Michigan Department of Community Health

Michigan Regional Trauma Resources

Region 2 South

Report Prepared by Wayne Snyder
Region 2 South Trauma Coordinator
August 2013

Contents

List of Figures

Introduction to Region 2 South

Region 2 South (R2S) is the most populous region in the state with more than 2.2 million residents. The region is comprised of Monroe, Washtenaw and Wayne counties and includes the city of Detroit. The region has two international border crossings with Canada and shares a border with northwestern Ohio. In addition to its renown as an industrial and manufacturing center, the region is also home for major corporate headquarters and several universities including the University of Michigan, Eastern Michigan University, University of Detroit Mercy, Concordia University, Madonna University, and Wayne State University.

Region 2 South is served by 35 hospitals, 92 EMS agencies, 4 EMS Medical Control Authorities and 4 local Health Departments. The region is home to eleven (13) American College of Surgeons (ACS) verified trauma centers, including three (3) Level I, five (5) Level II and two (2) Level III facilities; the region's children are served by two (2) Level I and one (1) Level II pediatric trauma centers.

The region hosts numerous major sporting and cultural events that challenge the resources of the regional trauma system, including concerts, festivals, the Detroit Grand Prix, the Ann Arbor Art Fair and several marathons. The region is home to four professional sport teams including the Detroit Tigers, Detroit Lions, Detroit Red Wings and Detroit Pistons and has hosted many major national sporting events including the Superbowl, World Series of Baseball, Stanley Cup Playoffs and National Basketball Association Finals. In addition, the University of Michigan football stadium is filled with 107,501 spectators on seven weekends each fall.

Traumatic Injuries and Fatalities

In order to address a systematic, regionalized approach to injury, it is necessary to assess regional data. Accurate assessment of data provides the means for policy development organized to address the goals of injury prevention, incident response and post-injury rehabilitation.

This data, along with other data sets including the Michigan trauma registry, will be used to enhance system performance and to drive change. The injury and fatality information that follows was abstracted from a variety of sources to provide a general sense of the current trauma problem within the region and state.

The graphs below describe the three (3) leading causes of injury related deaths and injury related hospitalizations for Region 2 South in 2010.

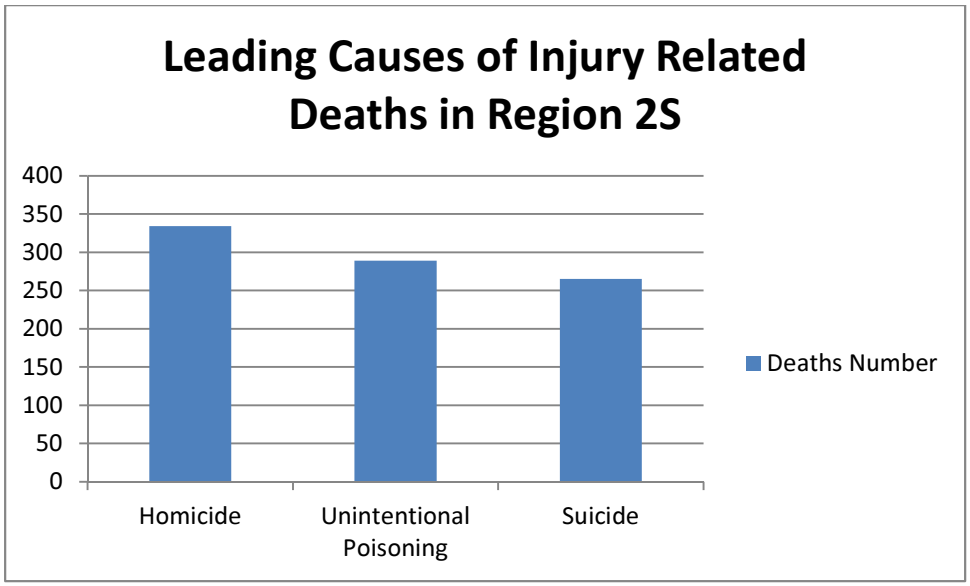

Figure 1 Region 2 South Injury Related Fatalities. Source: Tom Largo Injury Epidemiologist, MDCH Division Environmental Health, 2010 data.

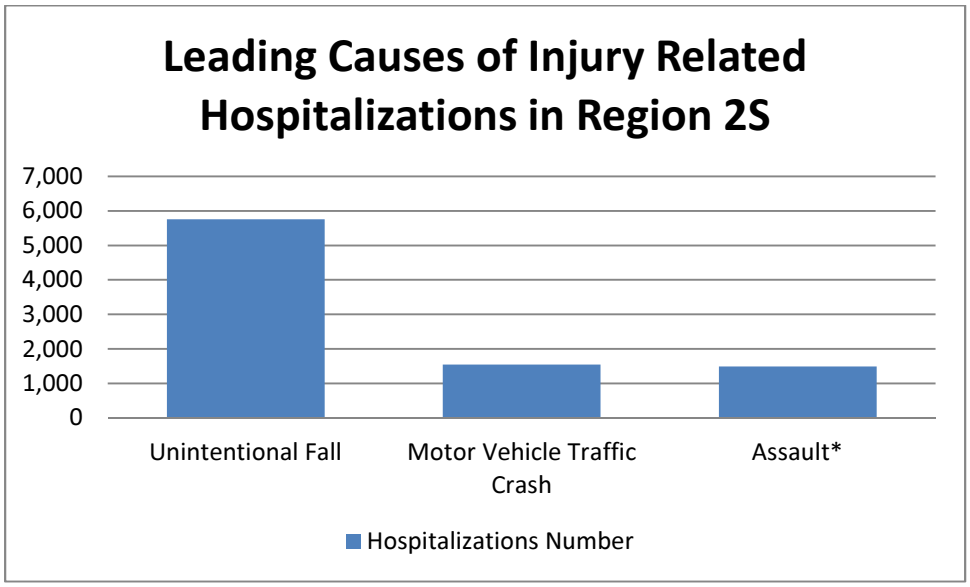

Figure 2 Region 2 South Injury Related Hospitalizations. Source: Tom Largo Injury Epidemiologist, MDCH Division Environmental Health, 2010 data.

