Hospital A

2015 Annual Benchmark Report

Thank you for your dedication to quality improvement for stroke treatment and your participation in Coverdell

Prepared June 2016

 Funded by Coverdell Acute Stroke Program grant from U.S. Centers for Disease Control and Prevention.

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Contents of Report

Types of Stroke

- Ischemic Stroke (IS) is the death of an area of brain tissue resulting from an inadequate supply of blood and oxygen to the brain due to blockage of an artery.
- Transient Ischemic Attack (TIA) occurs when a blood clot temporarily clogs an artery and part of the brain does not get the blood it needs. The symptoms occur rapidly and last a relatively short time.
- Intracerebral Hemorrhage (ICH) occurs when a blood vessel in the brain leaks or ruptures, resulting in bleeding into the brain. Parts of the brain affected by the bleeding can become damaged, and, when blood accumulates, it can put pressure on the brain.
- Subarachnoid Hemorrhage (SAH) is bleeding into the subarachnoid space, the area between the arachnoid membrane and the pia mater surrounding the brain.
- Other Stroke (NOS) is when the type of stroke was not specified.

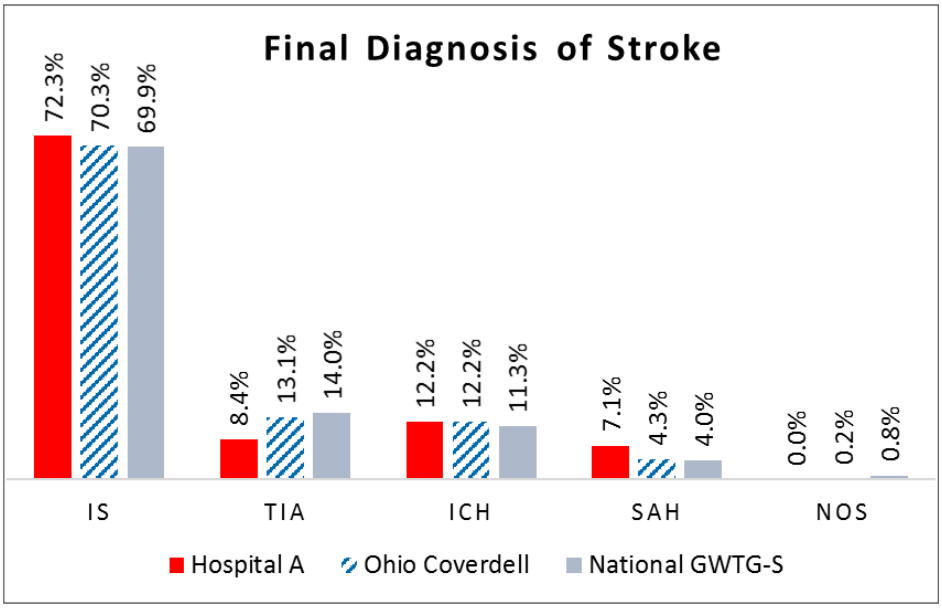
Introduction

The Ohio Coverdell Stroke Program (Coverdell) is a data-driven quality improvement program. We provide quality improvement resources, training, and technical assistance to stroke teams in participating hospitals to support their implementation of evidence-based stroke treatment. Coverdell is funded by a nationwide competitive grant from the U.S. Centers for Disease Control and Prevention and by the Ohio Department of Health.

Coverdell has designated Get With The Guidelines®– Stroke (GWTG-S) as our data collection and reporting platform. For calendar year 2015, the 48 hospitals participating in Coverdell entered 16,419 stroke patients into the Ohio Coverdell section in GWTG-S.[1] That same year, more than 1,500 hospitals nationwide entered 452,473 stroke patients into GWTG-S. The latter includes patients in both Coverdell and non-Coverdell hospitals nationwide. In this report, your hospital's performance is compared to Ohio Coverdell hospital data and national GWTG-S data, where available.

Patients by Stroke Type

The graph below compares patients by stroke type for your hospital, all Ohio Coverdell hospitals, and all hospitals nationwide participating in GWTG-S.



	IS	TIA	ICH	SAH	NOS
Hospital A *(n = 296)*	214	25	36	21	0
Ohio Coverdell *(n = 16,419)*	11,537	2158	1998	698	28
National GWTG – S *(n = 452,473)*	316,475	63,250	50,910	18,166	3672

[1]*Data in this report was downloaded from GWTG-S on May 11, 2016.*

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Stroke Demographics

An increase of stroke in younger adults has been seen not only in Ohio, but also across the nation. This correlates with increases in uncontrolled hypertension and obesity, both of which are risk factors for stroke.

The average age of adult stroke patients treated in all Ohio Coverdell hospitals was 69.3 years. Patients aged 18 to 65 years accounted for 38.9% of the strokes reported by Ohio Coverdell hospitals. Patients aged 66 and older accounted for 61.1% of the strokes reported by Ohio Coverdell hospitals.

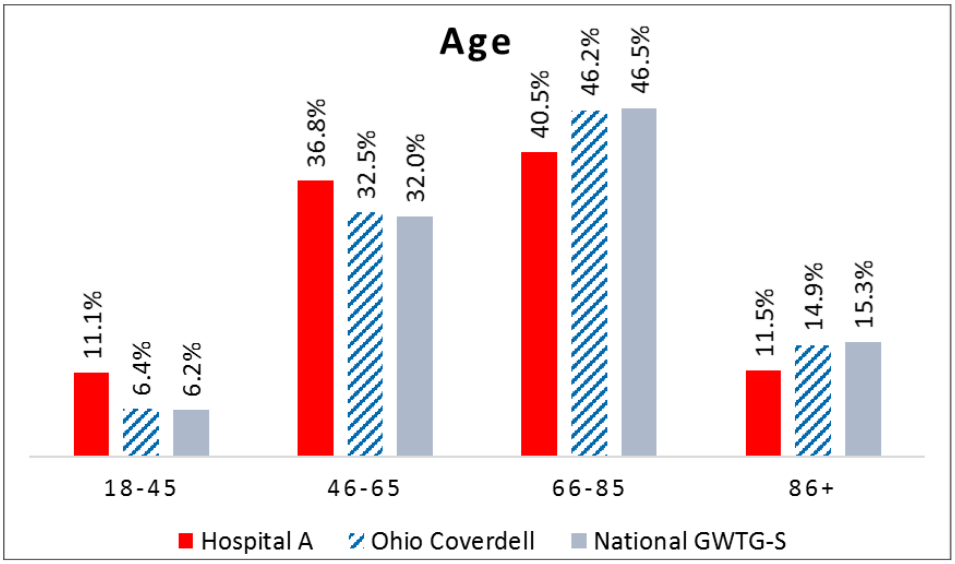
Females represented 52.1% of stroke patients, and males represented 47.9% of stroke patients in all Ohio Coverdell hospitals.

