highest proportion of patients ages 65 or older for inpatients and OU cases combined, 41 percent. Grays Harbor Community had the highest proportion of inpatients-only ages 65 or older, 55 percent, although the actual number of inpatient cases there was less than 100; low-inpatient Providence Everett, with a higher volume, had the second highest percent of older patients, 51. PeaceHealth St. John was third highest.

Briefly put, the three hospitals with the higher proportion of inpatient cases – MultiCare Good Samaritan, St. Clare and St. Francis – had a younger case mix than the three hospitals with the lower proportion of inpatient cases. This was true for inpatients and OU patients combined, as well as for inpatients only. The diagnoses were similar for all six hospitals, and to further reiterate, the only procedures performed were diagnostic. Based upon these data, it is unclear why

there would be such a wide difference between the top and bottom three hospitals in the settings chosen to care for their non-specific chest pain patients.

## OBSERVATION UNIT DISCHARGES TO NURSING HOMES

As noted earlier, Medicare inpatients who have a hospital stay of three days or longer and are subsequently discharged to a nursing home will not be charged for their nursing home stay; CMS will pay for it. However, Medicare OU patients who have a hospital stay of three days or longer and are subsequently discharged to a nursing home will have to pay for that nursing home care – on their own. This can be financially devastating, and certainly emotionally distressing, for patients and their families at a particularly vulnerable time.

From 2010 to 2012 there were 2,160 cases ages 65 or older that had an OU stay of three days or longer, and were subsequently discharged to a nursing home. None of those cases had been admitted from a nursing home. For 2010 to 2012 combined, as well as for each individual year, this equaled 19 percent of all OU patients ages 65 or older who had a three day LOS. Between 2010 and 2012, the number of such cases increased by 20 percent, from a low of 663 in 2010 to a high of 795 in 2012.

Among these cases, increased age appeared to increase the risk of being discharged to a nursing home. For those ages 65 to 74, 13 percent of these OU cases with a LOS of three days or longer were discharged to a nursing home; for those ages 75 to 84, 18 percent were discharged to a nursing home; and, for those ages 85 or older, 23 percent were discharged to a nursing home.

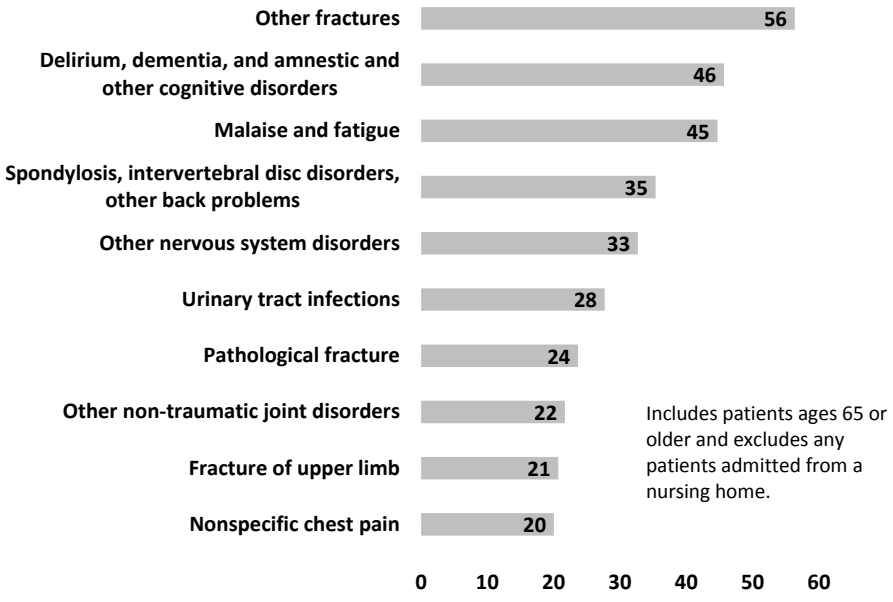
As Figure 13 suggests, no one condition overwhelmingly stands out as a leading cause associated with these discharges. Broadly, however, two larger categories seem to capture eight of the 10: Bones and joints (e.g., fractures, back problems and joint disorders), and mental states (e.g., delirium/dementia, malaise/fatigue and other nervous system disorders). Urinary tract infections and non-specific chest pain are the remaining two.

**Figure 13**

Observation Unit Stays

**Top Ten Conditions in OU Patients Discharged to a Nursing Home after 3+ day LOS**

2010-2012 annual average cases



Among the hospitals assessed, the top two, Providence Everett, averaging 100 cases per year, and PeaceHealth St. Joseph, averaging 71 cases per year, together equaled 24 percent of all such cases. For each year, Providence Everett was the leading hospital in this category, while PeaceHealth St. Joseph was third leading hospital in 2010 and second in 2011 and 2012. (See Appendix C for the average annual number of these cases for all hospitals.)

Although those 85 or older were generally at higher risk, these two hospitals' cases were not disproportionately older. At Providence Everett 42 percent of these cases were 85 or older, and at PeaceHealth St. Joseph 41 percent were 85 or older; statewide 46 percent of such cases were 85 or older.

Even broadening the age category to those 75 or older did not appear to account for the high number of discharges to nursing homes. At Providence Everett 78 percent and at PeaceHealth St. Joseph 75 percent of the cases were in this age category. Statewide, the percent was, again, higher at 82.

Some differences were seen in the leading causes at the top two hospitals compared to the state as a whole. For PeaceHealth St. Joseph the leading cause for these cases was delirium, dementia, and amnestic and other cognitive disorders, at 11 percent; this condition was the second leading cause statewide at 8 percent. For Providence Everett the leading cause for these cases was malaise and fatigue at 13 percent; this condition was the third leading cause statewide at 6 percent.

The second leading cause at both PeaceHealth St. Joseph and Providence Everett was other fractures, at 10 percent and 7 percent respectively; this condition was the leading cause statewide at 8 percent.

Nevertheless, it is unclear if these differences in leading causes explains why patients at these two hospitals who are ages 65 or older would be more apt to have an OU stay of three days or longer and, concurrently, more apt to be discharged to a nursing home.

### OBSERVATION UNIT DEATHS

Although none of the literature reviewed discussed patients discharged deceased from the OU, we identified 479 such cases between 2010 and 2012.Working with the DOH Hospital and Patient Data Systems staff, we confirmed that those deaths had occurred in the OU by spot checking cases with the hospitals.

We then looked at the nine diagnosis codes included in the standard CHARS file, as well as the additional 16 diagnosis codes included a supplemental CHARS files, and identified those cases that reported a Do Not Resuscitate order or DNR (ICD-9-CM V49.86), or an encounter for palliative care (ICD-9-CM V66.7). In doing so, we also identified 20 cases whose only diagnoses listed were for organ donations (V59). Excluding those cases with a DNR, palliative care or organ donation resulted in a remainder of 200 deaths in the OU from 2010 to 2012 without any of those potentially explanatory codes.

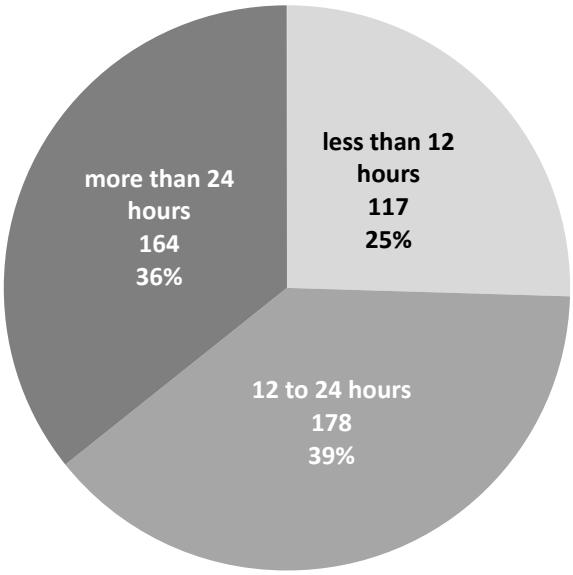
Twenty-nine of those cases came from PeaceHealth St. Joseph, the most from any single institution. We contacted the hospital and were told that although they had not reported it in their CHARS submissions, the medical records for those cases did indeed indicate that there were DNR orders and/or the provision of palliative care services for all those deaths. We suspect that all the other deaths reported to CHARS without those codes likely had those orders or services in the medical records but were inadvertently omitted with their CHARS submissions.

