

# Michigan Heat-Related Illness, Emergency Department Visits: June 25, 2013

## **Executive Summary**

There were a total of 200 visits due to dehydration, sun-associated complaints, and heat-associated complaints that occurred during the week of June 16 to June 22, 2013, for an average of 28.6 visits per day. To date in 2013, Michigan has not experienced a significant increase in overall heat-related illnesses as temperatures have gradually increased (see Figures 1, 2, 6). Increases have been observed among heat-associated and sun-associated complaints (see Figures 4, 5, 7). The weekly age-distribution of heat-related illnesses has remained within normal variation so far this season (Figure 3).

## **Description of the Data**

Heat-related emergency department (ED) visits were identified using the Michigan Syndromic Surveillance System which gathers data from participating hospital emergency departments across the state. "Heat-related illness" complaints are defined as daily ED visits with the primary complaints of: "hyperthermia" "heat", "sun", "prostration", or "dehydration" (including word derivatives and misspellings). Terms that have been identified in the search, but do not indicate heat-related illness, such as "wheat", are excluded.

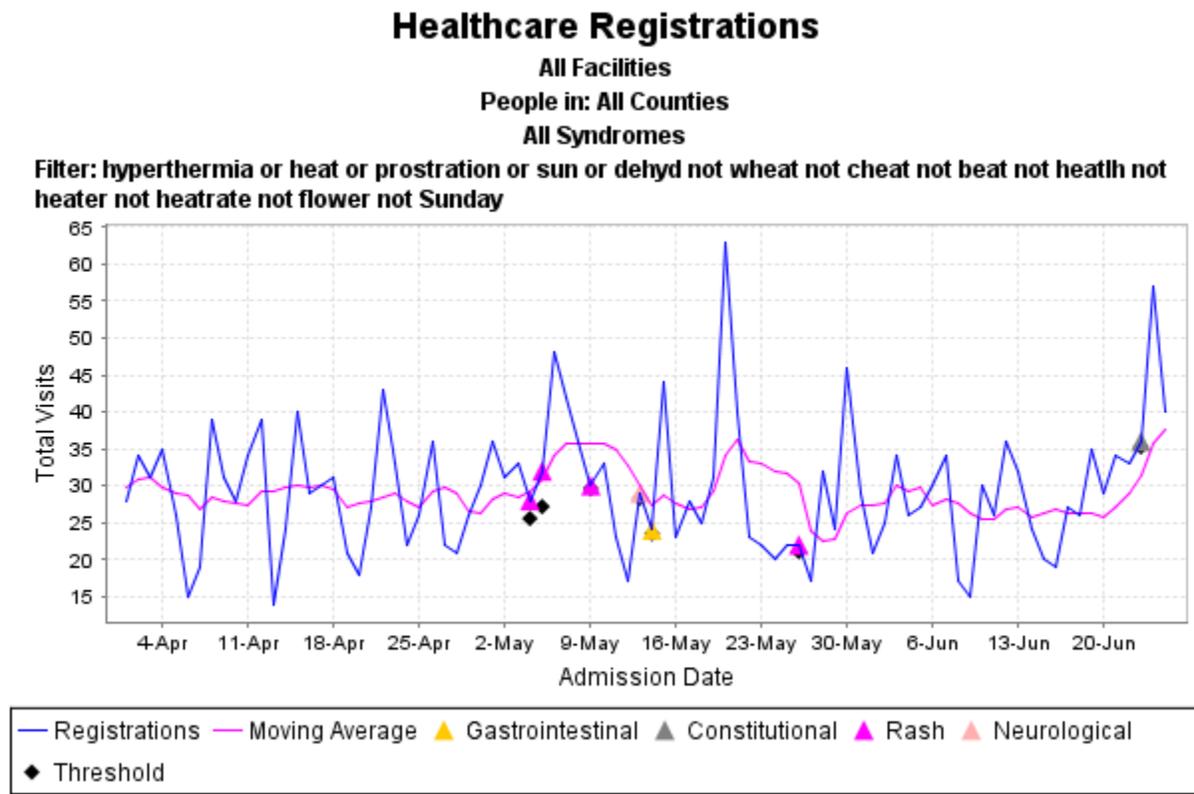
Heat-related illness complaints were categorized into one of three syndromes based on the chief complaint.