Cardiovascular disease, including stroke, is the greatest contributor to life expectancy disparities based on race and ethnicity. Racial disparities exist in health care and are a growing concern in the U.S. In Ohio Coverdell hospitals, about 78.7% of stroke patients are Caucasian, and 15.8% are African American. In the general population of Ohio, about 83.0% of the population is Caucasian, and 12.6% is African American.

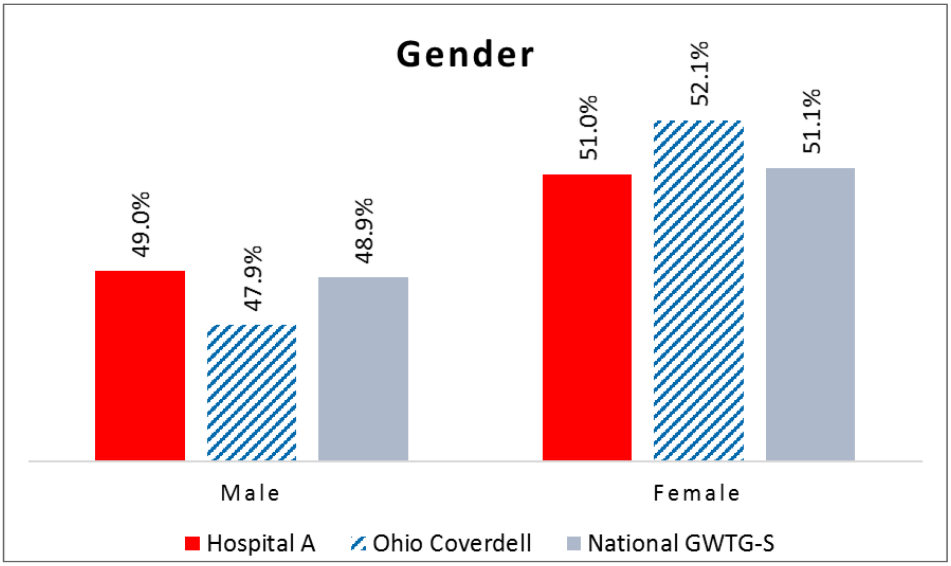
See your hospital's stroke demographics by race on page 4.

Demographics by Age and Gender

The following three graphs compare the age, gender, and race of stroke patients treated in your hospital to those in all Ohio Coverdell hospitals and in all hospitals nationwide using GWTG-S.



	18 – 45	46 – 65	66 – 85	86 +
Hospital A *(n = 296)*	33	109	120	34
Ohio Coverdell *(n = 16,418)*	1058	5340	7579	2441
National GWTG – S *(n = 452,385)*	28,053	144,971	210,268	69,093



	Male	Female
Hospital A *(n = 296)*	145	151
Ohio Coverdell *(n = 16,417)*	7858	8559
National GWTG – S *(n = 452,394)*	221,054	231,340

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The Warning Signs of Stroke

Learning the warning signs of stroke is the first step in getting care. However, most people do not recognize all 5 warning signs.

The 5 Warning Signs of Stroke are:

1) **SUDDEN numbness or weakness of face, arm, or leg, especially on one side of the body**

2) **SUDDEN confusion, trouble speaking, or understanding**

3) **SUDDEN vision problems**

4) **SUDDEN trouble walking, dizziness, loss of balance, or coordination**

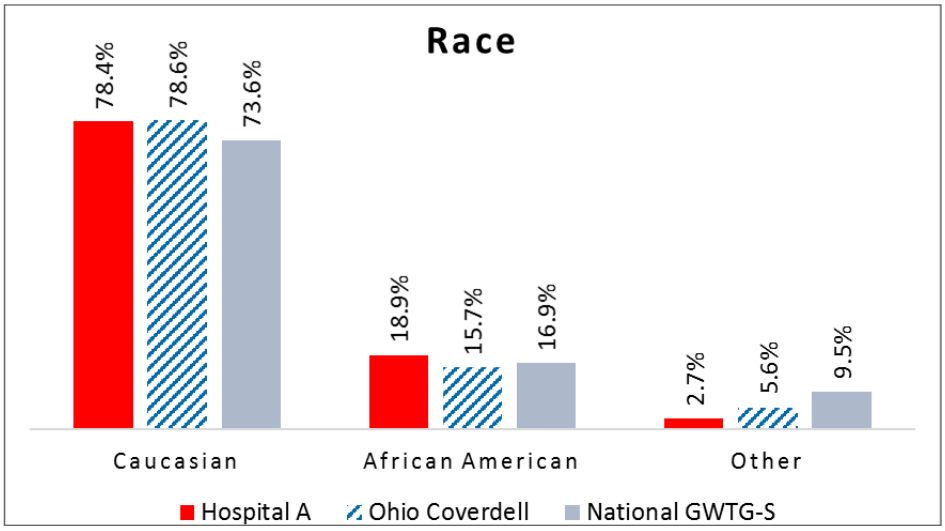
5) **SUDDEN severe headache with no known cause**

If you notice any of these warning signs, call 9-1-1 immediately. It is very important to make note of the time you first noticed one of these signs.

People with warning signs of stroke who arrive at the hospital by Emergency Medical Service (EMS) transportation or ambulance generally have better outcomes in terms of higher survival rates and less disability, in comparison to those who arrive by other forms of transport.