**Figure 14**

**Observation Unit Stays**

**OU Deaths by Length of Stay**

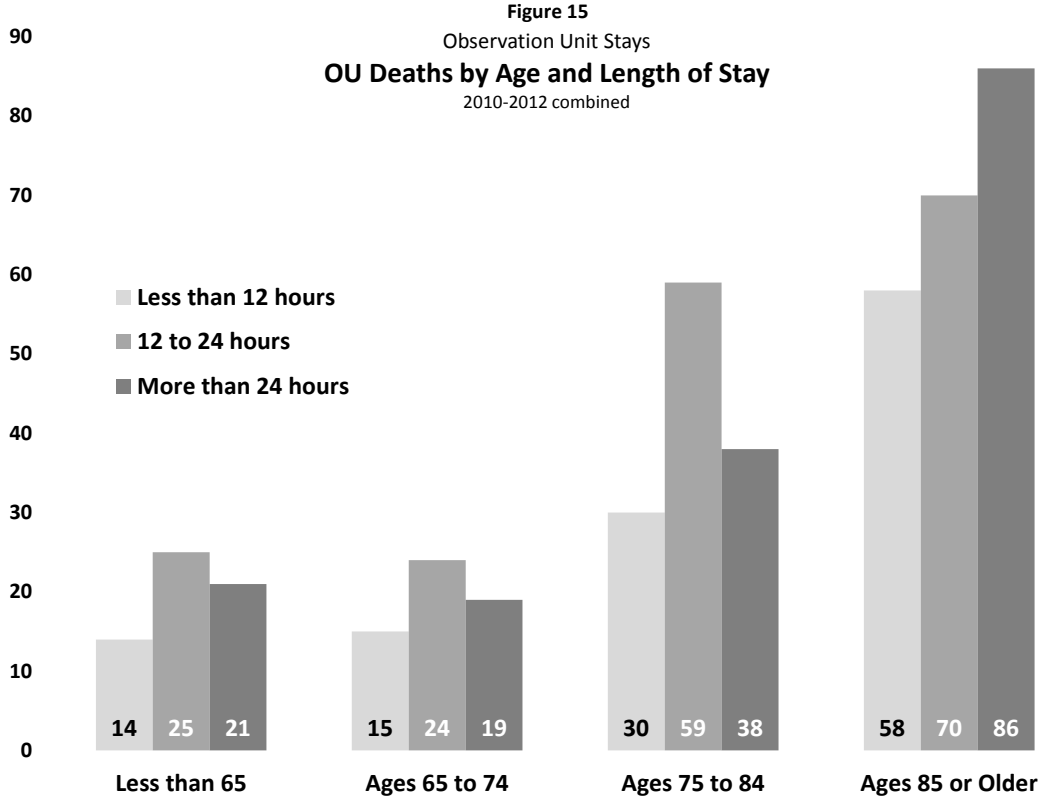
**2010-2012 combined**




In Figure 14 the deaths are grouped by LOS categories. Among these deaths, 25 percent occurred in less than twelve hours of admission; 39 percent within 12 to 24 hours of admission; and, the remaining 36 percent died more than 24 hours after admission.

As might be expected, most of the deaths occurred among elderly patients, particularly those ages 85 or older. As seen in Figure 15, for that age group, most deaths occurred longer than 24 hours after admission. For the remaining age groups, however, most deaths occurred between 12 and 24 hours of admission.

**Figure 15**
Observation Unit Stays
**OU Deaths by Age and Length of Stay**
2010-2012 combined




Eleven conditions (two were tied for tenth) constituted 53 percent of all the deaths occurring in the OU. For those conditions the majority of the deaths occurred among patients ages 85 or older with one exception, cancer of the bronchus or lung, which ranked sixth overall; most of those deaths were among patients ages 65 to 74 and ages 75 to 84.

For the most common condition, acute cerebrovascular disease, two-thirds of the deceased were ages 85 or older. For that age group, and for all age groups combined, most of those deaths occurred between 12 and 24 hours of admission, although the differences by LOS were slight: 15 deaths for all ages occurred in less than 12 hours of admission; 24 deaths were between 12 and 24 hours; and, 20 deaths occurred after 24 hours.

Similarly, for the second leading cause, respiratory failure, most deaths occurred between 12 and 24 hours, although again, the differences were slight: 13 deaths in less than 12 hours of admission; 18 between 12 and 24 hours; and, 11 after 24 hours. Figure 16 shows these deaths by age groups; Appendix E shows deaths by age and LOS.

**Figure 16**
Observation Unit Stays
**OU Deaths By Leading Causes and Age**
2010-2012 combined

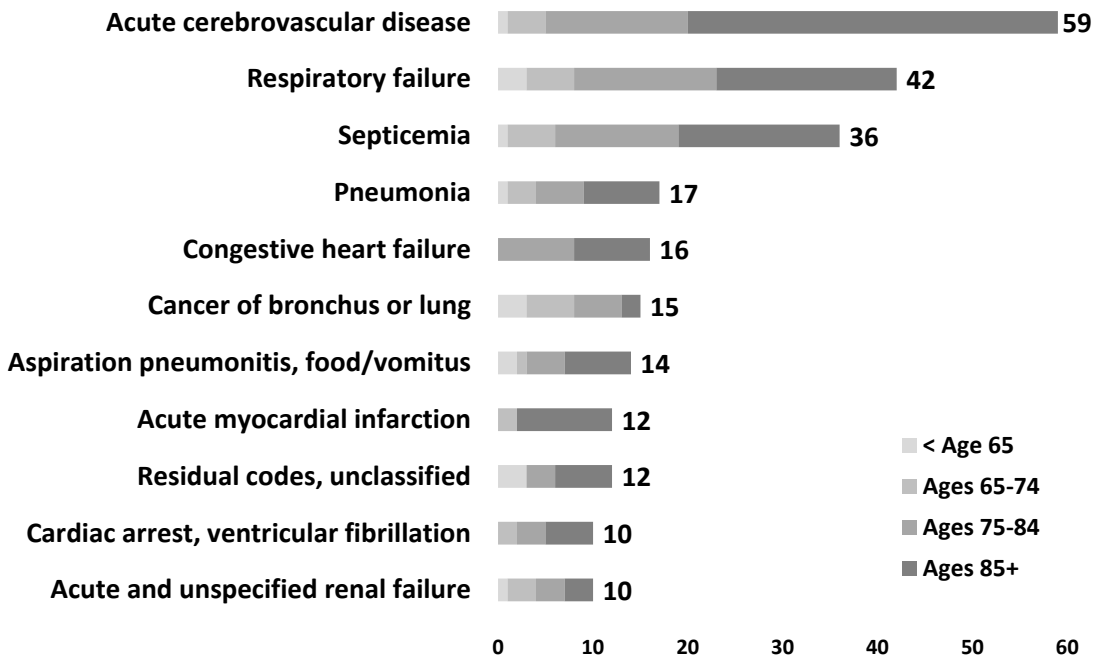
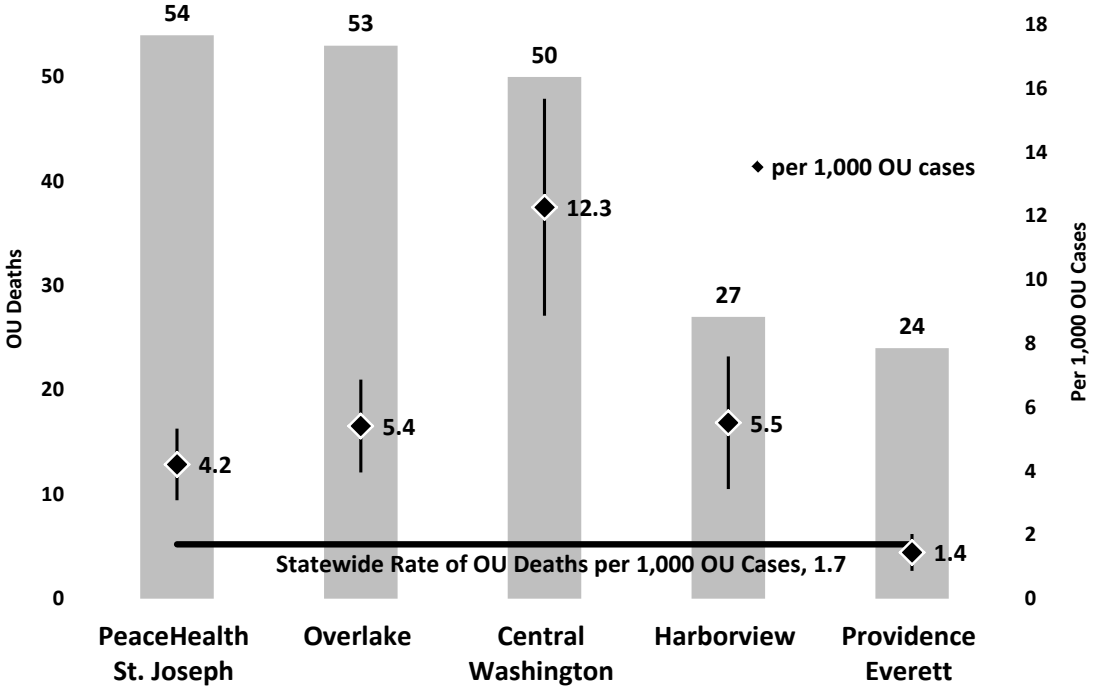



