

PATIENT AND PHYSICIAN PREDICTIONS OF TIME AND SEVERITY OF THE COMMON COLD

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Family Medicine Research Project 2010

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Background

- ▣ In the US, roughly 500 million non-influenza respiratory infections cost our society roughly \$40 BILLION (Fendrick, AM *et. al.*).
- ▣ No truly effective medications are available.
- ▣ Predictability either on the end of the patient or the physician may prove useful.
- ▣ Using Bruce Barrett's PEP study data, I checked to see if predictions about cold duration and severity matched reality.

Methods (Enrollment)

- ▣ We used 720 otherwise healthy patients age 12 or older.
- ▣ Patients were enrolled within 36 hours of symptom onset.
- ▣ Patients must have thought they had a cold and complained of at least one of the following:
 - Nasal discharge (runny nose)
 - Nasal obstruction (stuffy nose)
 - Sneezing
 - Sore throat

Methods (Allocation)

- ▣ Patients were then randomized into 1 of 12 groups using 2-way factorial allocation.
- ▣ 2/3 of patients visited a physician.
- ▣ Here's what that looked like.....

Methods (Allocation)

	No Pill	Blinded Placebo	Blinded Echinacea	Labeled Echinacea
No Visit	60 patients	60 patients	60 patients	60 patients
Standard Visit	60 patients	60 patients	60 patients	60 patients
Enhanced Visit	60 patients	60 patients	60 patients	60 patients

For a total of n=720 patients

Methods (Measurement)

- ▣ How was duration and severity measured?
- ▣ Patients used daily self report forms.
- ▣ Duration: days (intake day until recovery)
- ▣ Severity: Wisconsin Upper Respiratory Symptom Survey (WURSS) (questions answered by patients in their self report forms)
- ▣ Here's what that looked like....

Wisconsin Upper Respiratory Symptom Survey – 21 --- Daily Symptom Report

<i>Day:</i>	<i>Date:</i>	<i>Time:</i>	<i>ID:</i>
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Please fill in one circle for each of the following items:

	Not sick	Very mildly	Mildly	Moderately	Severely			
	0	1	2	3	4	5	6	7
How sick do you feel today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate the average severity of your cold symptoms over the last 24 hours for each symptom:

	Do not have this symptom	Very mild	Mild	Moderate	Severe			
	0	1	2	3	4	5	6	7
Runny nose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plugged nose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sneezing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sore throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scratchy throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hoarseness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Head congestion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chest congestion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling tired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Over the last 24 hours, how much has your cold interfered with your ability to:

	Not at all	Very mildly	Mildly	Moderately	Severely			
	0	1	2	3	4	5	6	7
Think clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleep well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breathe easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walk, climb stairs, exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accomplish daily activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work outside the home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work inside the home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interact with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Live your personal life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Compared to yesterday, I feel that my cold is...

Very much better	Somewhat better	A little better	The same	A little worse	Somewhat worse	Very much worse
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

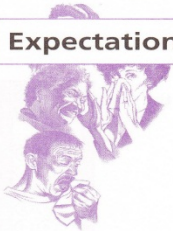
Methods (Predictions)

▣ Patients

▣ (1 – 5)

INTAKE DAY

Expectation Scale (Severity and Duration):



For the following two questions, please fill in the circle that best describes your thoughts about this cold:

	Much milder 1	Milder 2	About the same 3	More severe 4	Much more severe 5
Compared to prior colds, this cold feels like it will be:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Much shorter than usual 1	Shorter than usual 2	About the same as usual 3	Somewhat longer than usual 4	Much longer than usual 5
Compared to prior colds, this cold feels like it will last:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>


▣ Physicians:

▣ (0 – 100)