In Ohio Coverdell hospitals, 43.2% of stroke patients are transported by ambulance.

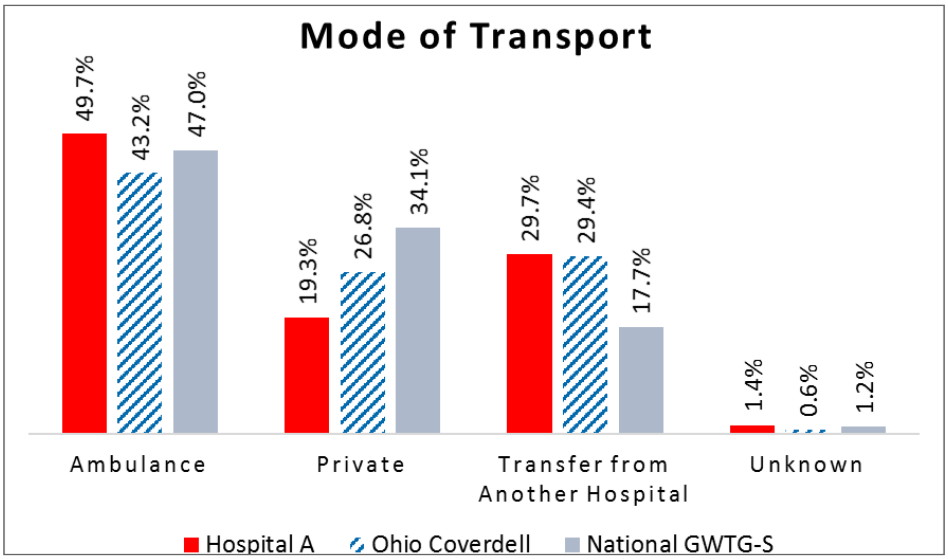
Demographics by Race



	Caucasian	African American	Other
Hospital A *(n = 296)*	232	56	8
Ohio Coverdell *(n = 16,419)*	12,916	2586	921
National GWTG – S *(n = 452,473)*	333,471	76,328	43,035

How Stroke Patients Arrive at the Hospital

The graph below shows how stroke patients arrived at your hospital compared to all Ohio Coverdell hospitals and nationwide GWTG-S hospitals.



	Ambulance	Private	Transfer	Unknown
Hospital A *(n = 296)*	147	57	88	4
Ohio Coverdell *(n = 16,166)*	6979	4337	4757	93
National GWTG – S *(n = 443,283)*	208,281	151,231	78,573	5198

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Treatment is Time Critical

Stroke is a medical emergency that can kill up to 1.9 million brain cells per minute. Time lost is brain lost, and treatment expediency is critical in order to improve patients' health outcomes.

Door-to-Needle Time

"Door-to-Needle Time" is the time from patients' arrival at the hospital emergency department (ED) to the time eligible patients receive intravenous tissue-type plasminogen activator (t-PA).

***Target: Stroke* is an initiative of the American Heart Association/ American Stroke Association (AHA/ ASA) to improve clinical performance and timeliness of t-PA administration.**

***Target: Stroke* Phase II began in January 2015. The goals are for hospital EDs to:**

1) **Achieve door-to-needle time of ≤ 60 min. for at least 75% of eligible acute ischemic stroke patients; and**

1) **Achieve door-to-needle time of ≤ 45 min. for at least 50% of eligible acute ischemic stroke patients.**

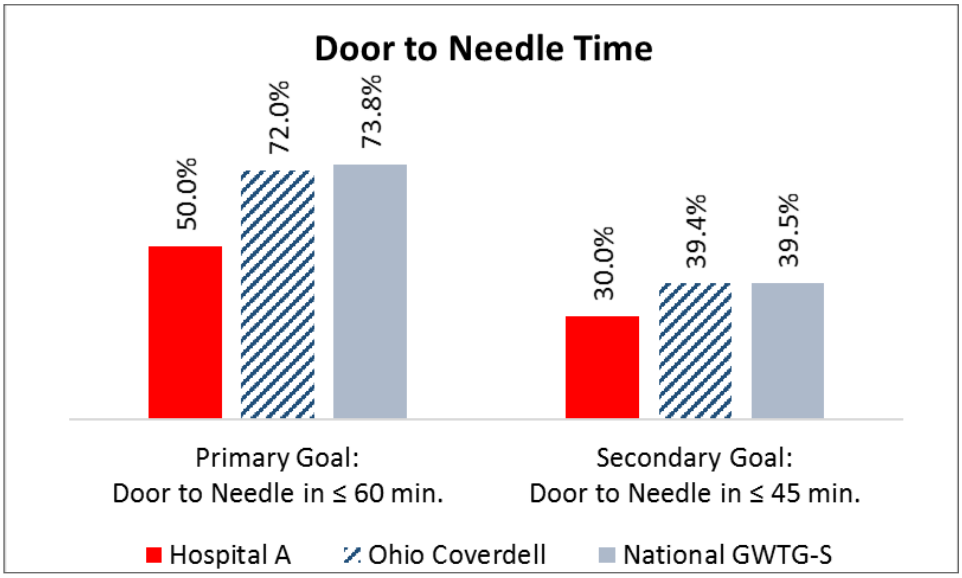
The average door-to-needle time for all Ohio Coverdell hospital patients in 2015 was 54.9 minutes.

The average "last known well" to needle time for all Ohio Coverdell hospital patients was 175.1 minutes (2.9 hours).

Door-to-Needle Time

"Door-to-Needle Time" is the time from patients' arrival at a hospital emergency department (ED) to the time eligible acute ischemic stroke patients receive intravenous tissue-type plasminogen activator (t-PA). Stroke is a medical emergency, and treatment is time critical to reduce brain damage and improve patients' health outcomes. Guidelines recommend that t-PA be administered to eligible patients within 60 minutes of arrival at the ED.