**Figure 17**
Observation Unit Stays
**OU Deaths and Death Rates by Hospital**
2010-2012 combined



In Figure 17 the five hospitals with the most deaths in the OU are shown together with the death rate per 1,000 OU cases. From that figure, PeaceHealth St. Joseph, Overlake and Central Washington hospitals are each seen to have 50 or more OU deaths between 2010 and 2012.

While the rates for those three hospitals, as well as for Harborview Medical Center, are significantly higher than the statewide rate, the rate at Central Washington is significantly higher than the other four hospitals' rates. The rate at Providence is slightly lower than, but not significantly different from, the statewide rate.

Even if all these deaths were symptomatic terminal patients seeking palliative care and/or having a DNR, it is unclear if the OU was the most appropriate setting for their care. Perhaps these data indicate a greater need for hospice care services, perhaps they indicate a need for better triaging, perhaps the OU is, in fact, an appropriate setting for their care, or perhaps there are some other factors yet to be identified.

For these finding, and for all the other findings throughout this report, it should be noted that it is difficult to fully ascertain from administrative data alone what the appropriate level of care for an individual patient should be.

## CONCLUSIONS

Consistent with the origins of OU programs, non-specific chest pain was by far the leading cause for OU stays. The majority of those stays, as well as the majority of all OU stays, was among patients under age 65. Other leading causes for the under 65 age group were pregnancy related conditions. For the over 65 patients, in addition to non-specific chest pain, syncope was the second most common condition seen in OU patients, followed by cardiac dysrhythmias.

In general, this rank order of conditions also held true for individual hospitals, although we did note instances where pregnancy-related conditions outweighed non-specific chest pain stays.

We also saw that LOS varied by age with older OU patients tending to have longer stays. We saw, too, that LOS varied by condition, with conditions generally more common among the elderly having the longer LOS, although not always.

In addition, we noted that the average LOS was increasing over time; that stays of three days or longer were increasing; and, while these increases in average LOS were seen for all age groups, they were climbing faster among those under age 65.

Pronounced variations were seen among hospitals in their average LOS. This was true for all conditions combined and for the one condition we focused-in on, non-specific chest pain. Looking at age, diagnoses and procedures among high and low LOS hospitals, we could not identify any factors in the data that might explain these variations.

Pronounced variations were seen, too, in the choice of settings for treating non-specific chest pain patients. Some hospitals seemed more apt to care for those patients in the OU, others more apt to care for them in an inpatient unit. Here, too, in comparing select hospitals we could not identify any factors that might explain these variations.

Similarly, pronounced variations were seen in the number of patients ages 65 or older who had a LOS of three days or longer and were discharged to a nursing home. Unlike inpatients, these OU patients would not have their nursing home stays paid for by Medicare, and thus could face steep long-term care costs. Again, we could not identify any factors in the data that might explain these variations.

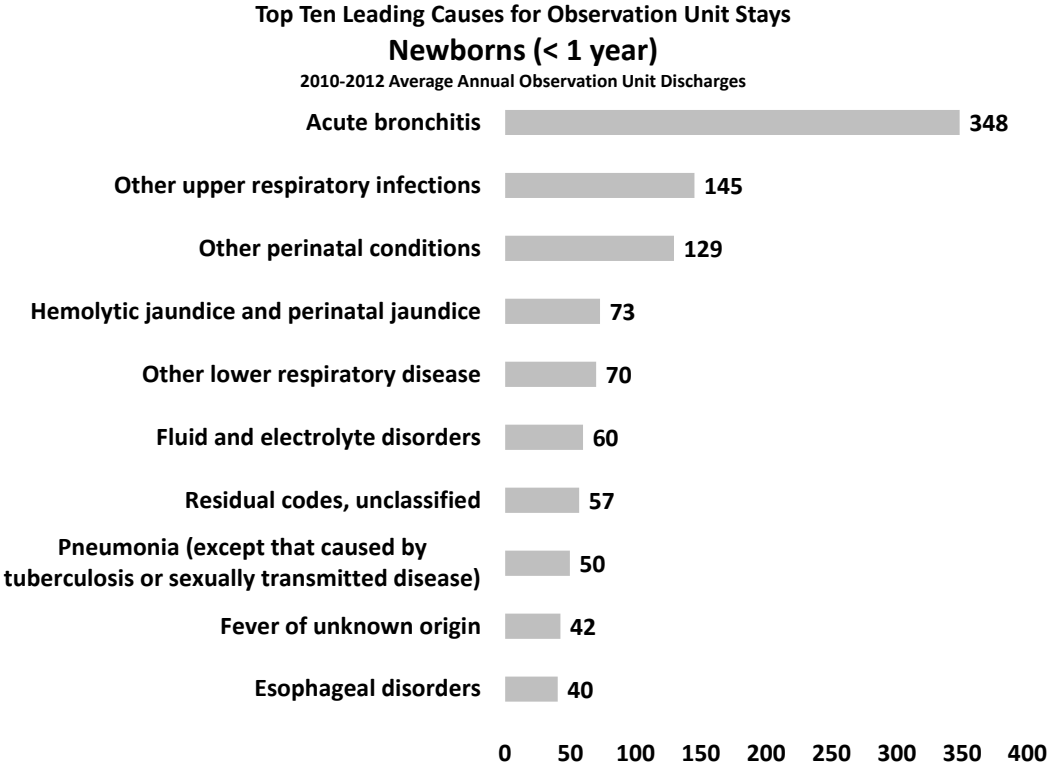
Finally, we saw that a number of deaths occurred in the OU. This was somewhat surprising given the general purpose for OU stays, but it appeared as though a substantial portion of those deaths were associated with palliative care or DNRs. We did, however, highlight the five hospitals with the highest number of deaths and noted that the rates in four of those institutions were significantly higher than the statewide rate.