3. Please predict duration. Overall, this person's cold will be...

Extremely short


Extremely long



4. Please predict severity. Overall, this person's cold will be:

Extremely mild

Extremely severe

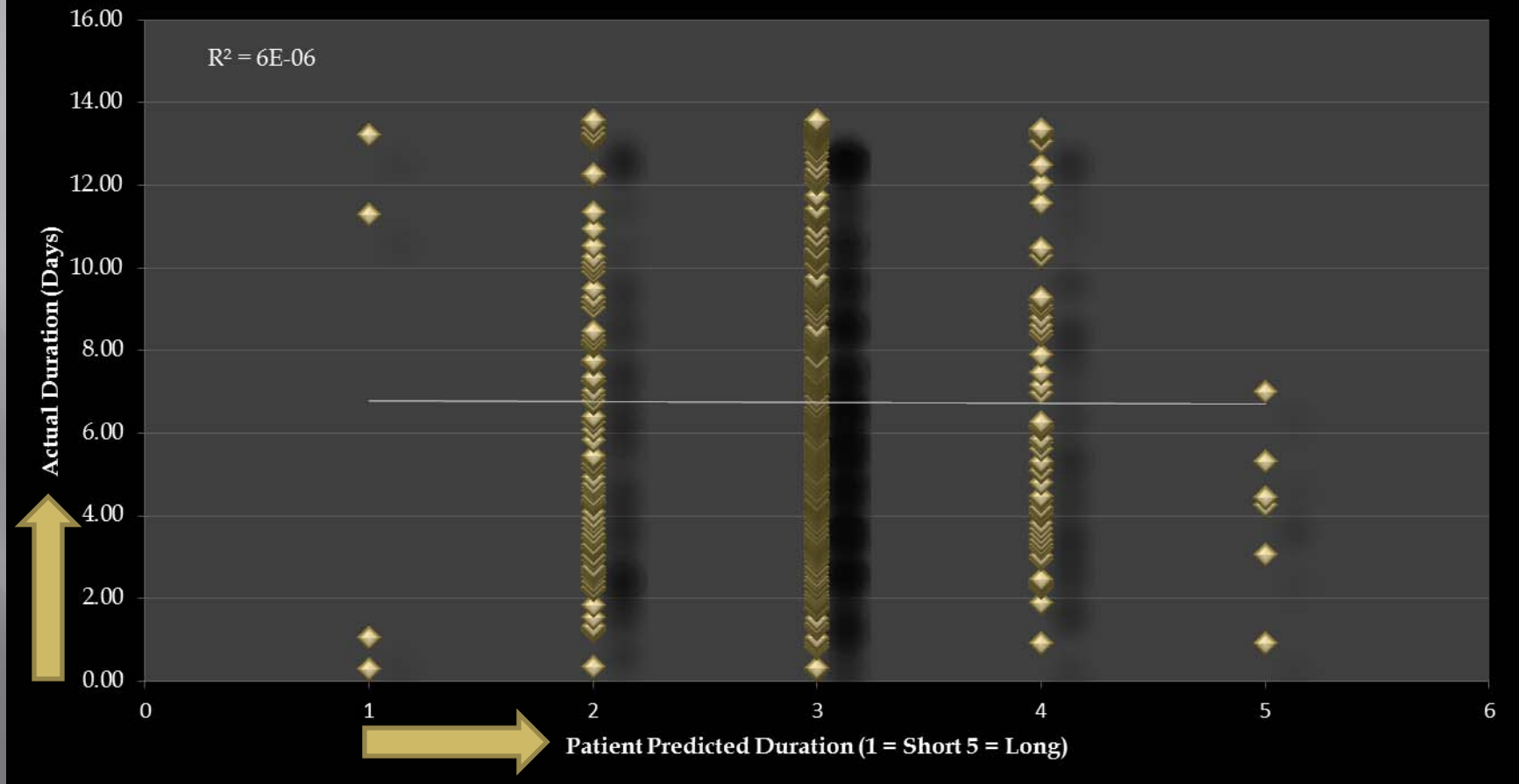


Methods (Analysis)

- ▣ Both duration and severity had discrete values.
- ▣ First I sorted by cohorts to see if a potential association did exist.
- ▣ If it looked possible, I used an XY scatter plot to look for correlation.
- ▣ Multiple possible predictors were tested.
- ▣ 4 main plots were ultimately used...