The graph below shows the percentage of eligible acute ischemic stroke patients who received t-PA within 60 minutes and 45 minutes of ED arrival at your hospital, compared to all Ohio Coverdell hospitals and all hospitals nationwide using GWTG-S. These two measures align with *Target: Stroke* Phase II goals from AHA/ASA.



Note: These graphs use data from the "Time to Intravenous Thrombolytic Therapy-60 min" and "Time to Intravenous Thrombolytic Therapy-45 min" configurable measure reports in GWTG-S.

	Door-to-Needle in 60 min. *(# of patients treated/total eligible patients)*	Door-to-Needle in 45 min. *(# of patients treated/total eligible patients)*
Hospital A	10/20	6/20
Ohio Coverdell	579/804	317/804
National GWTG – S	17,586/23,834	9420/23,829

Information on *Target: Stroke* Phase II and how your hospital can continue to reduce door-to-needle time is available at the following link: http://www.strokeassociation.org/STROKEORG/Professionals/TargetStroke/Target-Stroke-Phase-II_UCM_469859_Article.jsp

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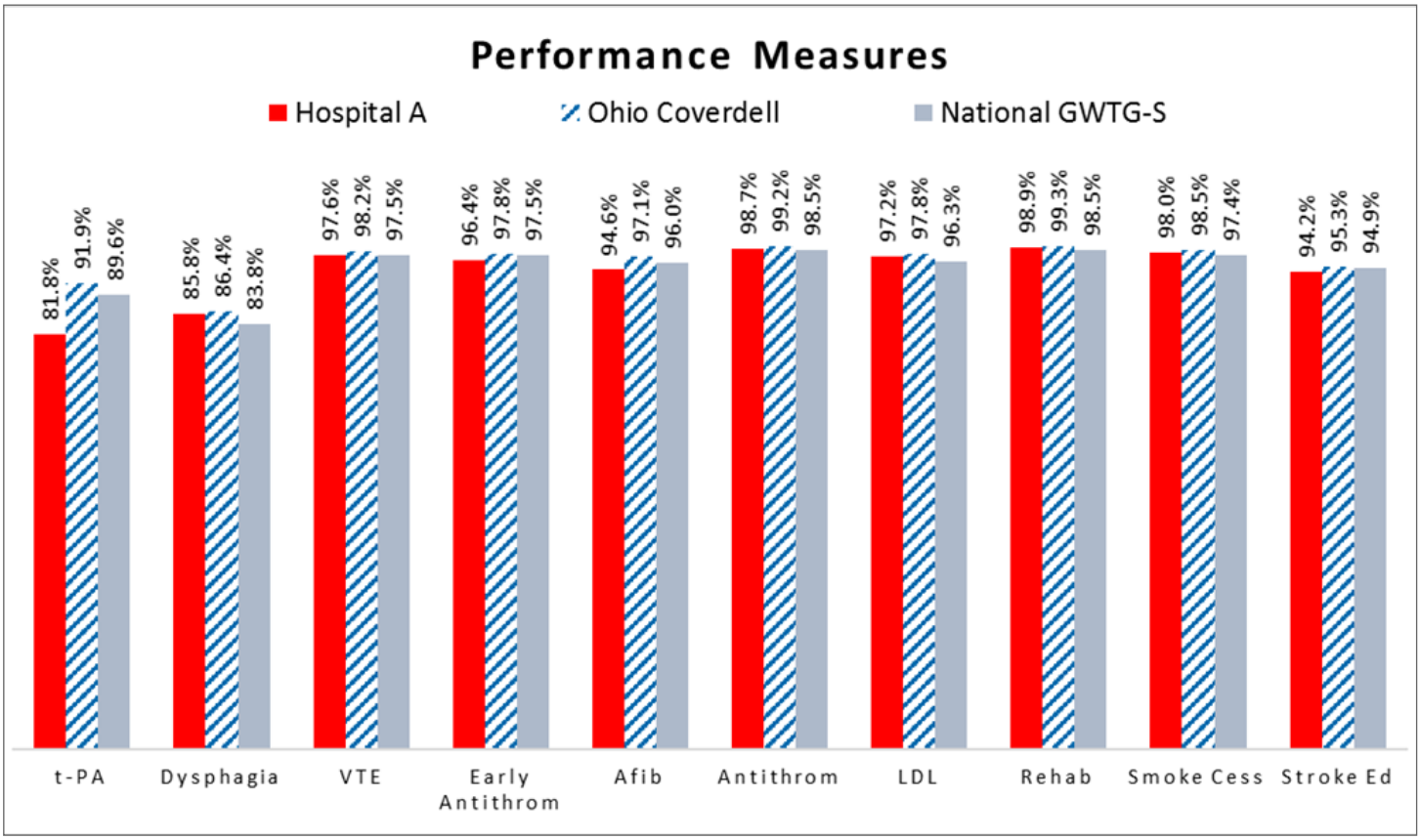
Stroke Performance Measures

There are ten primary performance measures for stroke treatment that include aspects of acute stroke treatment from admission through discharge. Each performance measure has separately defined inclusion and exclusion criteria, based on parameters from GWTG and CDC. The graph below shows how your hospital compares to all Ohio Coverdell hospitals and all hospitals nationwide using GWTG-S. Performance measure definitions are on the next page.



	t-PA	Dysph-agia	VTE	Early Anti-throm	Afib	Anti-throm	LDL	Rehab	Smoke Cess	Stroke Ed
Hospital A *(numerator)*	9	236	279	159	35	231	173	276	100	113
Hospital A *(denominator)*	11	275	286	165	37	234	178	279	102	120
Ohio Coverdell *(numerator)*	872	9866	10,844	8624	1632	10,624	8011	10,979	2998	6350
Ohio Coverdell *(denominator)*	949	11,414	11,038	8814	1680	10,711	8194	11,061	3044	6665
National GWTG-S *(numerator)*	25,936	294,263	294,175	265,973	48,060	321,070	240,066	327,197	65,885	209,876
National GWTG-S *(denominator)*	28,953	351,151	301,592	272,701	50,057	325,818	249,346	332,226	67,650	221,131

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Performance Measure Definitions:

(Definitions refer to the table on page 6.)