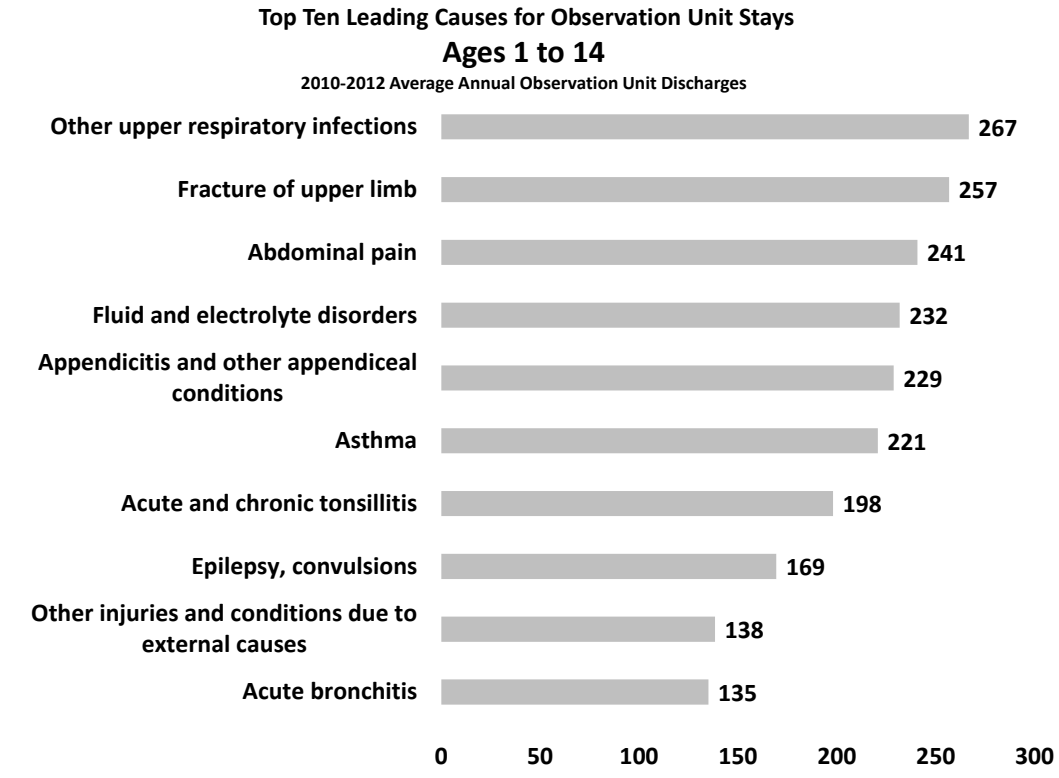
We noted, too, that when we contacted one hospital with the highest number of total deaths and the highest number of deaths that did not include coding for a DNR or for palliative care, we were told that those services or advanced directives were reported in the medical records but had not been included in their data submissions

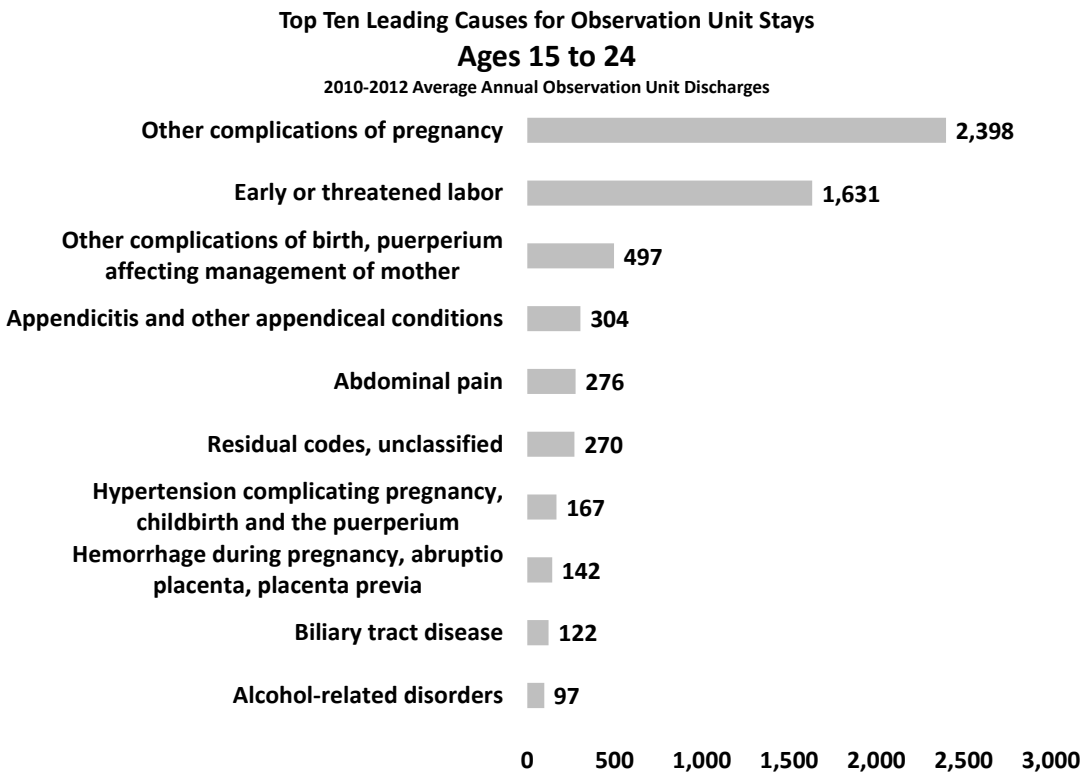
Overall, however, we found the data quality to be generally good, although we did note the need to correct, exclude and append some information. Our thanks go out to the DOH Hospital and Patient Data Systems staff for their assistance in that process.

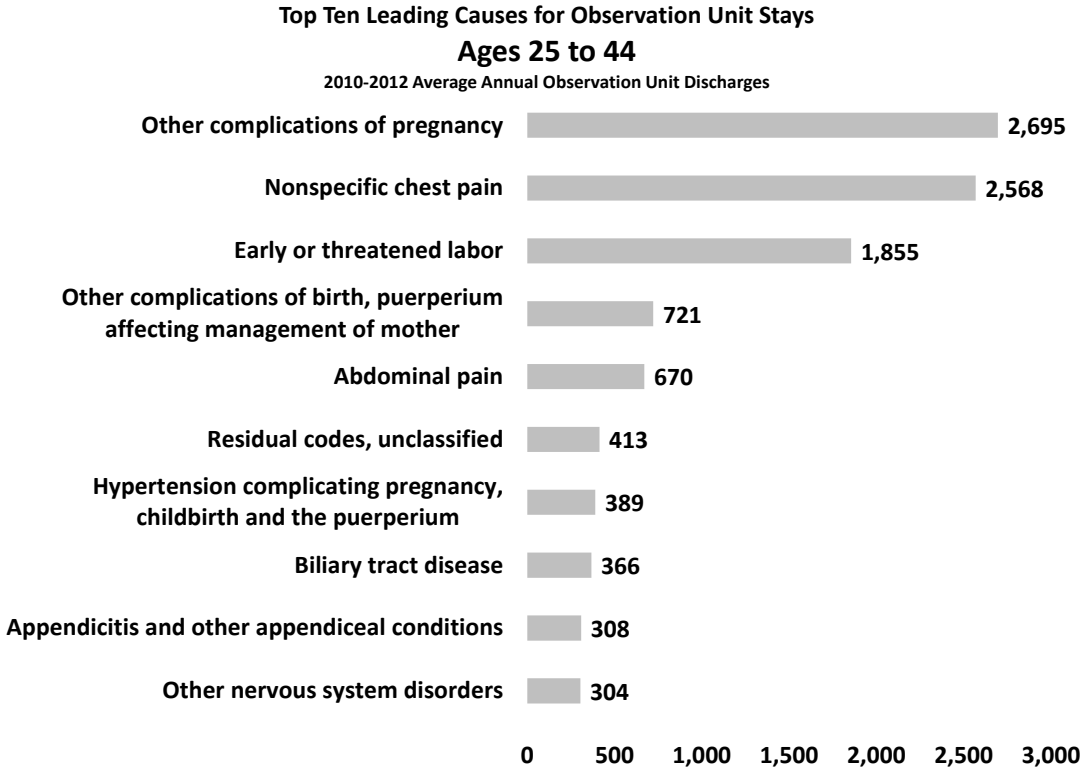
Most of all, we found that the OU data provide an additional perspective on a growing sector of the healthcare system that can, potentially, have substantial financial implications for all involved. We believe, too, that these data can appreciably enhance our understanding of health care utilization, quality of care and underlying need, and recommend that they be included in ongoing public health assessments and health care research analyses.