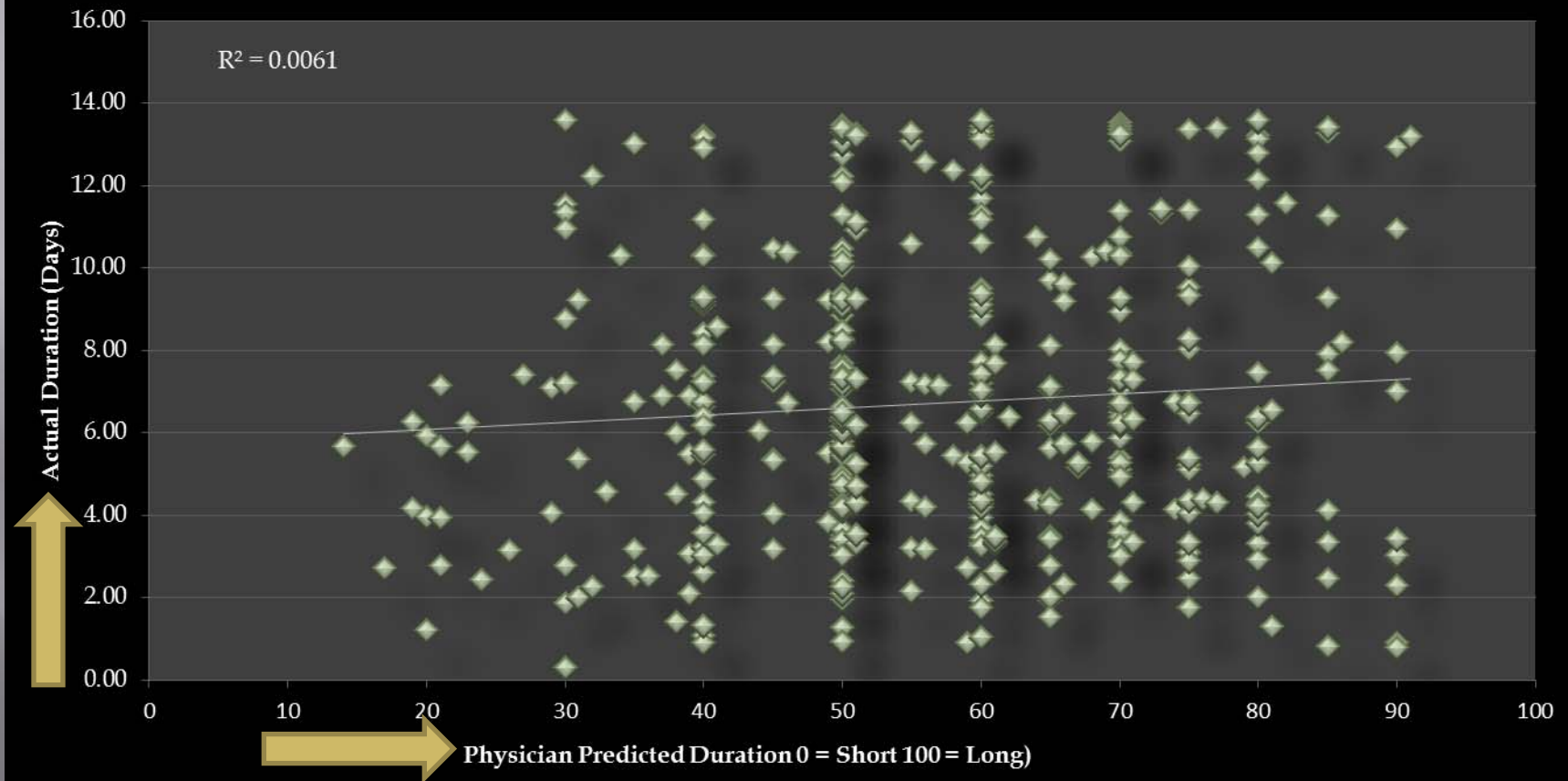
Results (Patients & Duration)