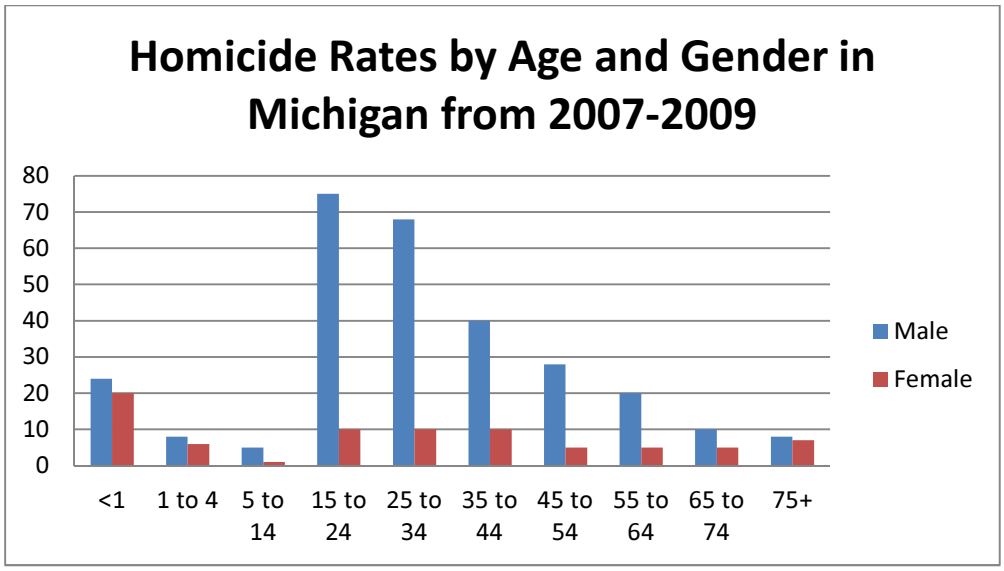

Figure 3 Michigan Homicide Statistics. Source: Michigan Department of Community Health – Injury & Violence Prevention Section, 2007-2009

Leading Causes of Injury and Death, by Age Group Michigan Residents Aged 0-19, 2007-2010

Age Group (Years)	Cause	Average Annual Deaths	Average Annual Population	Average Annual Rate
<1	1. Unintentional Suffocation	62.0	117,443	52.8
	2. Homicide	10.0	117,443	8.5
	3. Suffocation - Undetermined Intent	3.5	117,443	3.0
1-4	1. Homicide	12.3	492,184	2.5
	2. Unintentional Drowning	8.8	492,184	1.8
	3. Unintentional Exposure to Fire/Flames/Smoke	7.5	492,184	1.5
5-9	1. Motor Vehicle Traffic Crash*	10.0	647,691	1.5
	2. Homicide	4.8	647,691	0.7
	3. Unintentional Exposure to Fire/Flames/Smoke	4.3	647,691	0.7
10-14	1. Motor Vehicle Traffic Crash	17.8	691,722	2.6
	2. Suicide	8.5	691,722	1.2
	3. Homicide	7.0	691,722	1.0
15-19	1. Motor Vehicle Traffic Crash	106.0	753,455	14.1
	2. Homicide	86.5	753,455	11.5
	3. Suicide	59.8	753,455	7.9

*Those killed in motor vehicle traffic crashes include: motor vehicle occupants, motorcyclists, bicyclists, pedestrians, and others. Rates are the number of deaths per 100,000 of population. Data Source: Vital Records and Health Data Development Section, MDCH

Figure 4 Leading Causes of Death and Injury in Michigan. Source: Michigan Department of Community Health Vital Records and Health Data Development Section

Motor vehicles accidents, especially those involving alcohol and/or drugs, are a significant contributor to trauma death and hospitalization in Region 2 South. The table below compares regional and statewide statistics on motor vehicle accidents, and provides an analysis of the contribution of alcohol and/or drugs to injury and death.

Comparison of Region 2 South and Statewide Crash Injuries and Fatalities

	Statewide	Monroe County	Washtenaw County	Wayne County
2012 Population	9,883,360	151,048	350,946	1,792,359
Crash Injuries				
TOTAL	**70,519**	**987**	**2,476**	**13,664**
Rates per 10,000 population	71.35	65.34	70.55	76.23
Alcohol	4.92	6.29	4.87	4.13
Drugs	0.71	1.59	0.77	0.64
Drugs and Alcohol	0.62	0.79	0.83	0.59
No drugs or alcohol	65.10	56.67	64.08	70.88
Crash Fatalities				
TOTAL	**936**	**32**	**23**	**156**
Rates per 10,000 population	0.95	2.12	0.66	0.87
Alcohol	0.21	0.73	0.00	0.14
Drugs	0.06	0.13	0.03	0.02
Drugs and Alcohol	0.07	0.20	0.09	0.03
No drugs or alcohol	0.60	1.06	0.54	0.68

Figure 5 Comparison of Region 2 South and Michigan Crash Injuries and Fatalities. Source: 2012 Michigan Annual Drunk Driving Audit, Michigan Department of State Police Reporting and Analysis Division.

The next table looks at injury related hospital admissions and deaths by age and gender as determined by analysis of health department district. The table also measures the injury rate per 10,000 population and compares the injury death rate in each of the health department districts with the state and national death rates.

