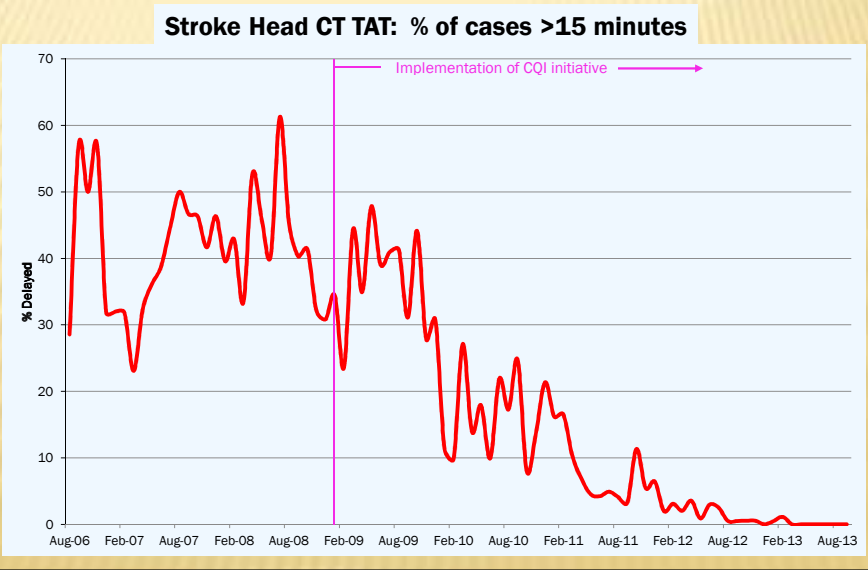
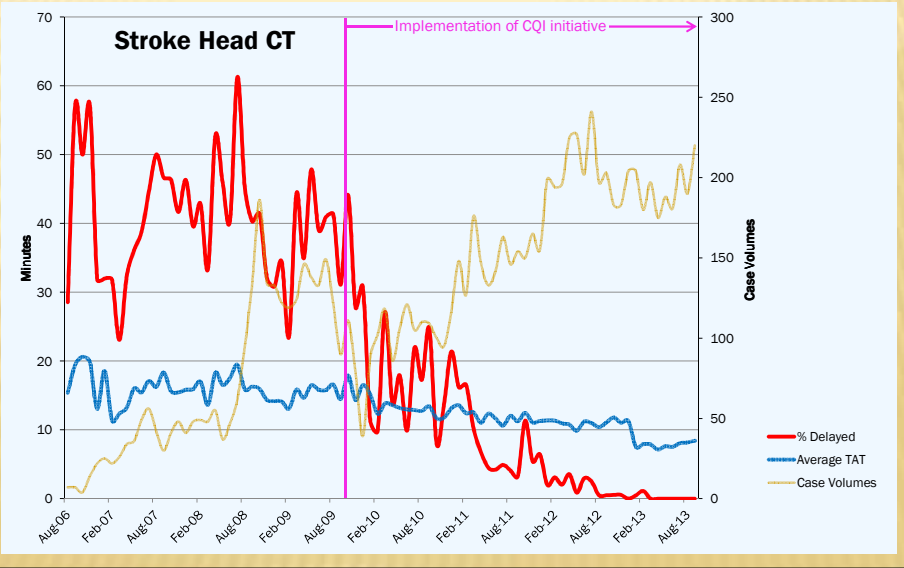
Reducing TAT for head CT reports via CQI methods: GOAL ACHIEVED!



Our CQI success story: we continue to send *100%* of stroke head CT reports in less than 15 minutes, and reduce average TAT, even while facing rising stroke head CT volumes....



BACKGROUND: ISCHEMIC INFARCTION

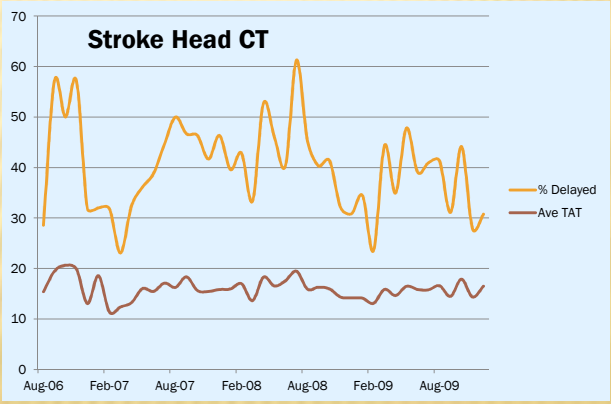
- Over the last 10 years, there has been increasing recognition that time lost is brain lost.
- Clinical Goal: exclude intracranial hemorrhage and start thrombolysis ASAP, optimally within 90 of symptom onset.

THE NEED: RAPID HEAD CT REPORTING

- In 2006, Teleradiology Solutions (TRS) initiated prioritized reporting of "Stroke Protocol" head CTs, with a 15 minute goal.
- In 2009, the first client also adopted this goal.
- In 2010, the American Heart Ass. publicized a 1-hour door-to-needle goal, including up to 20 minutes for radiology reporting. (AHA/ASA 2010 Stroke Campaign Manual)
- As of 2013, all TRS clients had adopted a 15 minute goal.