Tissue Plasminogen Activator (t-PA): Patients with ischemic stroke who arrive at the hospital within 2 hours of time last known well and receive IV t-PA within 3 hours of time last known well.

Dysphagia: Stroke patients who are screened for dysphagia before being given food, medication, or liquids by mouth.

Venous Thromboembolism (VTE): Patients with an ischemic stroke, a hemorrhagic stroke, or a stroke not otherwise specified who received VTE prophylaxis or have documentation why no VTE was given the day of or the day after hospital admission.

Early Antithrombotics (Early Antithrom): Patients with ischemic stroke or TIA who receive antithrombotic therapy by the end of hospital day two.

Atrial Fibrillation (Afib): Patients with ischemic stroke or TIA with atrial fibrillation/flutter discharged on anti-coagulation therapy.

Antithrombotics (Antithrom): Patients with ischemic stroke or TIA discharged on antithrombotic therapy.

Low-Density Lipoprotein (LDL): Patients with ischemic stroke or TIA with LDL levels ≥ 100, with LDL not measured, or on cholesterol-reducer prior to admission, who are discharged on statin medication.

Rehabilitation (Rehab): Stroke patients who were assessed for rehabilitation services.

Smoking Cessation (Smoke Cess): Stroke patients with a history of smoking cigarettes who were given information about smoking cessation during their hospital stay.

Stroke Education (Stroke Ed): Stroke or TIA patients or their caregivers who were taught, while in the hospital, the personal risk factors for stroke, warning signs, activation of emergency medical system, need for follow-up after discharge, and medications prescribed.

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Stroke Severity and Length of Stay

Stroke severity can be measured by the National Institutes of Health Stroke Scale (NIHSS). The NIHSS is a 15-item scale, and the score can range from 0-42.

NIHSS Score	Stroke Severity
0	No Stroke Symptoms
1-4	Minor Stroke
5-15	Moderate Stroke
16-20	Moderate to Severe Stroke
21-42	Severe Stroke

For 2015, the average total NIHSS score for Ohio Coverdell patients was 6.5 at initial hospital evaluation.

Stroke severity affects patients' average length of stay (LOS). LOS varies significantly by stroke type and increases as the severity of the stroke increases.

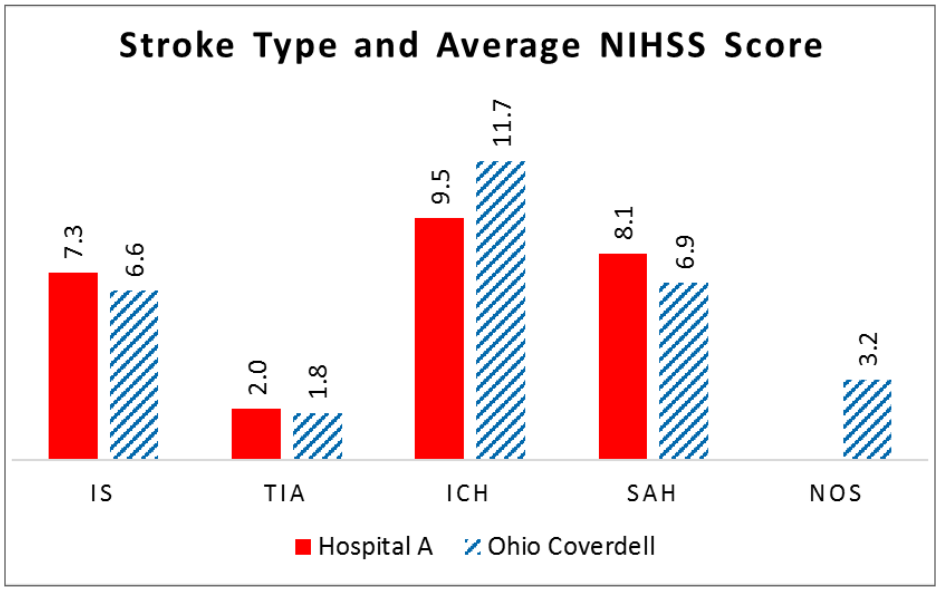
Certain stroke types such as subarachnoid hemorrhages are more severe than other stroke types and therefore have a longer LOS.

Average LOS for Ohio Coverdell patients:

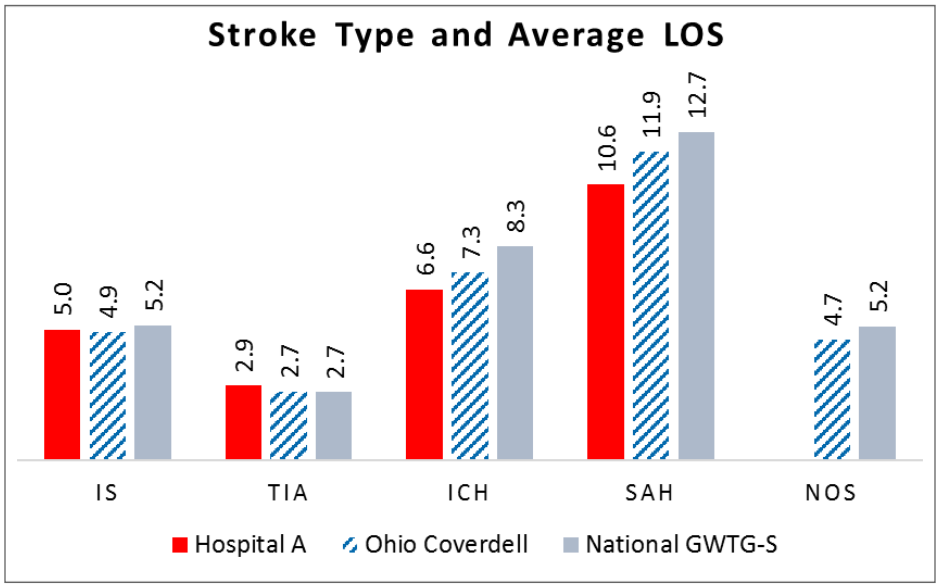
- **All stroke types = 5.1 days**
- **IS = 4.9 days**
- **TIA = 2.6 days**
- **ICH = 7.3 days**
- **SAH = 11.9 days**

Stroke Severity and Length of Stay

The graph below compares stroke type and the average National Institutes of Health Stroke Scale (NIHSS) score for patients at your hospital compared to all Ohio Coverdell hospitals. For stroke type abbreviations and definitions, see page 2.