Region 2 South Injury Hospital Admissions and Deaths by Age and Gender 2010 by Health Department District

	Male								Female								Totals and Comparison Rates (10,000)						
AGE	**0-17**	**18-24**	**25-44**	**45-64**	**65-74**	**75-84**	**85 +**	**ALL HOSPITAL ADMITS**	**0-17**	**18-24**	**25-44**	**45-64**	**65-74**	**75-84**	**85 +**	**ALL HOSPITAL ADMITS**	**ALL ADMITS BOTH GENDERS**	**INJURY RATE PER 10,000**	**INJURY DEATHS**	**DEATH RATE DISTRICT**	**DEATH RATE STATE**	**DEATH RATE U.S.**
Detroit	465	494	1375	2070	592	388	189	5573	268	192	794	1628	594	608	400	4484	10,057	140.9	318	44.6	38	38.2
Wayne	403	406	1083	1898	675	691	468	5624	260	244	898	1751	924	1243	1183	6503	12,127	109.6	414	37.4	38	38.2
Washtenaw	124	120	229	362	217	136	100	1288	92	72	194	405	209	250	230	1452	2,740	79.5	78	22.6	38	38.2
Monroe	64	61	162	265	115	96	40	803	40	38	120	275	139	196	121	1732	1,732	113.9	53	34.9	38	38.2
REGION TOTALS	**1056**	**1081**	**2849**	**4595**	**1599**	**1311**	**797**	**13288**	**660**	**546**	**2006**	**4059**	**1866**	**2297**	**1934**	**13368**	**26,656**	**111.0**	**863**	**34.9**	**38**	**38.2**

Figure 6 Region 2 South Injury Hospital Admissions. Source: Michigan Department of Community Health Statistics and Reports 2010

Regional Trauma System Infrastructure

EMS Medical Control Authorities and Emergency Medical Services

A Medical Control Authority (MCA) is an organization, designated by the Michigan Department of Community Health's EMS and Trauma Services Division, for the purpose of supervising and coordinating an emergency medical services system. A hospital that treats emergency patients 24 hours a day, 7 days a week may participate in the local MCA. Each MCA is administered by the participating hospitals of the designated MCA region. The four MCAs in Region 2 South are 1) Detroit East MCA (DEMCA), 2) Monroe County MCA, 3) Washtenaw-Livingston County MCA, and 4) Wayne County MCA (HEMS). In some cases, hospitals participate in more than one medical control authority. The MCAs in Region 2 South are responsible for the supervision and oversight of 88 EMS agencies, including 26 Medical First Response, 20 Basic Life Support, 1 Limited Advanced Life Support and 47 Advanced Life Support agencies. The MCAs and affiliated hospitals of Region 2 South are shown in the table below.

Region 2 South Hospitals and Medical Control Authority Affiliation

MCA Affiliated Hospital	MCA	ACS Verified Trauma Level
William Beaumont Grosse Pointe	DEMCA	Level 3
Children's Hospital of Michigan	DEMCA	Level 1 Pediatric (ABA Burn Center)
Detroit Receiving Hospital and University Health Center	DEMCA / HEMS	Level 1 (ABA Burn Center)
Garden City Hospital	HEMS	
Henry Ford Hospital	DEMCA / HEMS	Level 1 (Burn Surge Facility)
Henry Ford Cottage	DEMCA	
Henry Ford Wyandotte	HEMS	
Henry Ford Brownstown	HEMS	
Henry Ford Fairlane	HEMS	
Mercy Memorial Hospital	Monroe	
Oakwood Hospital and Medical Center	HEMS / DEMCA	Level 2
Oakwood Annapolis	HEMS	Level 3
Oakwood Heritage	HEMS	
Oakwood Southshore	HEMS	Level 2
Oakwood Canton	HEMS	
Sinai-Grace Hospital	DEMCA / HEMS	Level 2
St. John Hospital and Medical Center	DEMCA	Level 2 Adult and Pediatric
St. Joseph Hospital and Medical Center	Washtenaw / HEMS	Level 2 (Burn Surge Facility)
St. Joseph – Chelsea	Washtenaw	
St. Joseph – Saline	Washtenaw	
St. Mary's Mercy Hospital	HEMS	
University of Michigan Hospital	Washtenaw / HEMS	Level 1 (ABA Burn Center)
University of Michigan Mott Children's Hospital	Washtenaw / HEMS	Level 1 Pediatric

Figure 7 Region 2 South Hospitals and MCA Affiliation. Source: Michigan Department of Community Health Crime Victims, EMS and Trauma Division

Governance

Part 209 of Michigan's Public Health Code (Act 368 of 1978) stipulates that the Michigan Department of Community Health "develop, implement, and promulgate rules for the implementation and operation of a statewide trauma care system within the emergency medical services system" [20910(1)(l)] in consultation with the statewide trauma care advisory (STAC) subcommittee of the state emergency

medical services coordination committee (EMSCC).The statutorily promulgated administrative rules task the department with establishing regional trauma networks (RTN) comprised of collaborating local medical control authorities within a region, and provide for supporting resources to the region consistent with criteria found in the Michigan Trauma Systems Plan (2004).

The Regional Trauma Coordinator (RTC), responsible for this report, is one of the supporting resources provided to the region by MDCH. The supporting duties of the RTC include acting as a liaison between the RTN and MDCH, the coordination of and attendance at RTN meetings, to facilitate activities related to the RTN work plan, to write reports, and to identify and address educational needs.

Regional Trauma Network and Trauma Advisory Council

All MCAs in a region are required to participate in the Regional Trauma Network, to appoint an advisory committee, and to develop a regional trauma plan. The trauma plan will encompass the comprehensive and integrated arrangement of emergency medical services, hospitals, equipment, personnel, communications, medical control authorities, and stakeholder organizations needed to provide trauma care to all patients within the region. The Region 2 South Trauma Network membership is comprised of the 4 medical directors or designees of the region's four participating medical control authorities.

Each Regional Trauma Network is tasked with developing bylaws, submitting a Regional Trauma Network application and developing a work plan to address 10 components relating to trauma activities, including: injury prevention, access to the trauma system, communications, medical oversight, pre-hospital triage criteria, trauma diversion policies, trauma bypass protocols, regional trauma treatment guidelines, regional quality improvement plans and trauma education.