- Sun-associated: sunburn, sun poisoning, sunscreen reactions
- Heat-associated: heat exhaustion, heat stroke, heat reaction
- Dehydration

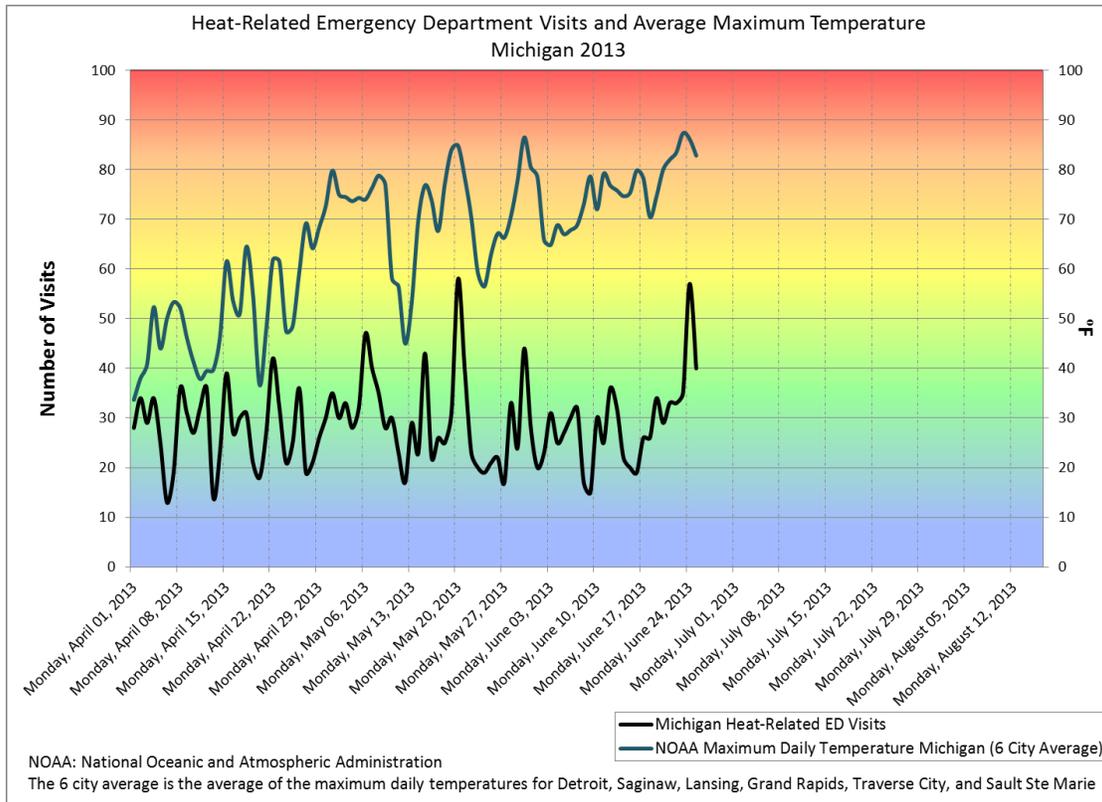
**Note:** Due to the nature of categorizing ED complaint data, these visits do not represent all potential cases of heat-related illness. These data may also represent non-heat-related illnesses, i.e. dehydration due to other causes. However, the data can be used to describe trends in illness presentations over time.