THE REALITY: 15 MIN TAT IS DIFFICULT

- Between 2006 and 2009, average TAT was only 16.0 min, but 40% of cases exceeded 15 min.



CQI STEP 1: DEFINE THE METRIC

- Of concern to clients (and patients): delayed cases, not average TAT
- Metric: % of cases reported in < 15 minutes
- Start time: all images and order are received by TRS.
- End time: reporting call is connected.

CQI STEP 2: PLAN

- The causes of delayed reporting were mostly unknown.
- List as many associations as possible, and measure correlation with TAT (more sensitive than the metric for small samples):
- Example:

	All Rads	Rad A
Mean TAT (min)	10.6	16.2
# Observations	113	8

CQI STEP 3: MEASURE CORRELATIONS

Report type (pos/neg)	+ (pos)
Radiologist	+
Radiologist location	-
Weekday/weekend	-
Patient age and gender	-
Multiple exams	+
Number of images (<>45)	-
Call by radiologist/assistant	+ (radiologist)
Time of day (6 hour blocks)	-
Exam complete vs Incomplete	-
Prior exams	-
Hospital	+

… AND ACQUIRE RFD DATA

- Mandatory Reason for Delay (RFD) on all delayed reports.
- Most common RFD:
  - Busy
  - Complex protocol (CTA, perfusion)
  - Complex report
  - Order changed to stroke
  - TAT not adjusted per metric
  - Long hold time

CQI STEP 4: IMPLEMENTATION

- Workflow Changes:
  - Coordinator immediately notifies radiologists of stroke exams.
  - Cases assigned to fasted radiologist.
  - Radiologist informs if busy, and stroke case reassigned.
  - If probable stroke exam is ordered incorrectly, treat as stroke while confirming.
  - TAT times calculated as per metric definition.
  - Radiologist calls results before entering report or receiving prior images/report.
  - All teams (order entry, radiologist, proofer, call center) trained re importance of stroke exams and protocols.
  - Mandatory RFD on delayed cases.
  - Stroke TATs are discussed in every monthly radiologist conference.
  - Work with hospitals to:
    - Unbundle multiple exams
    - Specify stroke exams
    - Facilitate radiologist calls to providers

CQI STEP 5: RE-MEASURE

- Daily: Collect RFD
- Monthly
  - Calculate % delayed case statistics
  - Share summarized data with staff and radiologists
  - Evaluate which RFD have been resolved and which still need action
- As need: Re-measure correlations with possible associations as needed (done 2x)

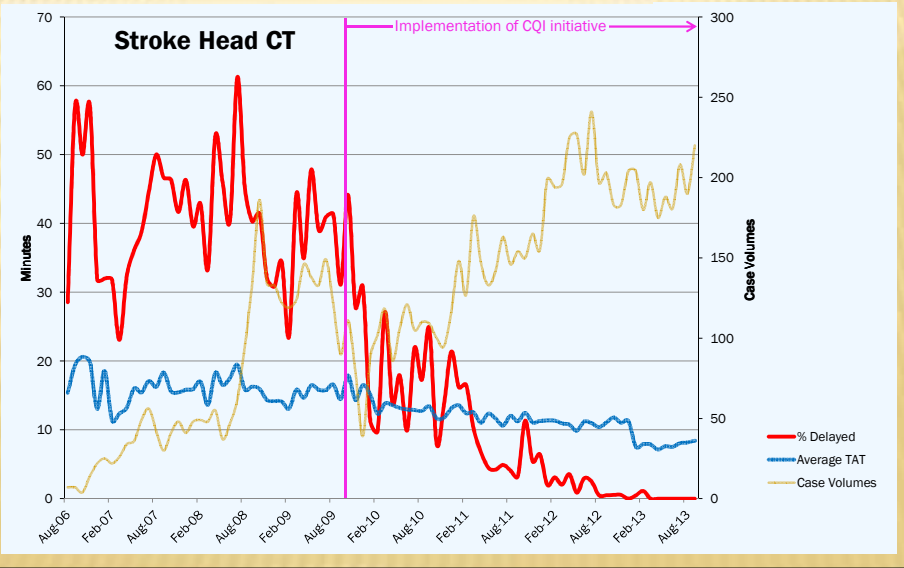
SAMPLE MONTH RFD ANALYSIS

2010	Aug & Sept	Oct
Reason For Delay	**# cases**	**# cases**
unknown	4	2
Orders needs corrections	1	
images arrived late	1	
delayed order entry	1	6
Prior exam	1	
on hold with hospital	3	3
Busy	1	
report not noticed, resent	1	
Additional history needed	1	
2nd opinion needed	1	
doc would only speak w rad	1	
complex		2
Radiologist busy		4
RIS/PACS problem		2

Delayed cases covered by ***prior*** policies.

Delayed cases covered by ***new*** policies.

CQI STEP 6: GOAL ACHIEVED



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