The graph below compares length of stay (LOS) in days by stroke type for your hospital to all Ohio Coverdell hospitals and all hospitals nationwide using GWTG-S.



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Discharge Destination

Discharge destination is an important component of planning for care transitions. Ohio Coverdell hospitals discharged 16,210 patients in 2015 with 7271 (44.5%) discharged directly to home and 6386 (39.1%) to other post-acute health care facilities.

Of the 6386 patients discharged to an other health care facility from Ohio Coverdell hospitals, 2952 (46.2%) went to an inpatient rehabilitation facility and 3059 (47.9%) to a skilled nursing facility.

As part of Coverdell's ongoing focus on transitions of care, hospitals are improving transitions to the next setting of care.

Transitions of Care Summary

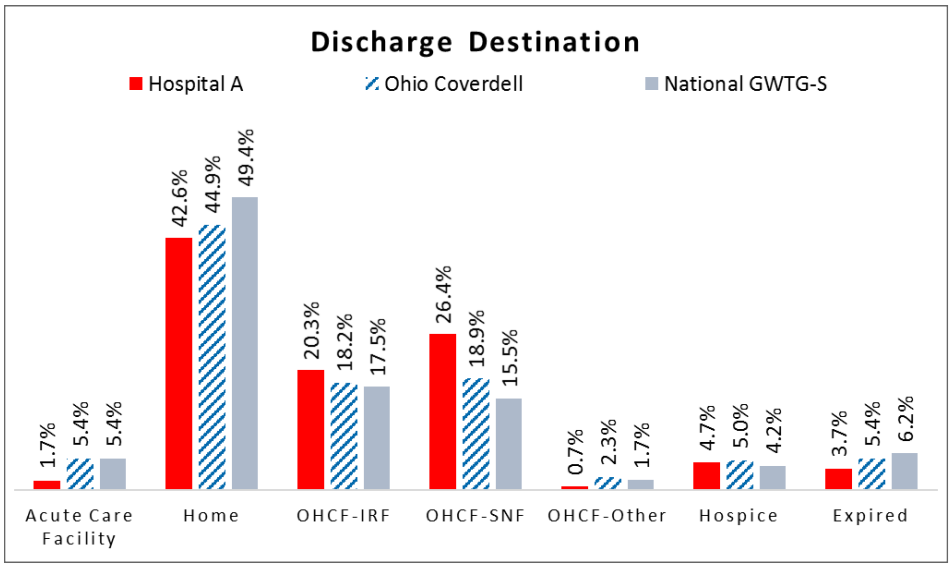
The Ohio Coverdell Stroke Program began a structured Transitions of Care initiative in 2013 to improve the quality of care transitions by asking hospitals to schedule follow-up appointments for eligible stroke patients prior to hospital discharge.

This quality improvement initiative was conducted as a Learning Collaborative of Coverdell hospitals. The goals were to:

1) **Schedule a primary care provider appointment for at least 85% of stroke patients prior to discharge home.**
2) **Schedule recommended neurologist, neurosurgeon, or neurology provider appointments for at least 85% of stroke patients prior to discharge.**

Discharge Destination

The graph below shows discharge destinations for stroke patients from your hospital compared to patients from all Ohio Coverdell hospitals and all hospitals nationwide using GWTG-S. Patients discharged to an "other health care facility" (OHCF) are classified below as inpatient rehabilitation facility (OHCF-IRF), skilled nursing facility (OHCF-SNF), or other (OHCF-Other) destination.



	Acute Care Facility	Home	OHCF-IRF	OHCF-SNF	OHCF-Other	Hospice	Expired
Hospital A *(n = 296)*	5	126	60	78	2	14	11
Ohio Coverdell *(n = 16,210)*	870	7271	2952	3059	375	811	872
National GWTG – S *(n = 445,731)*	24,074	220,335	78,056	69,133	7692	18,697	27,744

Transitions of Care

Your hospital's performance with scheduling and documenting follow-up appointments for stroke patients prior to hospital discharge is on the next three pages. This includes primary care and neurology appointments scheduled prior to discharge home and neurology appointments scheduled prior to discharge to another health care facility.

For more information on Ohio Coverdell Transitions of Care, see the *Ohio Department of Health* website, *Coverdell* section at:
http://www.healthy.ohio.gov/hdsp/coverdell/Transitions%20of%20Care%20for%20Stroke%20Patients.aspx

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Transitions of Care to Primary Care Providers (PCP)

Follow-up care with a primary care provider can facilitate patient recovery from stroke. Stroke patients are at a significant risk of discontinuous care and consequently adverse events. With nearly 45% of Ohio Coverdell stroke patients discharged to their home, scheduling follow-up appointments with a PCP is an important component of the care continuum.

To improve care continuity post-stroke, the Ohio Coverdell Stroke Program continues to support inpatient providers to identify, plan, and implement organizational processes to schedule follow-up appointments for stroke patients prior to discharge.