## **Data as of June 25, 2013**

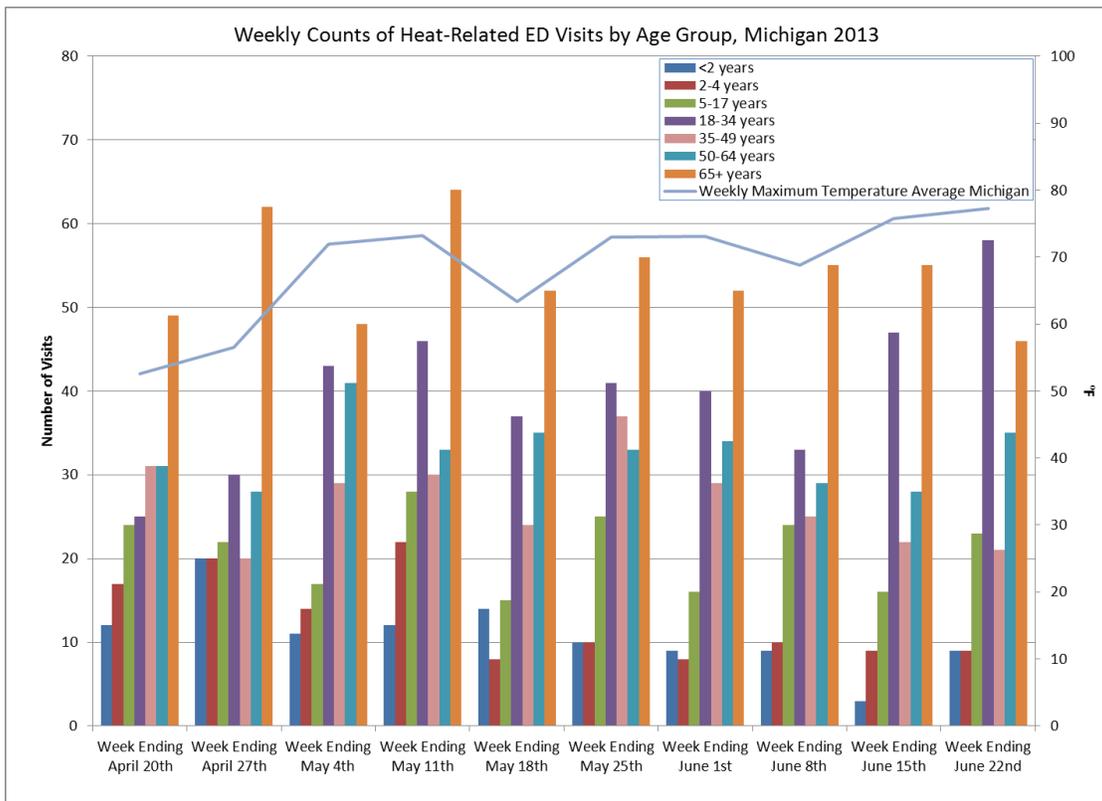
**Figure 1:** Daily Counts of Statewide Heat-Related ED Visits (April 1 – June 25, 2013)



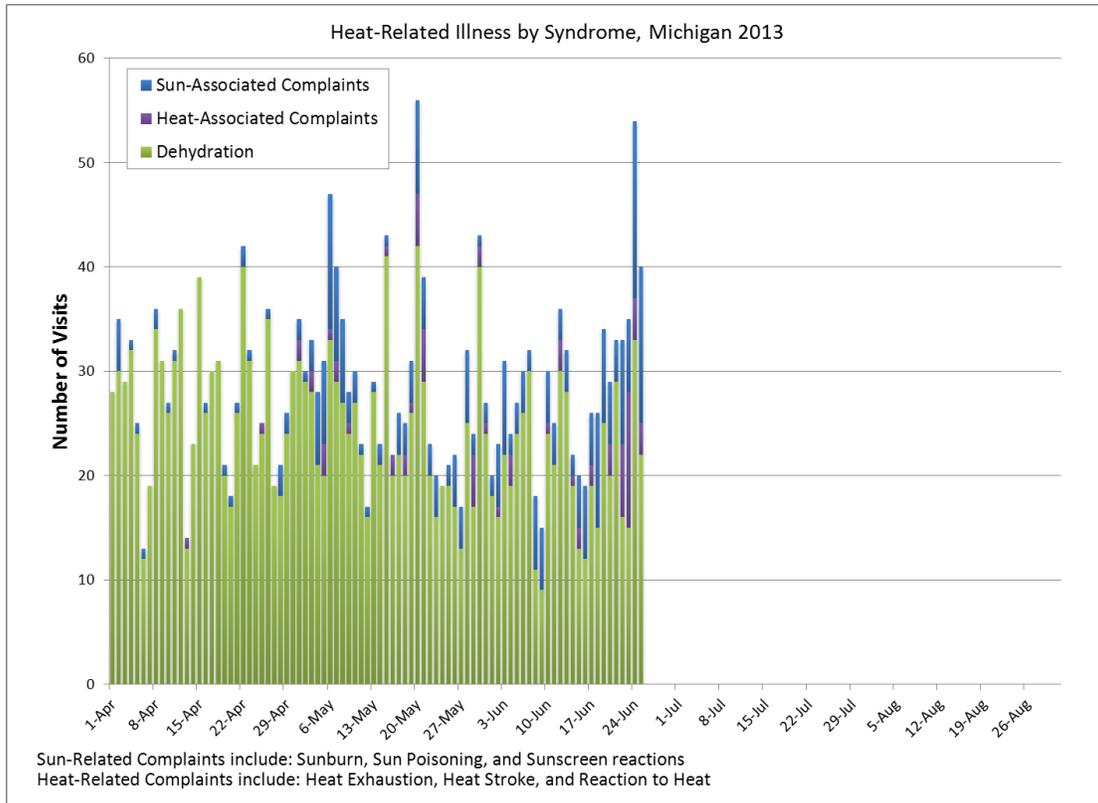
**Figure 2: Statewide Heat-Related ED Visits and National Oceanic and Atmospheric Administration (NOAA) maximum daily temperature averages for 6 select cities (April 1 – June 25, 2013)**