The Region 2 South Trauma Network is administered by the four MCA Medical Directors, with input from the Trauma Steering Committee and the Advisory Council. The Trauma Steering Committee is comprised of the RTN Medical Directors and the Trauma Director from each trauma facility (see definition above) in the region. The Trauma Steering Committee is co-chaired by Michigan licensed physicians, one board certified (emergency medicine) EMS Medical Director and one board certified (general surgery) Trauma Director. The Trauma Steering Committee co-chairs are also the co-chairs for the Advisory Council.

The goal of each region's trauma network and advisory committee is to implement an "all-inclusive" trauma system in their region. This system will provide for the care of all injured patients in a regional and statewide integrated system of health care for both the pre-hospital and healthcare facility environments, and will include personnel that are well trained and equipped to care for injured patients of any severity. Each healthcare facility can participate in the trauma system to the extent or level that it is willing to commit the resources necessary for the appropriate management of the trauma patients. This ensures that all trauma patients are served by a system of coordinated care, based on the degree of injury and extent of care required.

The purpose of the Regional Trauma Advisory Committee is to provide leadership and direction in matters related to trauma systems development in the region, and to monitor the performance of the agencies and healthcare facilities within the region, including, but not limited to, the review of trauma deaths and preventable complications. The R2S RTN has broadened membership eligibility for the Advisory Council in order to maximize the inclusion of the region's constituents. The Regional Trauma Advisory Council is comprised of the following representative roles:

- EMS Medical Director, or designee, from each MCA

- MCA Administrative representative from each MCA
- Trauma Director, or designee, from each trauma facility*
- Trauma Program Manager from each trauma facility*
- Trauma Registrar from each trauma facility*
- Trauma Nurse Representative from each trauma facility*
- Trauma Outreach and Prevention Coordinator from each trauma facility*
- Emergency Department Physician representative from licensed hospitals and free standing surgical outpatient facilities (as defined in EMS statute section 20918 (1))
- Emergency Department Nurse representative from licensed hospitals and free standing surgical outpatient facilities (as defined in EMS statute section 20918 (1))
- Life Support Agency, EMS personnel and Consumer representatives as appointed by each MCA within the RTN, to include (as example);
    - Protocol Committee / Advisory Committee Chairperson
    - EMS Personnel representative
    - Life Support Agency representative
    - EMS Communication representative
    - Consumer representative not affiliated with the EMS or hospital systems
    - Trauma facility is defined as an ACS verified trauma facility, a provisionally approved trauma facility, or a facility actively seeking verification.

Members of the Region 2 South Advisory Council are designated in writing by the appointing MCA, hospital, Life Support Agency or other organization. Alternate members may be designated, and the appointing body may remove and replace its representative(s) at any time at its discretion.

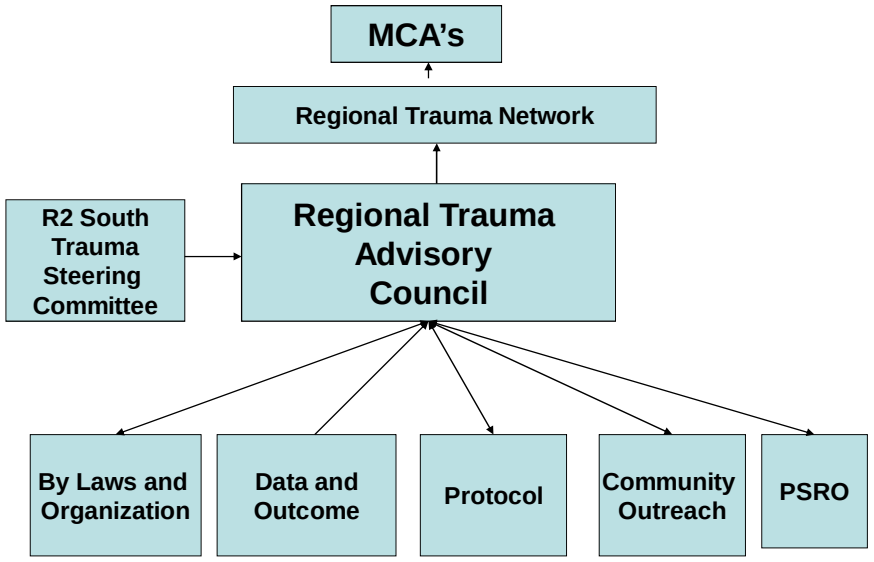

Figure 8 Region 2 South Trauma Network Organizational Chart

The RTN is also required to appoint a regional professional standards review organization (RPSRO) to improve trauma care, reduce death and disability, and to correct local and regional injury problems. The RPSRO is responsible for the regional trauma system improvement process addressing specific standards incorporated in the administrative rule 325.135(5).

Each region is required to develop and implement a region wide trauma performance improvement program. The region is responsible for the assessment of its trauma care system through an ongoing evaluation of the components of the regional plan, triage criteria and its effectiveness, activation of trauma teams, notification of specialists and trauma care diversion. The results of the evaluation are to be reported annually to MDCH, to include all region-wide policies, procedures, and protocols.

The RTN has also established several sub-committees of the Advisory Council. The sub-committees appoint their individual chairpersons. The activities of the sub-committees must be approved by the Advisory Council before being submitted to the RTN for approval. The sub-committees are intended to address fundamental aspects of trauma system services and to support the development and writing of reports.

