

The Analytics

EMERGENCY



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Emergency Services

- Large Health care system
- 6 Emergency departments (currently adding 2 more)
- Over 289,000 emergency department visits per year
- CareFlight Air Ambulance Program
- Service Line Structure

Analytics

- Group of six Architects and Developers
- Requirements gathering > design > build > test > deploy > maintain
- Report writing, dashboard development, data warehouse design and build
- SSIS, WebI, Microsoft, SAP Business Objects

Anyone There?

- Ever been to the ED?
 - Why...Because you thought you had an emergency?
- Ever felt the ED staff didn't share your sense of urgency?
 - Shouldn't things be happening quickly?
- Ever wondered if there were really even doctors "back there?"



We have to have Data to Improve

- Improve what?
- Improve where?
- Improve who?
- How?
- How much?



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Situation: ED Leadership Needs to Drive Change

We need data/information first. What do we have today?

- Multiple sources of electronic information followed by manual manipulation due to incomplete/incorrect electronic documentation and application of 'local' rules > CHAOS
- Manually abstracted, sampled data from medical record required for CMS (Medicare) submission
- No system-level sponsorship of metrics
- No standards across the system
- Limited ownership and buy-in from physicians
- Inability to have data readily available across the system



And Finally

- How do we stop arguing about the 'rightness' of the data and focus on the problems?

- How do I stop spending so much time talking about the data, the data, the data? I want to talk about the

process

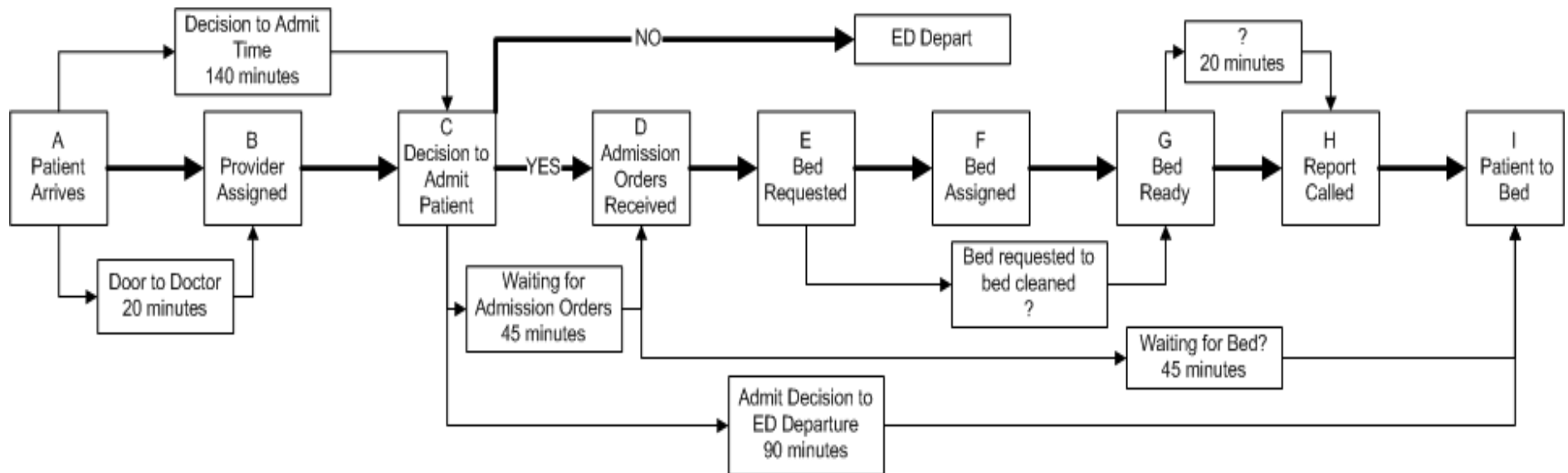
- I want to help the patient



Action: Define and Build

- October 2013 – ED Leadership committee makes request for ED analytics for all of Premier Health
- Service Line VP charged with oversight
- Requirements phase takes over two months
- Build broken into two phases:
 - Phase 1 = Demographics, CMS core measures/timing events, data consistency report
 - Phase 2 = Other timing events
- Phase one complete March 2014
- Phase two is ongoing

ED Flow



Demographics

DEMOGRAPHICS - PREMIER HEALTH

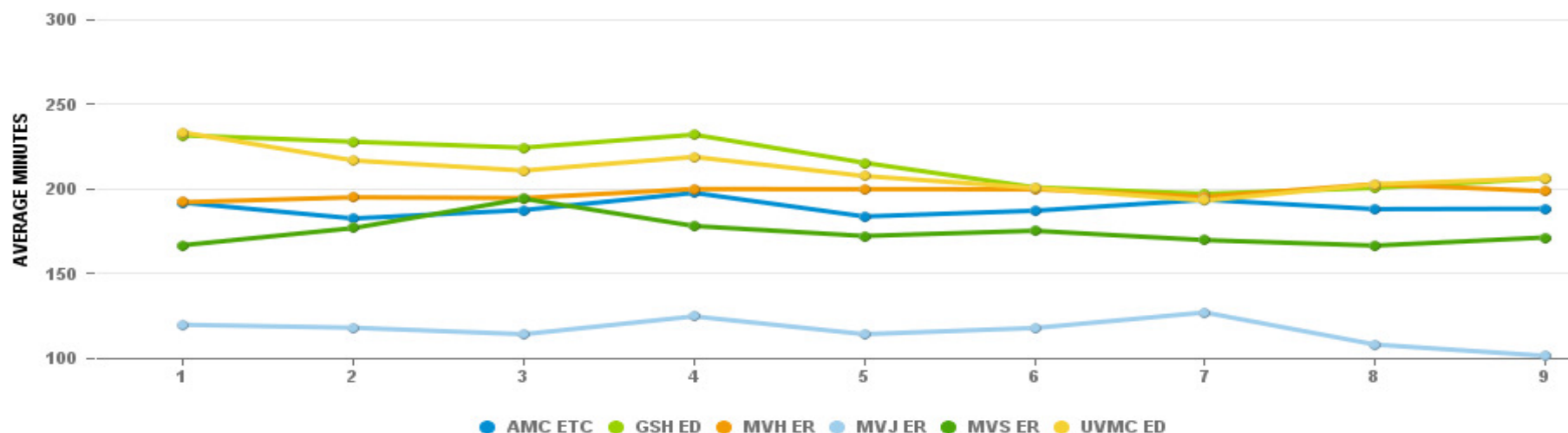
YEARS: 2012 - 2014 MONTHS: 1;2;3;4;5;6;7;8;9;10;11;12