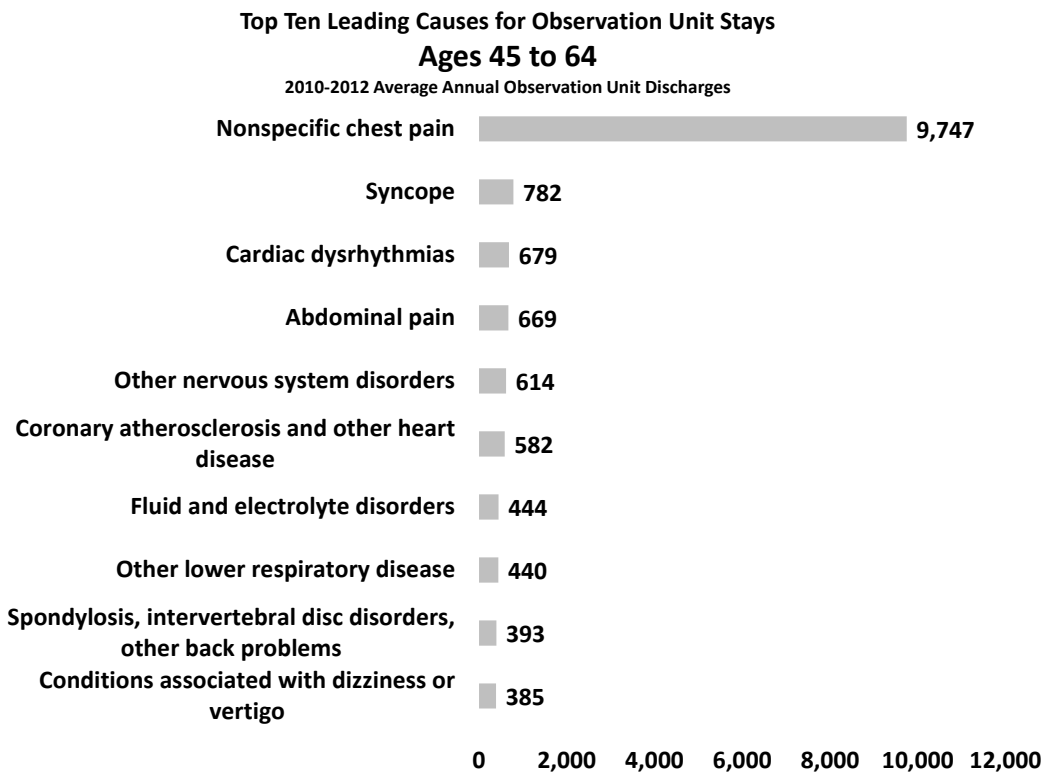
## APPENDIX A: LEADING CAUSES BY AGE GROUPS

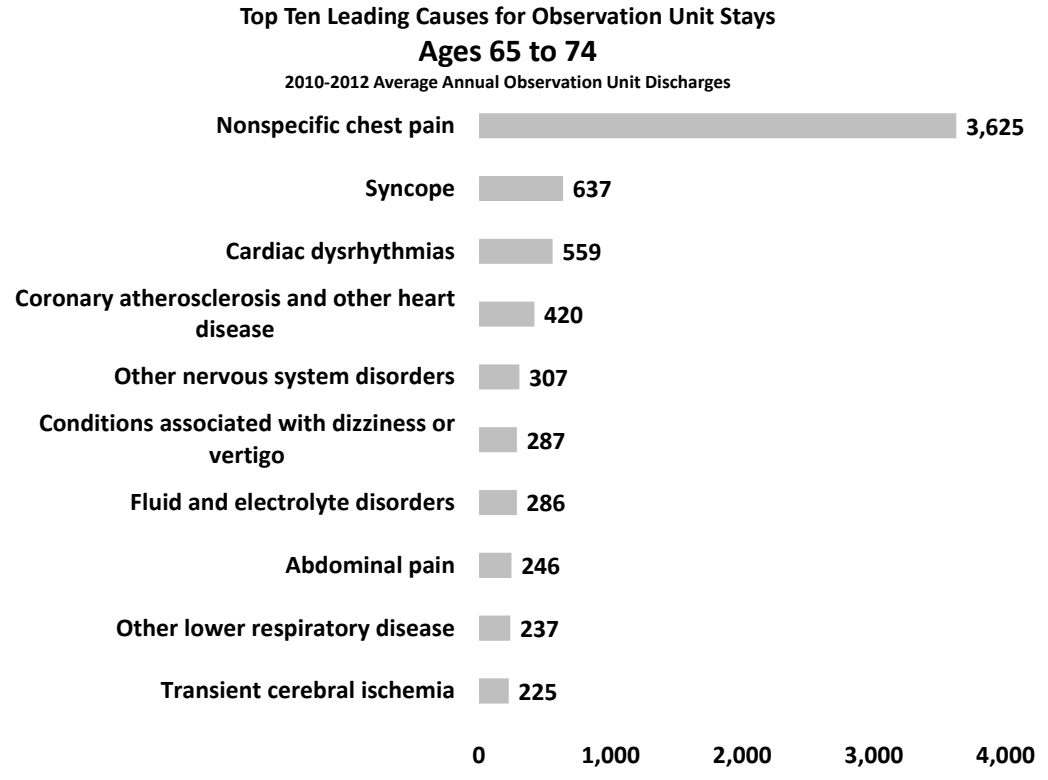


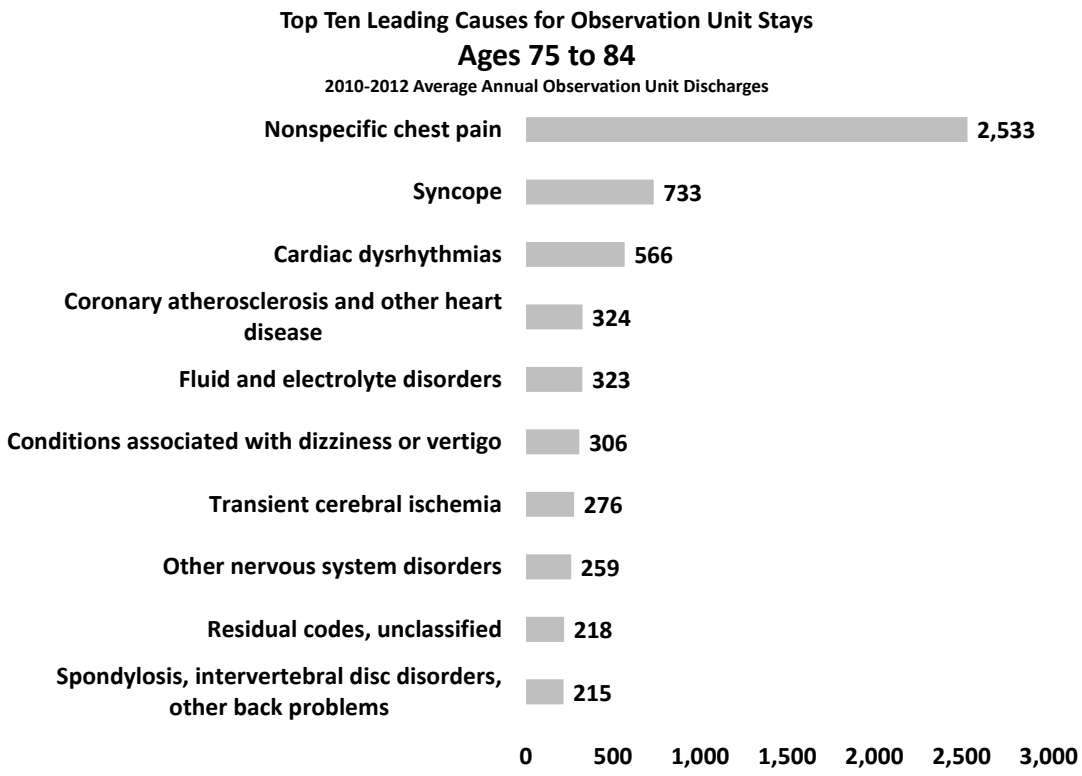



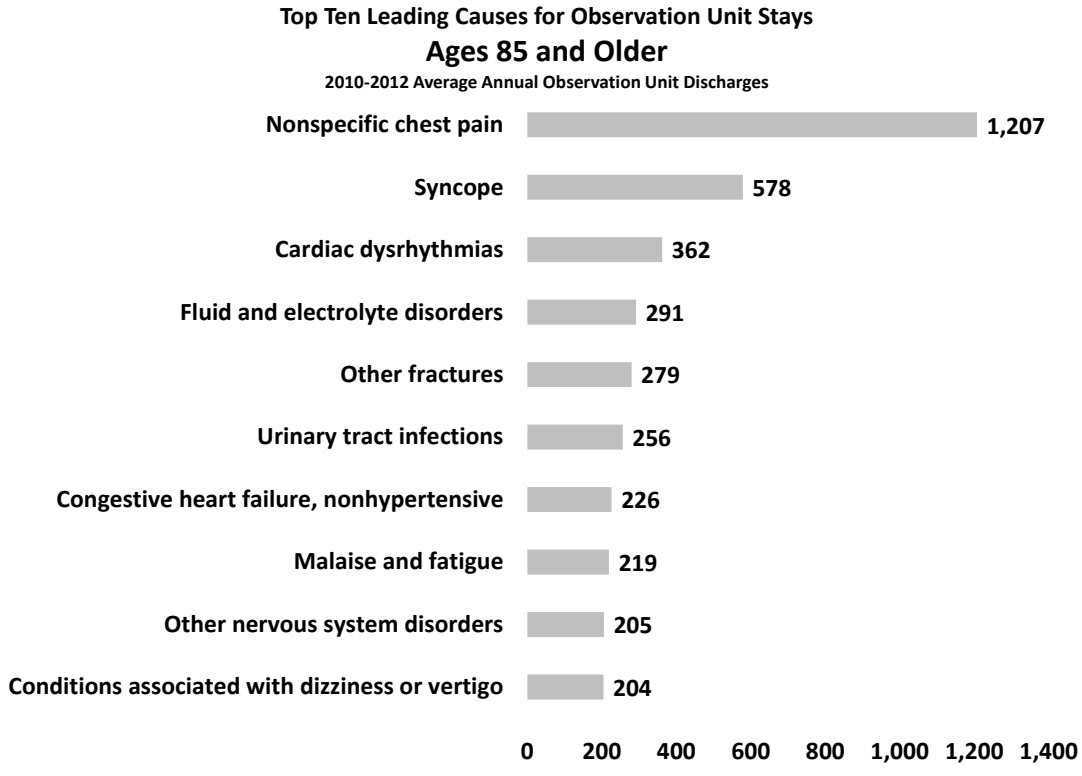

Top Ten Leading Causes for Observation Unit Stays
Ages 15 to 24
2010-2012 Average Annual Observation Unit Discharges
Other complications of pregnancy
2,398
Early or threatened labor
1,631
Other complications of birth, puerperium affecting management of mother
497
Appendicitis and other appendiceal conditions
304
Abdominal pain
276
Residual codes, unclassified
270
Hypertension complicating pregnancy, childbirth and the puerperium
167
Hemorrhage during pregnancy, abruptio placenta, placenta previa
142
Biliary tract disease
122
Alcohol-related disorders
97
0
500
1,000
1,500
2,000
2,500
3,000


Top Ten Leading Causes for Observation Unit Stays
Ages 25 to 44
2010-2012 Average Annual Observation Unit Discharges
Other complications of pregnancy
2,695
Nonspecific chest pain
2,568
Early or threatened labor
1,855
Other complications of birth, puerperium affecting management of mother
721
Abdominal pain
670
Residual codes, unclassified
413
Hypertension complicating pregnancy, childbirth and the puerperium
389
Biliary tract disease
366
Appendicitis and other appendiceal conditions
308
Other nervous system disorders
304
0
500
1,000
1,500
2,000
2,500
3,000


Top Ten Leading Causes for Observation Unit Stays
Ages 45 to 64
2010-2012 Average Annual Observation Unit Discharges
Nonspecific chest pain
9,747
Syncope
782
Cardiac dysrhythmias
679
Abdominal pain
669
Other nervous system disorders
614
Coronary atherosclerosis and other heart disease
582
Fluid and electrolyte disorders
444