Region 2 South Pediatric Demographics and Hospital Beds (2011)

County	Population (2011)	Pediatric Population	Pediatric Percent of Total	Hospital	Number of Pediatric Beds
Monroe	151,560	35,919	23.6%	**Mercy Memorial**	15
Washtenaw	347,962	69,940	20%	**St Joseph Mercy Hospital**	30
				St Joseph Chelsea	0
				St Joseph Mercy Saline	0
				University of Michigan	0
				CS Mott Children's	348*
Wayne	1,802,096	448,722	24.9%	**Beaumont Grosse Pointe**	10
				Detroit Receiving	0
				Children's Hospital	228
				Harper Hutzel	63
				Henry Ford Hospital	35
				Henry Ford Brownstown	0
				Henry Ford Cottage	0
				Henry Ford Fairlane	0
				Henry Ford Wyandotte	4
				Oakwood Hospital	60
				Oakwood Annapolis	0
				Oakwood Canton	0
				Oakwood Heritage	0
				Oakwood Southshore	0
				Sinai Grace Hospital	21
				St. John Hospital	87
TOTALS	**2,301,618**	**554,581**	**24%**	**TOTAL**	**897**

Figure 9 Region 2 South Population and Pediatric Hospital Beds. Source: Michigan Department of Community Health Crime Victims, EMS and Trauma Division

*New hospital opened and updated 2013

MDCH 2013 Trauma Needs Assessment

In July 2013, the MDCH EMS & Trauma Section sent out a survey request to the hospitals in the 8 trauma regions. The intent of the survey was to provide information to regional stakeholders regarding the assets, resources and demographics of their individual regions in order to assist in the development of regional trauma plans.

Thirteen hospitals in Region 2 South responded to the survey. The following graphs and tables represent the region's survey responses.

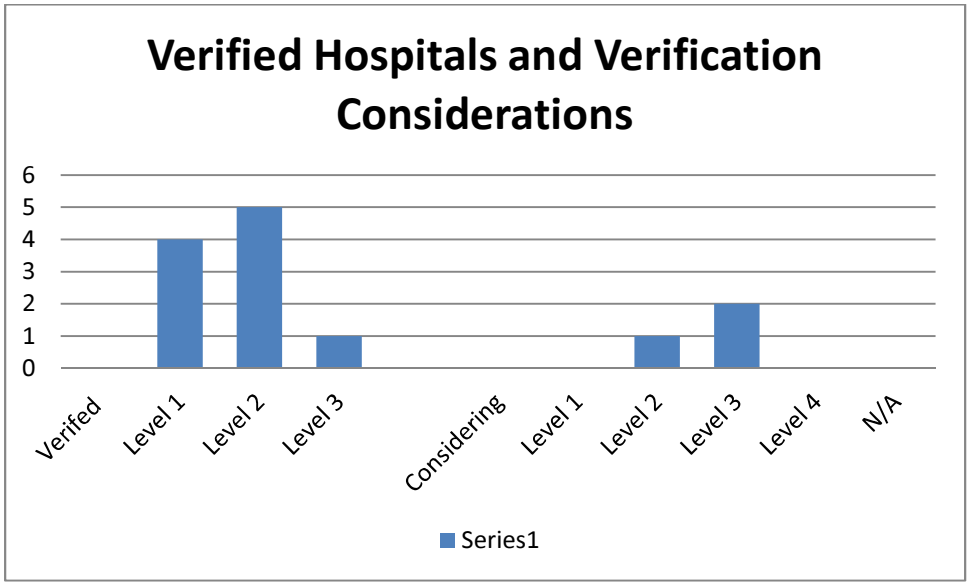

Figure 10 Region 2 South Hospital ACS Verification Level and Considered Level. Source: 2013 MDCH Hospital Survey.

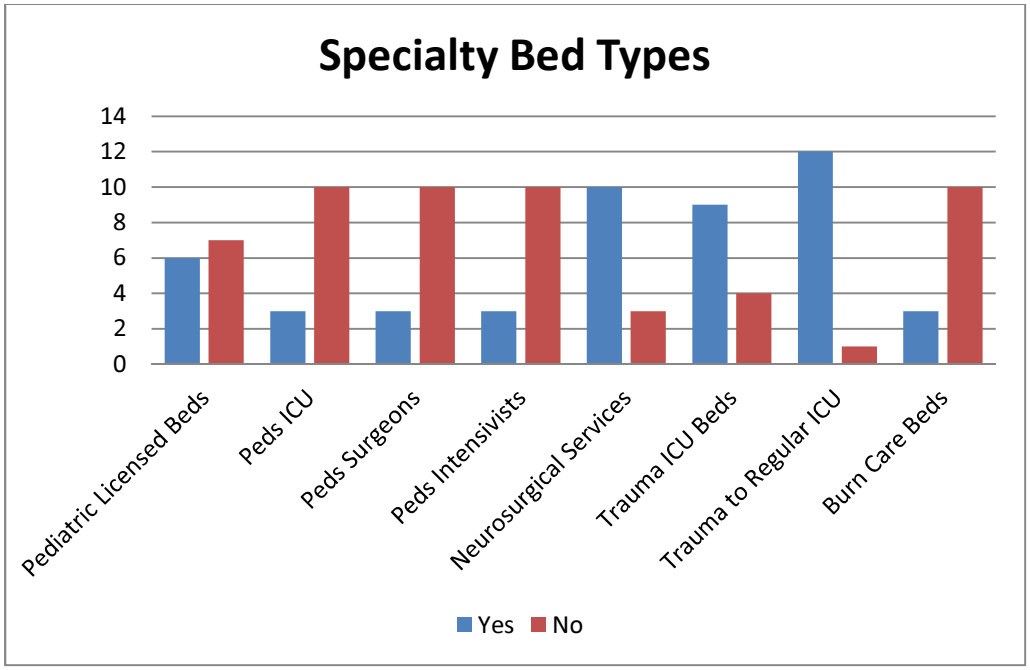

Figure 11 Region 2 South Specialty Bed Resources. Source: 2013 MDCH Hospital Survey.