2014

	1	2	3	4	5	6	7	8	9	TOTAL
VISITS	22,795	20,387	23,692	23,573	24,375	24,413	24,985	25,913	25,793	215,926
SQUADS	5,859	5,190	5,639	5,427	5,675	5,674	5,915	6,032	5,818	51,229
LWOTs	319	217	393	505	414	426	395	490	490	3,649
PATIENT FLOW:										
INPATIENT	3,022	2,524	2,776	3,009	2,922	2,885	2,944	2,795	2,898	25,775
OBSERVATION	2,609	2,327	2,785	2,597	2,587	2,427	2,606	2,773	2,588	23,299
FINAL PATIENT CLASS:										
INPATIENT	3,750	3,095	3,434	3,562	3,505	3,422	3,504	3,351	3,384	31,006
OBSERVATION	1,880	1,750	2,121	2,040	2,002	1,887	2,046	2,218	2,096	18,040



Total Length of Stay



		1	2	3	4	5	6	7	8	9	AVERAGE AND CASES
AMC ETC	AVG	192	183	188	198	184	187	194	188	188	189
	CASES	4,755	4,105	4,765	4,810	4,845	4,836	4,902	5,186	5,090	43,294
GSH ED	AVG	232	228	224	232	216	201	197	201	206	215
	CASES	4,656	4,082	4,678	4,739	4,896	4,950	5,127	5,287	5,375	43,790
MVH ER	AVG	192	195	195	200	200	200	195	203	199	198
	CASES	7,090	6,342	7,550	7,549	7,747	7,835	7,867	8,089	7,862	67,931
MVJ ER	AVG	120	118	114	125	114	118	127	108	101	116
	CASES	433	407	463	425	470	502	547	599	603	4,449
MVS ER	AVG	167	177	194	178	172	175	170	167	171	175
	CASES	2,409	2,265	2,582	2,548	2,720	2,702	2,749	2,790	2,847	23,612
UVMC ED	AVG	234	217	211	219	208	201	193	203	207	210
	CASES	3,444	3,177	3,649	3,497	3,689	3,578	3,787	3,952	3,920	32,693
PH	AVG	202	199	200	205	196	193	191	193	194	197
	CASES	22,787	20,378	23,687	23,568	24,367	24,403	24,979	25,903	25,697	215,769

Difficulties:

- Defining the key metrics that drive action
- Visualization of information and dashboards are difficult to explain to customers
- Security and privacy issues
- Determining process change that is required to capture the data accurately and electronically
- Validation and acceptance of the 'new' data and stopping the 'old' data

or

Finding the 'Data Trolls'



Defining **Key Metrics**: What am I Going To Do With This Information?

- What action do you want to drive?
- What decisions are you going to make?
- What is most important to you?
- How do you tell your story?

Visualization - What will it look like?

- What do you want it to look like?
- What is your logic for using the data to understand where the problems are occurring?
- What drill-down capability do you need?

Rapid – prototyping would help dramatically

Security/Privacy - Who gets to see MY numbers?

- Comparing one ED with another?

Or worse

- Physician metrics seen by all?

Why is My Data Entry Job Important?

- Garbage in... does it come out? Should I care?
- Registrars were shown the impact of the data they created in the system
 - Dashboards
 - Decisions on patient care that would be made using this data

My data is best?

- Data Governance
 - agreement on the definitions
 - how do you use the data to drive change
- Finding the source of local data
 - Who is creating it?
 - How is it used?
 - Who is asking for it - Cut it off at the need



Present Situation

- We have established Service Line sponsorship
- We are using the discrete data available within the EMR
- We have standardized our metrics across the hospital system
- We have created dashboards for key metrics, drillable to hospital, provider type, and the individual provider.
 - Volume
 - Patient disposition
 - Squad arrivals
 - Length of stay metrics.
- We have created individual provider scorecards
- We are working on data governance

What is Improving?

- Standardized, sponsored, accurate information has significantly reduced the data 'distractions'

We are talking about the PROCESS

- Physician buy-in and accountability has gained traction
- Using the data to pinpoint problem areas
 - Reduced door to doctor time 20% at one of our larger hospitals
 - Reduced overall system length of stay 5%
 - The ER's that have more energetically embraced/owned the data have been able to improve more rapidly.

What about the patient?

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So – What is Analytics Good For?

- Having consistent, believable and accepted information is necessary so that you can stop arguing about the data, and allow it to be an outcome, and not carry on a life of its own.
- Establishing ‘living’ data, owned by the business, and used to drive process conversations
- Driving accountability and outcomes
- Telling the Story