Other lower respiratory disease
440
Spondylosis, intervertebral disc disorders, other back problems
393
Conditions associated with dizziness or vertigo
385
0
2,000
4,000
6,000
8,000
10,000
12,000


Top Ten Leading Causes for Observation Unit Stays
Ages 65 to 74
2010-2012 Average Annual Observation Unit Discharges
Nonspecific chest pain
3,625
Syncope
637
Cardiac dysrhythmias
559
Coronary atherosclerosis and other heart disease
420
Other nervous system disorders
307
Conditions associated with dizziness or vertigo
287
Fluid and electrolyte disorders
286
Abdominal pain
246
Other lower respiratory disease
237
Transient cerebral ischemia
225
0
1,000
2,000
3,000
4,000


Top Ten Leading Causes for Observation Unit Stays
Ages 75 to 84
2010-2012 Average Annual Observation Unit Discharges
Nonspecific chest pain
2,533
Syncope
733
Cardiac dysrhythmias
566
Coronary atherosclerosis and other heart disease
324
Fluid and electrolyte disorders
323
Conditions associated with dizziness or vertigo
306
Transient cerebral ischemia
276
Other nervous system disorders
259
Residual codes, unclassified
218
Spondylosis, intervertebral disc disorders, other back problems
215
0
500
1,000
1,500
2,000
2,500
3,000

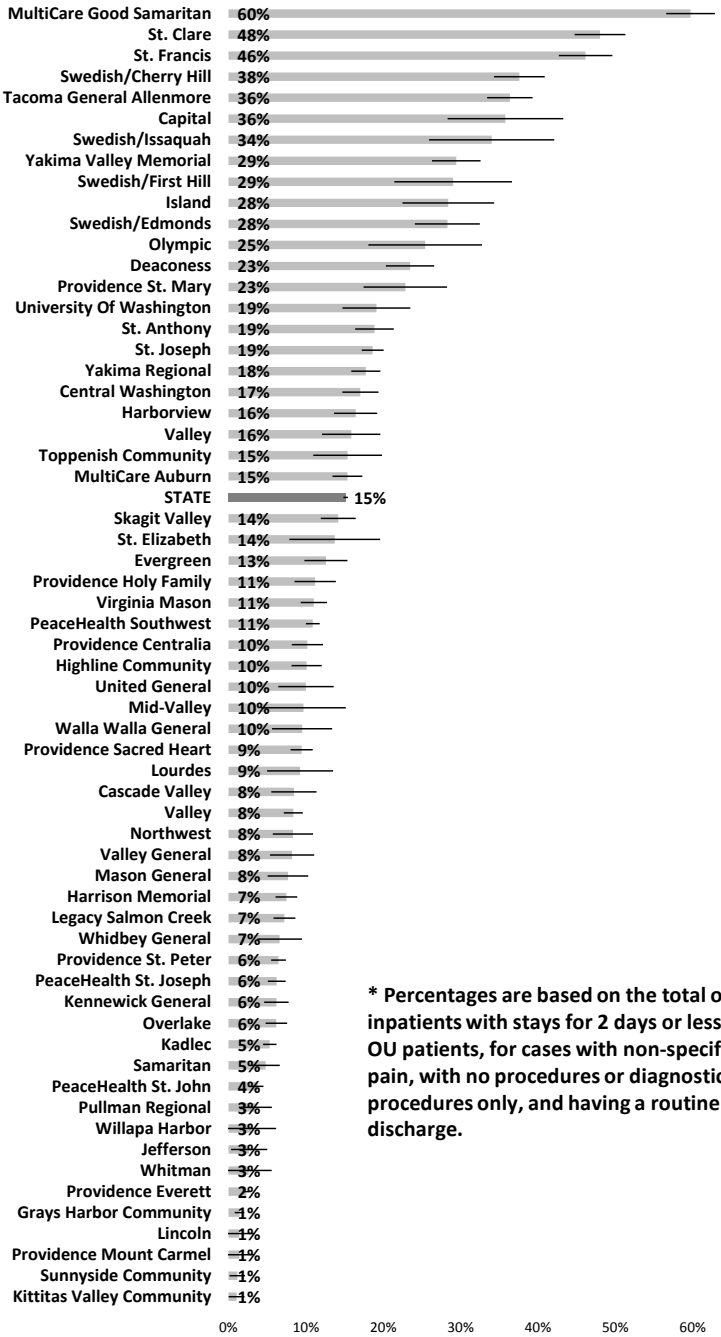

Top Ten Leading Causes for Observation Unit Stays
Ages 85 and Older
2010-2012 Average Annual Observation Unit Discharges
Nonspecific chest pain
1,207
Syncope
578
Cardiac dysrhythmias
362
Fluid and electrolyte disorders
291
Other fractures
279
Urinary tract infections
256
Congestive heart failure, nonhypertensive
226
Malaise and fatigue
219
Other nervous system disorders
205
Conditions associated with dizziness or vertigo
204
0
200
400
600
800
1,000
1,200
1,400