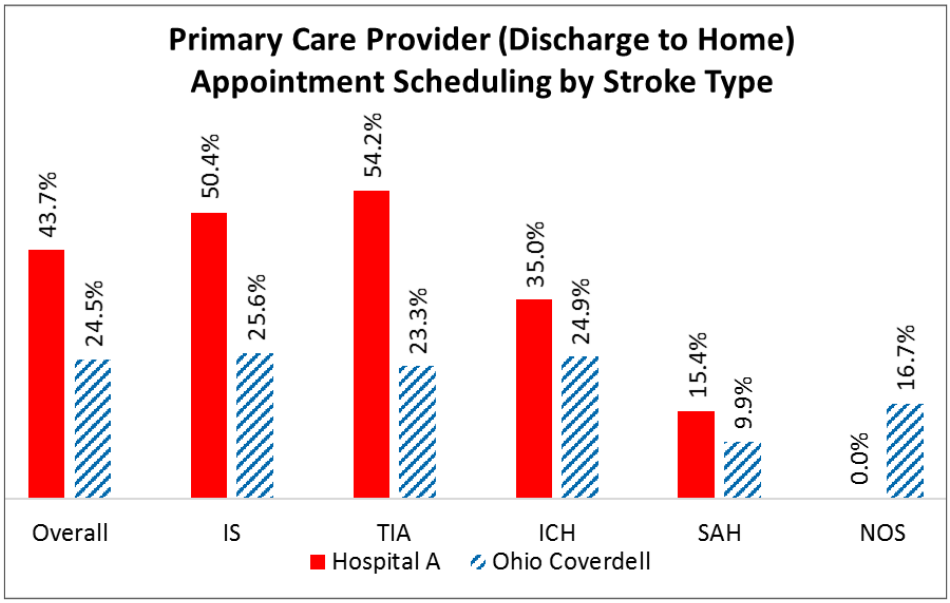
Baseline Performance:
Statewide data from the Coverdell Learning Collaborative "baseline period" (April 2013-September 2013) indicated that only 13.4% of eligible stroke patients had an appointment scheduled with their PCP prior to hospital discharge.

2015 Performance Improvement:
Throughout calendar year 2015, the 48 Ohio Coverdell hospitals continued to improve scheduling PCP follow-up appointments.

Overall, Ohio Coverdell hospitals scheduled PCP follow-up appointments for 1657 of 6766 (24.5%) total eligible patients in 2015. This demonstrates an 82.8% performance improvement from the 2013 baseline period.

Primary Care Provider Follow-Up Appointment Scheduling

The graph below shows the percentage of eligible stroke patients for whom your hospital scheduled, **prior to discharge home**, a follow-up appointment with a **Primary Care Provider (PCP)**, as documented in Get With The Guidelines®-Stroke, Ohio Special Initiatives Tab. The graph compares PCP appointment scheduling at your hospital to all Ohio Coverdell hospitals. Follow-up appointment scheduling data is displayed below for all stroke types combined (Overall) and for each stroke type. See page 2 for stroke type abbreviations and definitions. Inclusion and exclusion criteria are specified below the graph.



	(# of patients with scheduled appointment/total eligible patients)					
	Overall	IS	TIA	ICH	SAH	NOS
Hospital A	94/215	63/125	13/24	14/40	4/26	0/0
Ohio Coverdell	1657/6766	1219/4769	316/1357	96/385	24/243	2/12

Inclusion and Exclusion Criteria:

Primary Care Appointments for Patients Discharged to Home

- Includes patients: Final clinical diagnosis of Ischemic Stroke, Transient Ischemic Attack (<24 hours), Intracerebral Hemorrhage, Subarachnoid Hemorrhage, or Stroke Not Otherwise Specified; comfort care not documented/unable to determine; discharged home; age ≥ 18 years
- Excludes patients: age < 18 years; "comfort care only" specified; not admitted; discharge destination other than home

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Transitions of Care to Neurology Providers

Follow-up care with a stroke specialist (neurologist, neurosurgeon, or neurology provider) can facilitate recovery for stroke patients.

For other disease states, follow-up with specialty care is known to facilitate care continuity and reduce hospital readmissions. However, this is not yet standard of care for stroke. To improve care continuity post-stroke, the Ohio Coverdell Stroke Program continues to support inpatient providers to identify, plan, and implement processes to schedule follow-up appointments for stroke patients prior to hospital discharge.

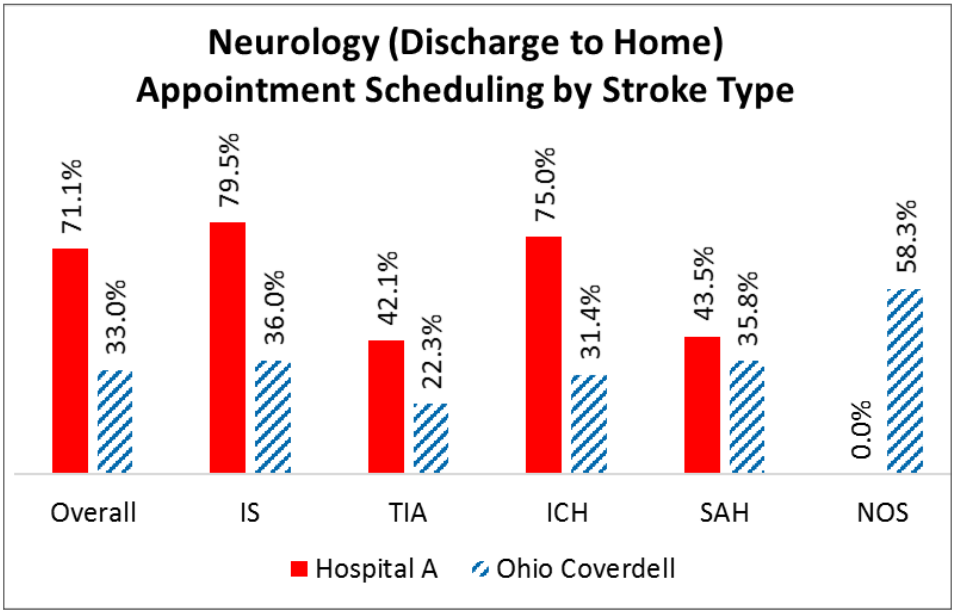
Baseline Performance:
Statewide data from the Coverdell Learning Collaborative "baseline period" (April 2013-September 2013) indicated that of eligible patients discharged home during the baseline period, 24.8% had a neurology follow-up appointment scheduled prior to discharge.

2015 Performance Improvement:
Throughout calendar year 2015, the 48 Ohio Coverdell hospitals continued to improve scheduling neurology follow-up appointments.

In 2015, Ohio Coverdell hospitals scheduled neurology follow-up appointments for 2235 of 6766 (33.0%) total eligible patients discharged home. This demonstrates a 33.1% performance improvement from the 2013 baseline period.