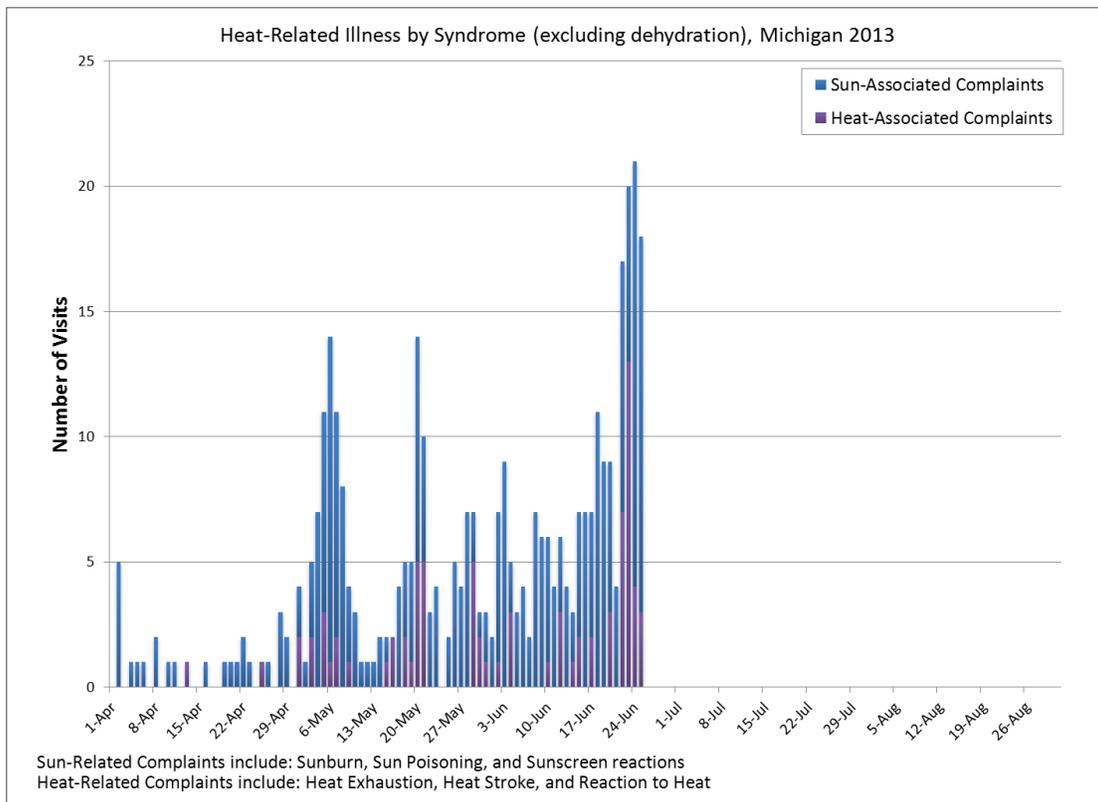
**Figure 3: Age Distribution of Heat-Related ED Visits by Week (April 9 – June 22, 2013)**