## APPENDIX B: INPATIENT AND OBSERVATION UNIT STAYS FOR NON-SPECIFIC CHEST PAIN BY HOSPITAL

Inpatient and Observation Unit Stays

### Inpatients as a percent* of inpatient and OU stays for Non-Specific Chest Pain by Hospital

2010-2012

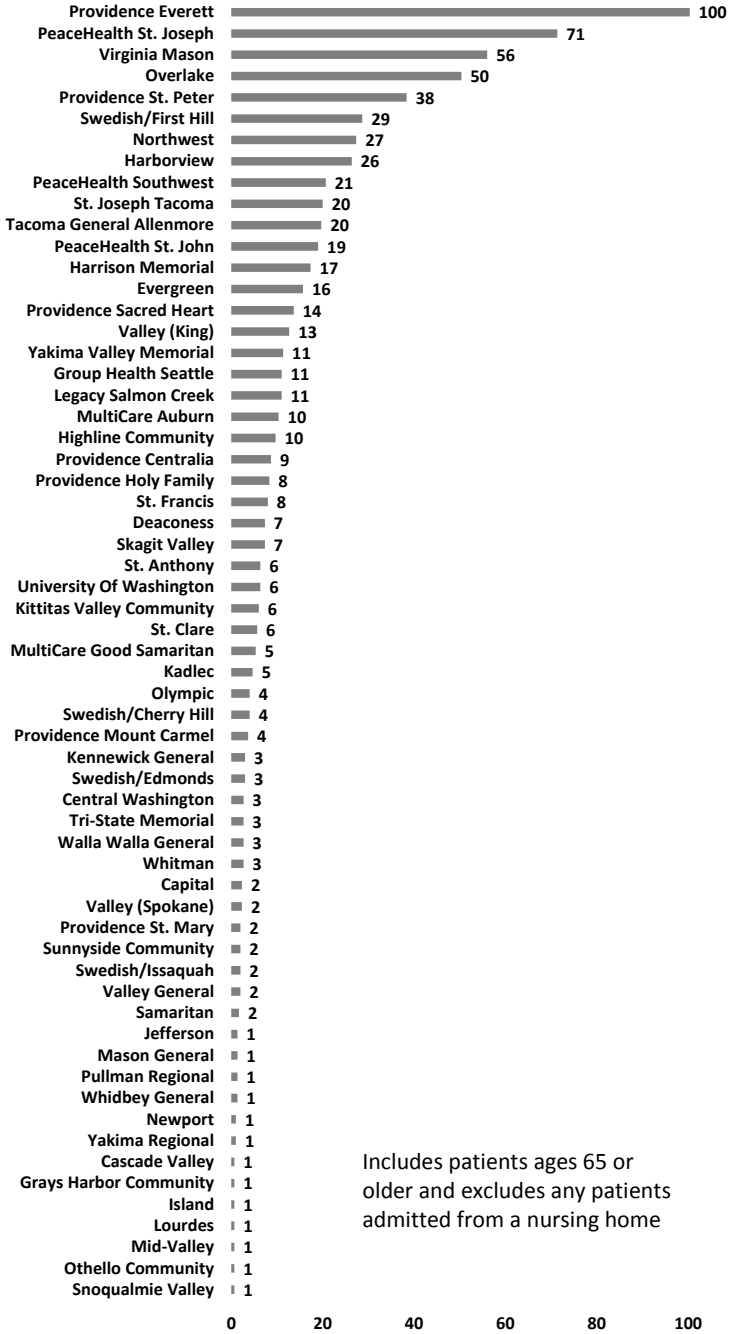


## APPENDIX C: OBSERVATION UNIT DISCHARGES TO NURSING HOMES BY HOSPITAL

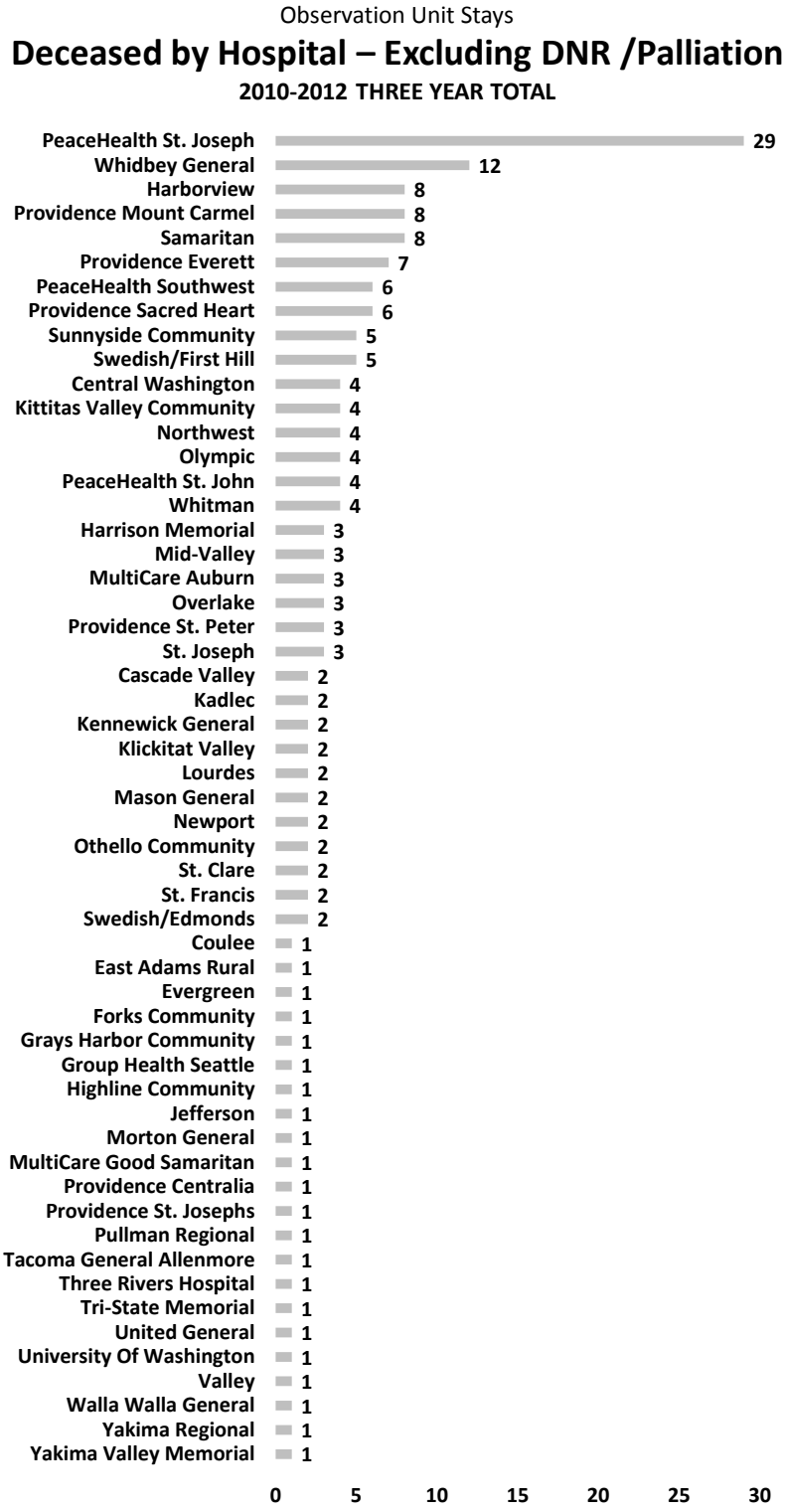
Observation Unit Stays

### Average Annual OU Patients Discharged to a Nursing Home after 3+ day LOS by Hospital

2010-2012 Average Annual Cases



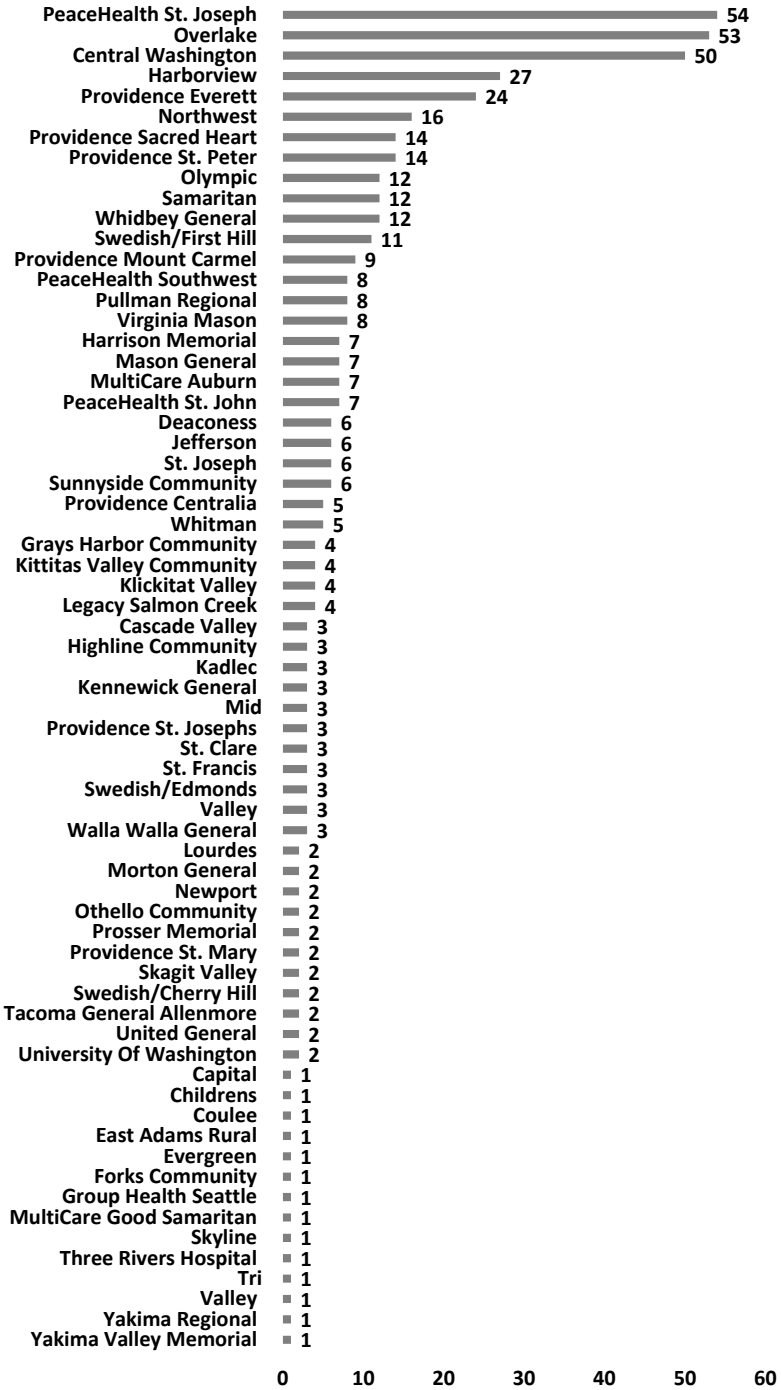
## APPENDIX D: OBSERVATION UNIT DEATHS BY HOSPITAL



Observation Unit Stays

## Deceased by Hospital – All Deaths

**2010-2012 THREE YEAR TOTAL**



## APPENDIX E: OBSERVATION UNIT DEATHS FOR FIVE LEADING CAUSES BY LENGTH OF STAY

| Lengths of stay less than twelve hours | | | | | |
|---|---|---|---|---|---|
| | < Age 65 | Ages 65-74 | Ages 75-84 | Ages 85+ | Total |
| Acute cerebrovascular disease | 1 | 2 | 3 | 9 | 15 |
| Respiratory failure, insufficiency, arrest | 0 | 1 | 5 | 7 | 13 |
| Septicemia | 1 | 1 | 3 | 8 | 13 |
| Pneumonia | 0 | 0 | 1 | 1 | 2 |
| Congestive heart failure, nonhypertensive | 0 | 0 | 1 | 1 | 2 |
| Cancer of bronchus or lung | 1 | 1 | 0 | 1 | 3 |
| Aspiration pneumonitis, food/vomitus | 0 | 0 | 1 | 1 | 2 |
| Acute myocardial infarction | 0 | 0 | 0 | 6 | 6 |
| Residual codes, unclassified | 0 | 0 | 1 | 0 | 1 |
| Cardiac arrest and ventricular fibrillation | 0 | 0 | 2 | 3 | 5 |
| Acute and unspecified renal failure | 0 | 0 | 1 | 1 | 2 |
| **Lengths of stay from twelve hours to twenty-four hours** | | | | | |
| | < Age 65 | Ages 65-74 | Ages 75-84 | Ages 85+ | Total |
| Acute cerebrovascular disease | 0 | 1 | 7 | 16 | 24 |
| Respiratory failure, insufficiency, arrest | 3 | 2 | 6 | 7 | 18 |
| Septicemia | 0 | 2 | 6 | 5 | 13 |
| Pneumonia | 0 | 1 | 3 | 3 | 7 |
| Congestive heart failure, nonhypertensive | 0 | 0 | 5 | 4 | 9 |
| Cancer of bronchus or lung | 2 | 2 | 3 | 0 | 7 |
| Aspiration pneumonitis, food/vomitus | 0 | 0 | 2 | 2 | 4 |
| Acute myocardial infarction | 0 | 2 | 0 | 3 | 5 |