Neurology Provider Follow-Up Appointment Scheduling for Stroke Patients Discharged to Home

The graph below shows the percentage of eligible stroke patients for whom your hospital scheduled, **prior to discharge home**, a follow-up appointment with a **Neurology Provider**, as documented in Get With The Guidelines®-Stroke, Ohio Special Initiatives Tab. The graph compares neurology appointment scheduling at your hospital to all Ohio Coverdell hospitals. Follow-up appointment scheduling data is displayed below for all stroke types combined (Overall) and for each stroke type. See page 2 for stroke type abbreviations and definitions. Inclusion and exclusion criteria are specified below the graph.



	(# of patients with scheduled appointment/total eligible patients)					
	Overall	IS	TIA	ICH	SAH	NOS
Hospital A	143/201	101/127	8/19	24/32	10/23	0/0
Ohio Coverdell	2235/6766	1718/4769	302/1357	121/385	87/243	7/12

Inclusion and Exclusion Criteria:

Neurology Appointments for Patients Discharged to Home

- Includes patients: Final clinical diagnosis of Ischemic Stroke, Transient Ischemic Attack (<24 hours), Intracerebral Hemorrhage, Subarachnoid Hemorrhage, or Stroke Not Otherwise Specified; comfort care not documented/unable to determine; discharged home; age ≥ 18 years
- Excludes patients: age < 18 years; "comfort care only" specified; not admitted; discharge destination other than home; neurology/neurosurgery follow-up not ordered or recommended

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Transitions of Care to Neurology Providers

Among Ohio Coverdell hospitals, nearly 40% of stroke patients are discharged from the hospital to another type of health care facility. By scheduling specialty care (neurologist, neurosurgeon, or neurology provider) follow-up appointments for this population of patients prior to discharge, hospitals can further improve care continuity post-stroke.

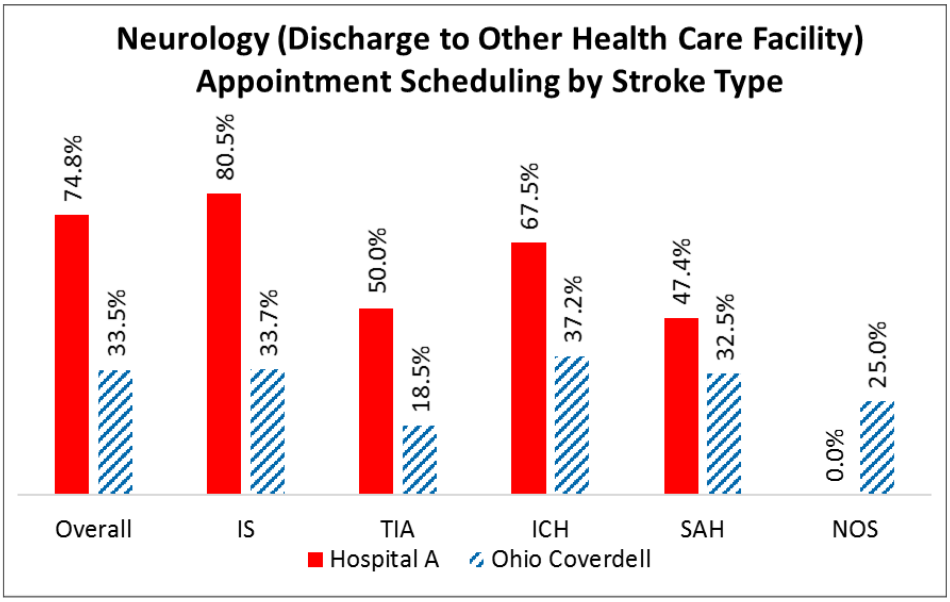
Stroke patients with a hospital discharge destination of "Other Health Care Facility" include those going to an Inpatient Rehabilitation Facility, Skilled Nursing Facility, Intermediate Care Facility, or Long Term Care Hospital.

Baseline Performance:
Statewide data from the Coverdell Learning Collaborative "baseline period" (April 2013-September 2013) indicated that, of eligible patients discharged to an other health care facility during baseline, 25.1% had a neurology follow-up appointment scheduled prior to hospital discharge.

2015 Performance Improvement:
For calendar year 2015, the 48 Ohio Coverdell hospitals scheduled neurology follow-up appointments for 2037 of 6082 (33.5%) total eligible patients discharged to other health care facilities. This demonstrates a 33.5% performance improvement from the 2013 baseline period.

Neurology Provider Follow-Up Appointment Scheduling for Stroke Patients Discharged to Other Health Care Facility

The graph below shows the percentage of eligible stroke patients for whom your hospital scheduled, **prior to discharge to an Other Health Care Facility**, a follow-up appointment with a **Neurology Provider**, as documented in Get With The Guidelines®-Stroke, Ohio Special Initiatives Tab. The graph compares neurology appointment scheduling at your hospital to all Ohio Coverdell hospitals. Follow-up appointment scheduling data is displayed below for all stroke types combined (Overall) and for each stroke type. See page 2 for stroke type abbreviations and definitions. Inclusion and exclusion criteria are specified below the graph.



	(# of patients with scheduled appointment/total eligible patients)					
	Overall	IS	TIA	ICH	SAH	NOS
Hospital A	237/317	173/215	3/6	52/77	9/19	0/0
Ohio Coverdell	2037/6082	1606/4771	44/238	309/831	76/234	2/8

Inclusion and Exclusion Criteria:

Neurology Appointments for Patients Discharged to Other Health Care Facility

- Includes patients: Final clinical diagnosis of Ischemic Stroke, Transient Ischemic Attack (<24 hours), Intracerebral Hemorrhage, Subarachnoid Hemorrhage, or Stroke Not Otherwise Specified; comfort care not documented/unable to determine; discharged to Other Health Care Facility; age ≥ 18 years
- Excludes patients: age < 18 years; "comfort care only" specified; not admitted; discharge destination other than Other Health Care Facility; neurology or neurosurgery follow-up not ordered or recommended.

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