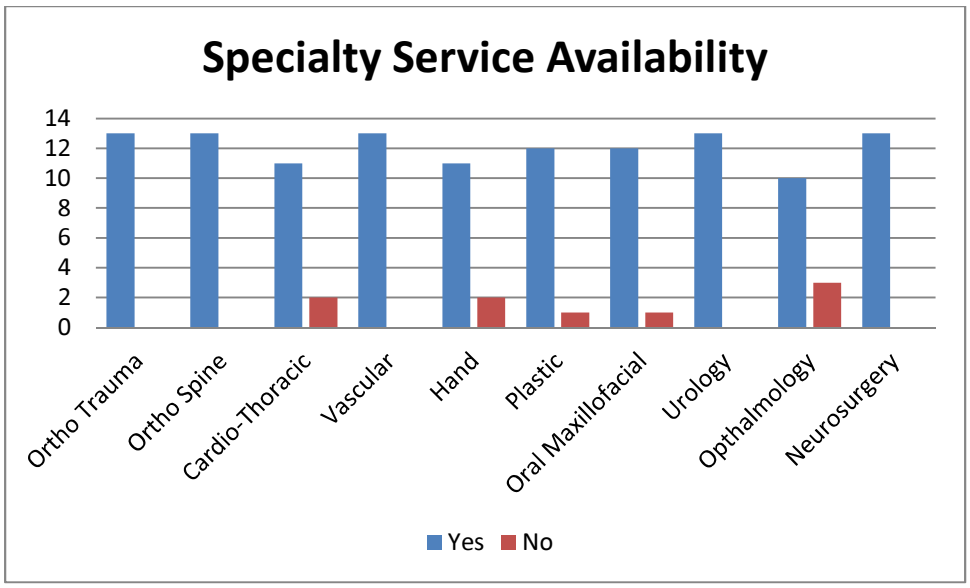

Figure 12 Region 2 South Specialty Service Resources. Source: 2013 MDCH Hospital Survey.

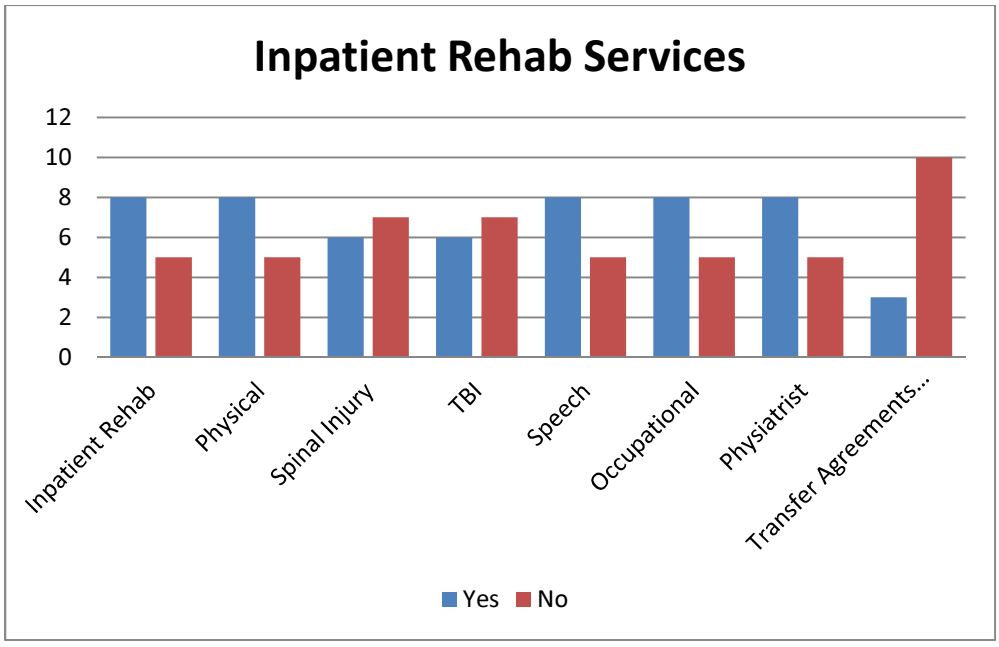

Figure 13 Region 2 South Inpatient Rehabilitation Service Resources. Source: 2013 MDCH Hospital Survey.

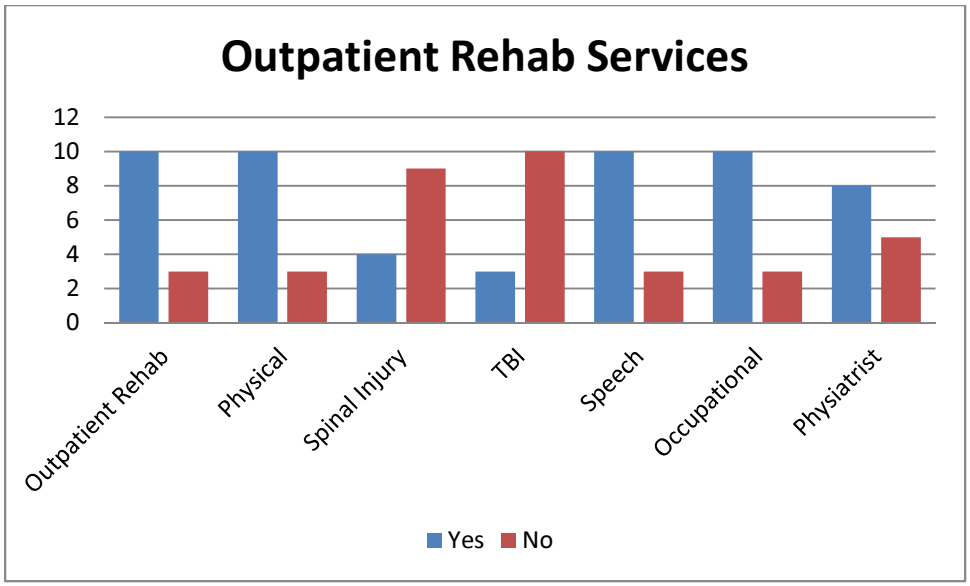

Figure 14 Region 2 South Outpatient Rehabilitation Service Resources. Source: 2013 MDCH Hospital Survey.