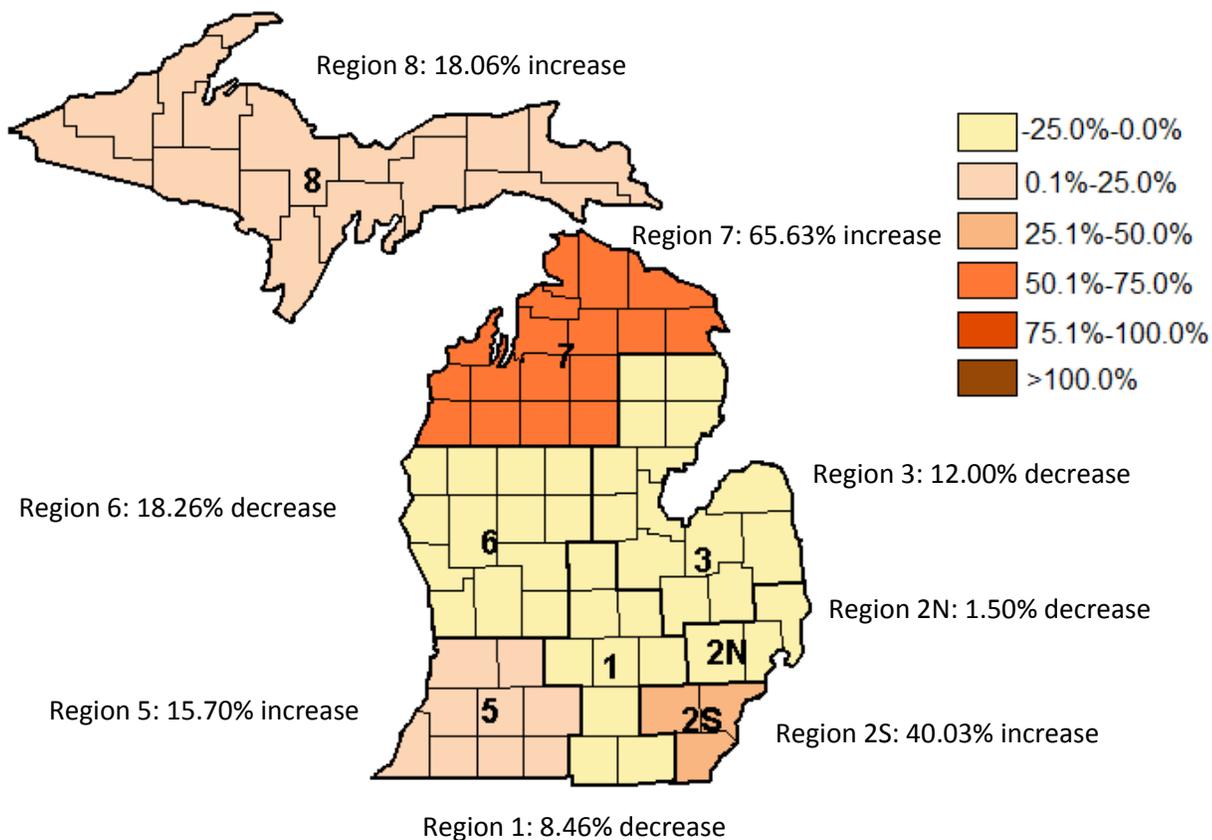
**Figure 4: Statewide Heat-Related ED Visits by syndrome (April 1 – June 25, 2013)**



**Figure 5: Statewide Heat-Related ED Visits by syndrome excluding dehydration (April 1 – June 25, 2013)**



**Figure 6: Percent Change of Heat-Related Emergency Department Visits by Region: Week Ending June 22, 2013 Compared to Week Ending June 15, 2013**