| Residual codes, unclassified | 1 | 0 | 1 | 3 | 5 |
| Cardiac arrest and ventricular fibrillation | 0 | 2 | 0 | 0 | 2 |
| Acute and unspecified renal failure | 1 | 2 | 0 | 1 | 4 |
| **Lengths of stay greater than twenty-four hours** | | | | | |
| | < Age 65 | Ages 65-74 | Ages 75-84 | Ages 85+ | Total |
| Acute cerebrovascular disease | 0 | 1 | 5 | 14 | 20 |
| Respiratory failure, insufficiency, arrest | 0 | 2 | 4 | 5 | 11 |
| Septicemia | 0 | 2 | 4 | 4 | 10 |
| Pneumonia | 1 | 2 | 1 | 4 | 8 |
| Congestive heart failure, nonhypertensive | 0 | 0 | 2 | 3 | 5 |
| Cancer of bronchus or lung | 0 | 2 | 2 | 1 | 5 |
| Aspiration pneumonitis, food/vomitus | 2 | 1 | 1 | 4 | 8 |
| Acute myocardial infarction | 0 | 0 | 0 | 1 | 1 |
| Residual codes, unclassified | 2 | 0 | 1 | 3 | 6 |
| Cardiac arrest and ventricular fibrillation | 0 | 0 | 1 | 2 | 3 |
| Acute and unspecified renal failure | 0 | 1 | 2 | 1 | 4 |
| **All cases combined** | | | | | |
| | < Age 65 | Ages 65-74 | Ages 75-84 | Ages 85+ | Total |
| Acute cerebrovascular disease | 1 | 4 | 15 | 39 | 59 |
| Respiratory failure | 3 | 5 | 15 | 19 | 42 |
| Septicemia | 1 | 5 | 13 | 17 | 36 |
| Pneumonia | 1 | 3 | 5 | 8 | 17 |
| Congestive heart failure | 0 | 0 | 8 | 8 | 16 |
| Cancer of bronchus or lung | 3 | 5 | 5 | 2 | 15 |
| Aspiration pneumonitis, food/vomitus | 2 | 1 | 4 | 7 | 14 |
| Acute myocardial infarction | 0 | 2 | 0 | 10 | 12 |
| Residual codes, unclassified | 3 | 0 | 3 | 6 | 12 |
| Cardiac arrest, ventricular fibrillation | 0 | 2 | 3 | 5 | 10 |
| Acute and unspecified renal failure | 1 | 3 | 3 | 3 | 10 |

## ENDNOTES

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[xii] Centers for Medicare and Medicaid Services, Product No. 11435 (Revised May 2014), *Are you a hospital inpatient or outpatient?*, Washington D.D.: U.S. Government Printing Office. Accessed in June 2014, https://www.medicare.gov/Pubs/pdf/11435.pdf

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Washington State Office of Financial Management
Forecasting and Research Division • PO Box 43113
Olympia, WA 98504-3113 • (360) 902-0599 • Fax (360) 725-5174