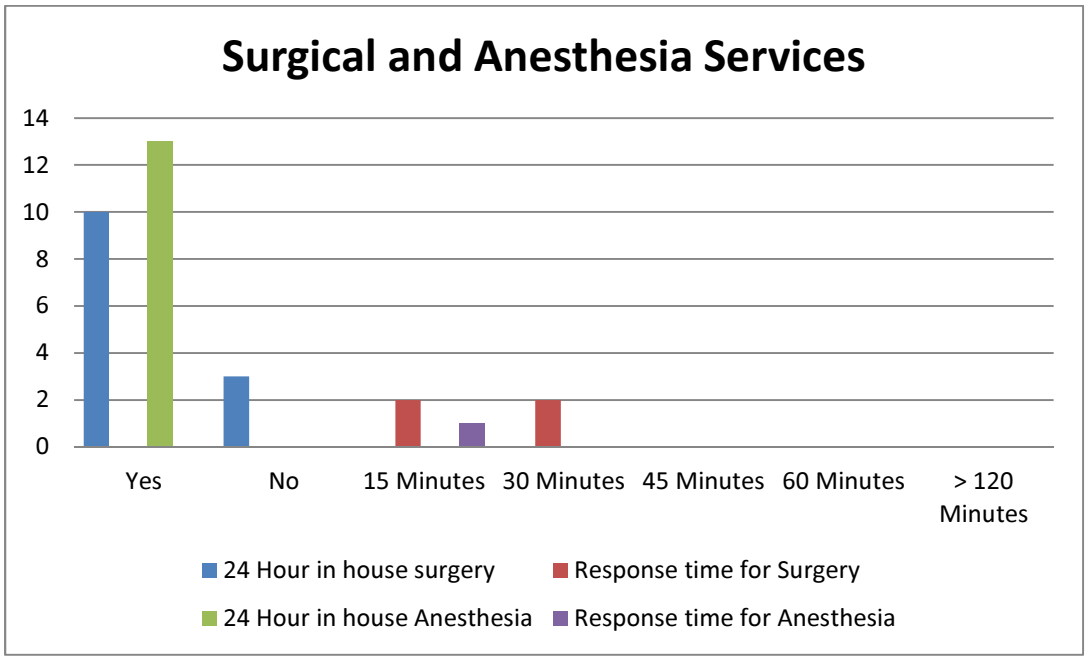

Figure 15 Region 2 South Surgical and Anesthesia Service Resources. Source: 2013 MDCH Hospital Survey.

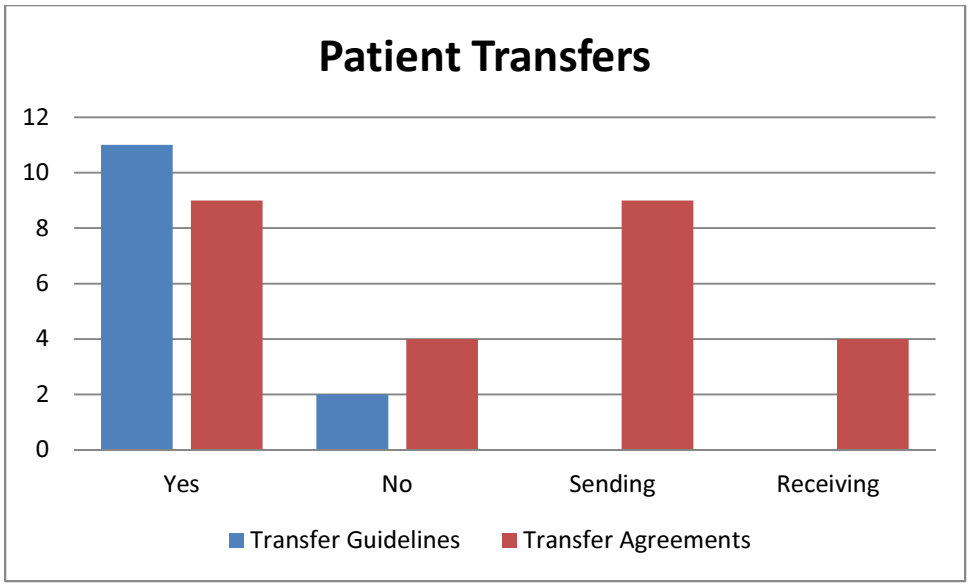

Figure 16 Region 2 South Hospitals with Adult Patient Written Transfer Agreements and Guidelines. Source: 2013 MDCH Hospital Survey.

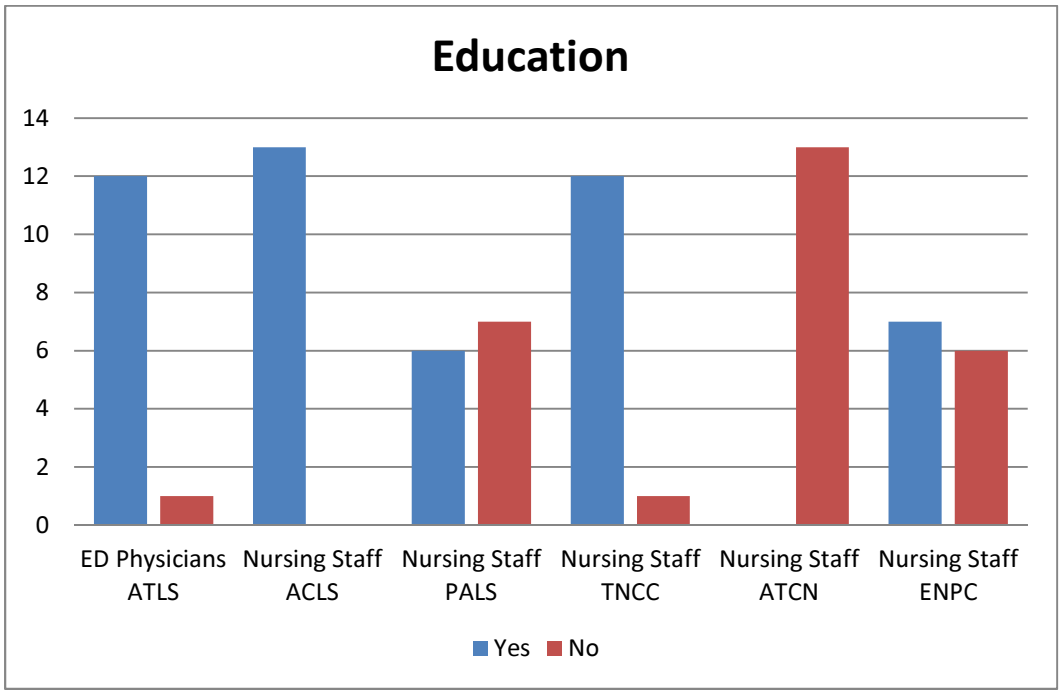

Figure 17 Region 2 South Hospitals Emergency Department Trauma Education Requirements. Source: 2013 MDCH Hospital Survey.