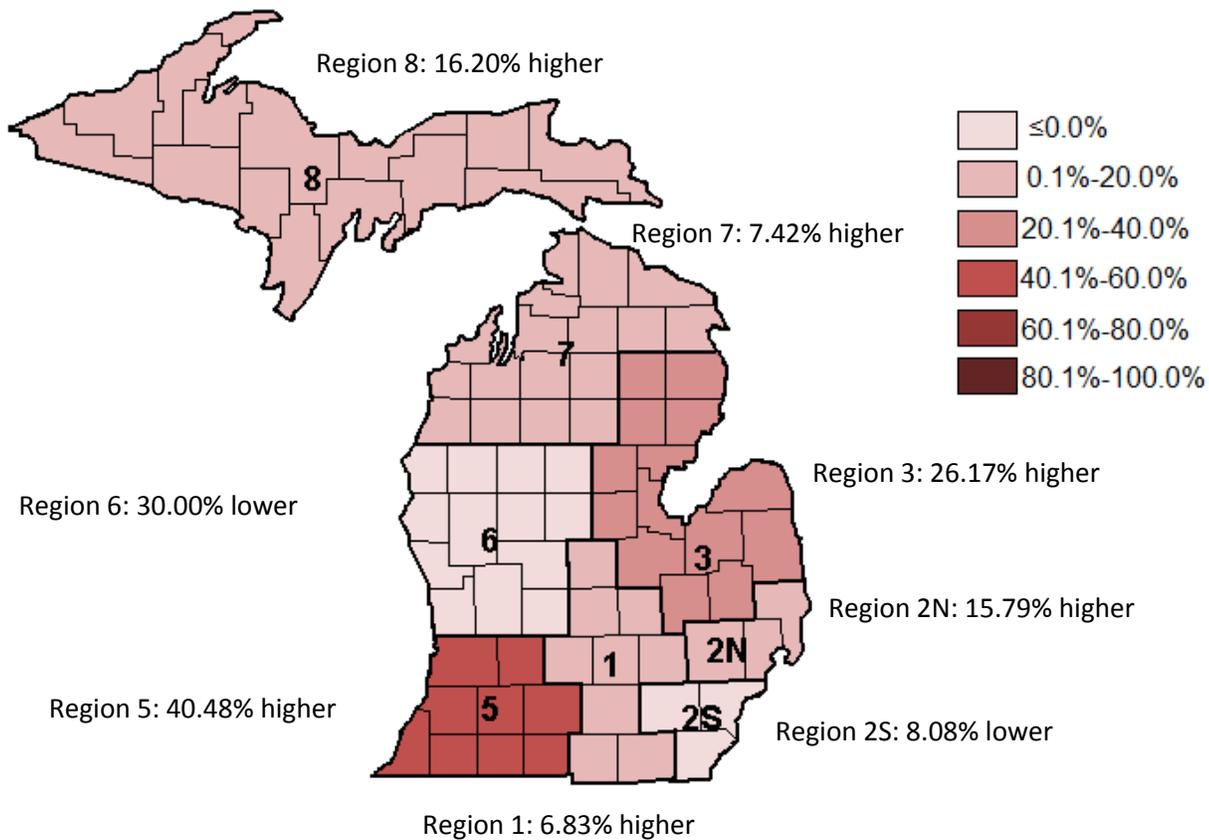
This regional map indicates the percent change in the normalized values of heat-related emergency department complaints from the previous week ending June 15, 2013, to the current week ending June 22, 2013.

**Table 1: Number and percent of heat-related visits by region**

Region	Week Ending June 15		Week Ending June 22		% Change
	# of Visits	% of All ED Visits	# of Visits	% of All ED Visit	
1	23	0.201%	21	0.184%	-8.46%
2N	19	0.189%	19	0.186%	-1.50%
2S	19	0.200%	28	0.281%	40.03%
3	39	0.286%	34	0.251%	-12.00%
5	6	0.161%	7	0.186%	15.70%
6	5	0.266%	4	0.217%	-18.26%
7	21	0.142%	34	0.236%	65.63%
8	48	0.197%	54	0.233%	18.06%

**Note:** As the percentages are very low, a small number of visits can drastically change the appearance of heat-related illness activity by region. Further, changes in total ED visits due to increases or decreases in presentations unrelated to heat illnesses may impact the comparison and bias the rates due to the small number of heat-related visits.

**Figure 7:** Risk Difference of Heat-Related Emergency Department Visits Due to Heat-Associated and Sun-Associated complaints by Region: Week Ending June 22, 2013 Compared to Week Ending June 15, 2013



This regional map indicates the weekly difference in the proportion of sun-associated and heat-associated visits out of all heat-related visits from the previous week ending June 15, 2013 to the current week ending June 22, 2013.

**Table 2:** Number and percent of heat-associated and sun-associated visits by region

Region	Week Ending June 15		Week Ending June 22		Risk Difference
	# of Heat-Associated and Sun-Associated Visits	Proportion of All Heat-Related Visits	# of Heat-Associated and Sun-Associated Visits	Proportion of All Heat-Related Visits	
1	5	21.74%	6	28.57%	6.83%
2N	4	21.05%	7	36.84%	15.79%
2S	9	47.37%	11	39.29%	-8.08%
3	7	17.95%	15	44.12%	26.17%
5	1	16.67%	4	57.14%	40.48%
6	4	80.00%	2	50.00%	-30.00%
7	4	19.05%	9	26.47%	7.42%
8	2	4.17%	11	20.37%	16.20%