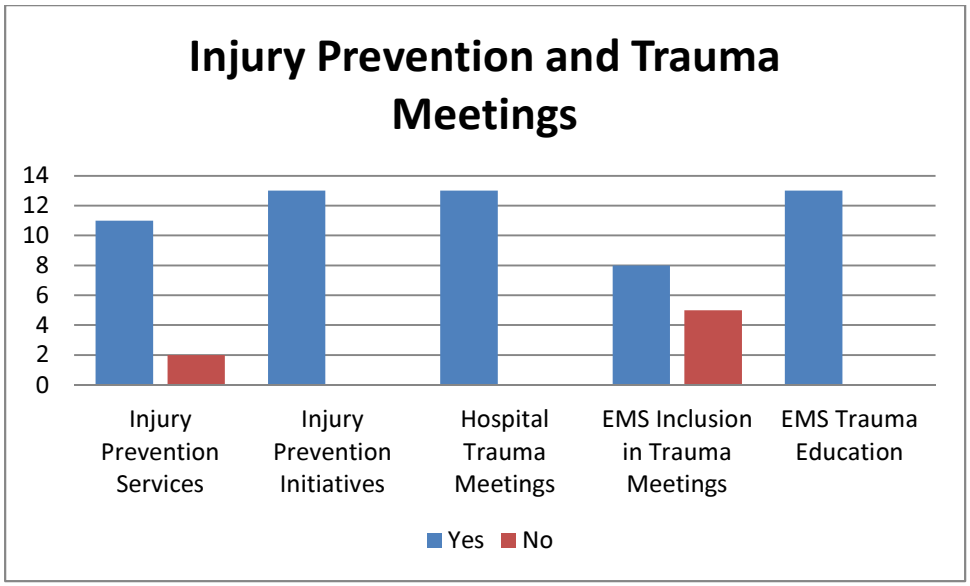

Figure 18 Region 2 South Hospitals Injury Prevention and Trauma Meeting Participation* . Source: 2013 MDCH Hospital Survey.

* Questions asked for this figure:
Do you provide any injury prevention services/programs in your community?
Do you participate in injury prevention initiatives in your community?
Does your hospital have meetings to address trauma related issues?
Do you include EMS providers in your trauma meetings?
Do you include EMS providers in your trauma education opportunities?

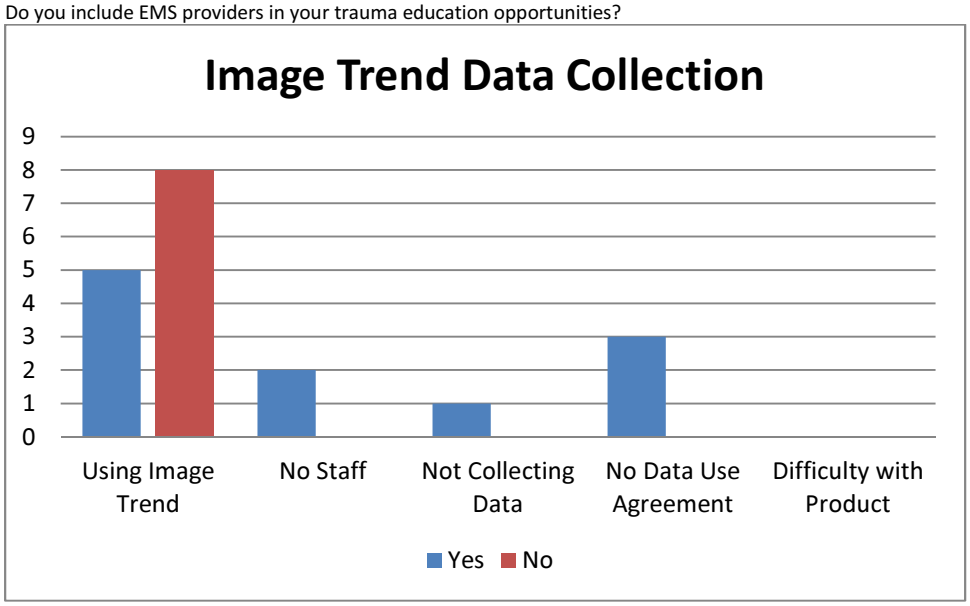

Figure 19 Region 2 South Hospitals State Trauma Data Base Submissions* . Source: 2013 MDCH Hospital Survey.

*Questions asked for this figure:
Are you submitting data quarterly to the state data base (Image Trend)?
If you are not submitting data, what are the reasons you are not?

Summary

The goal of each trauma network and advisory committee is to implement an “all-inclusive” trauma system in their region. This system will allow for the care of all injured patients in an integrated system of health care in both the pre-hospital and healthcare facility environments, and will include personnel that are well trained and equipped to care for any injury severity. Each healthcare facility can participate in the system to the extent or level that it is willing to commit the resources necessary for the appropriate management of the trauma patients. This will ensure that all trauma patients are served by a system of coordinated care, based on the degree of injury and level of care required.

This regional resource overview is intended to be a “living document” providing the partners and stakeholders in trauma care a common understanding of the assets and resources available in Region 2 South. It is expected that this report will continue to evolve as the regional trauma system develops and matures.