Patient Prediction vs. Actual Duration

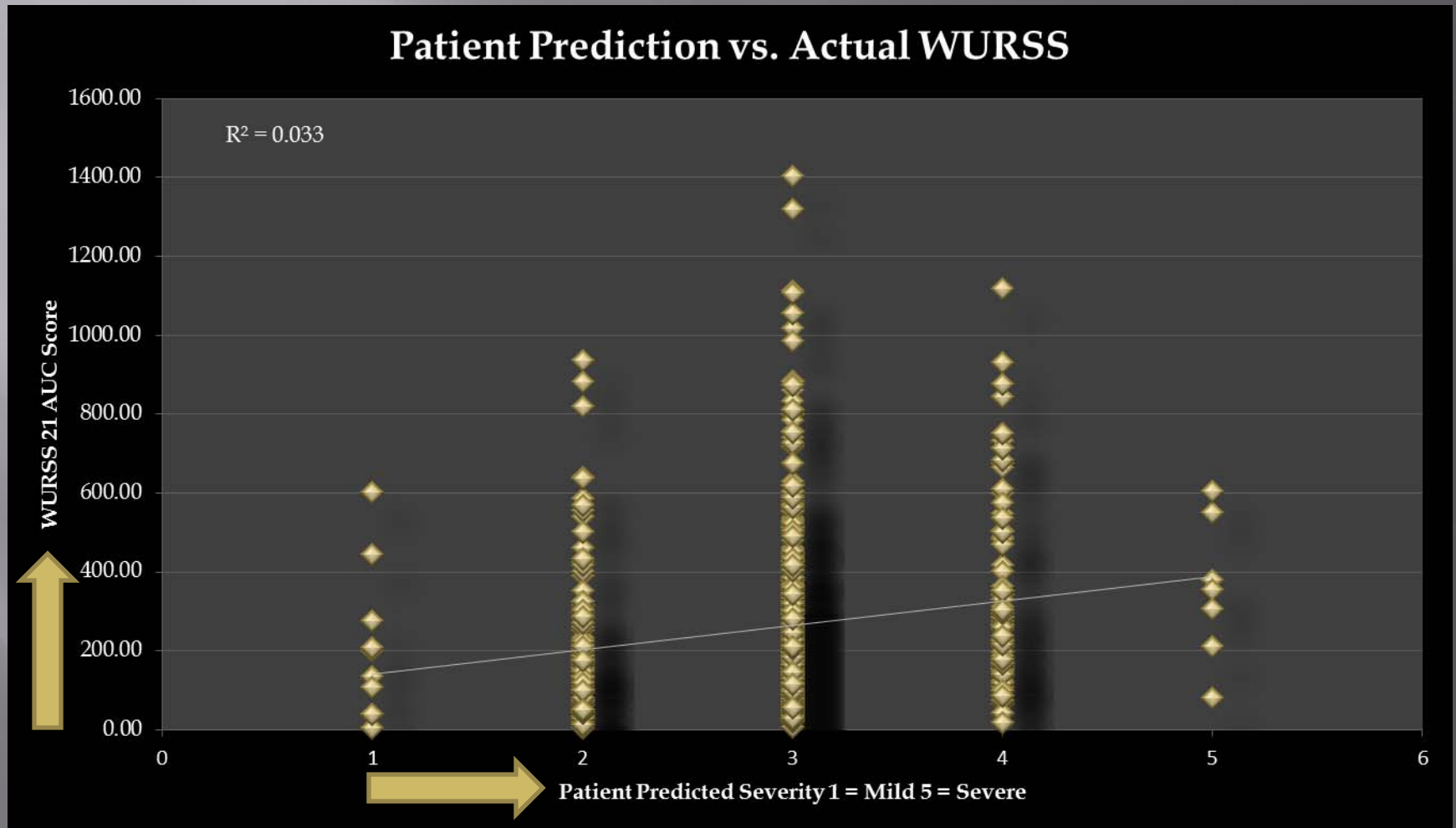


Results (Physicians & Duration)

Physician Prediction vs. Actual Duration

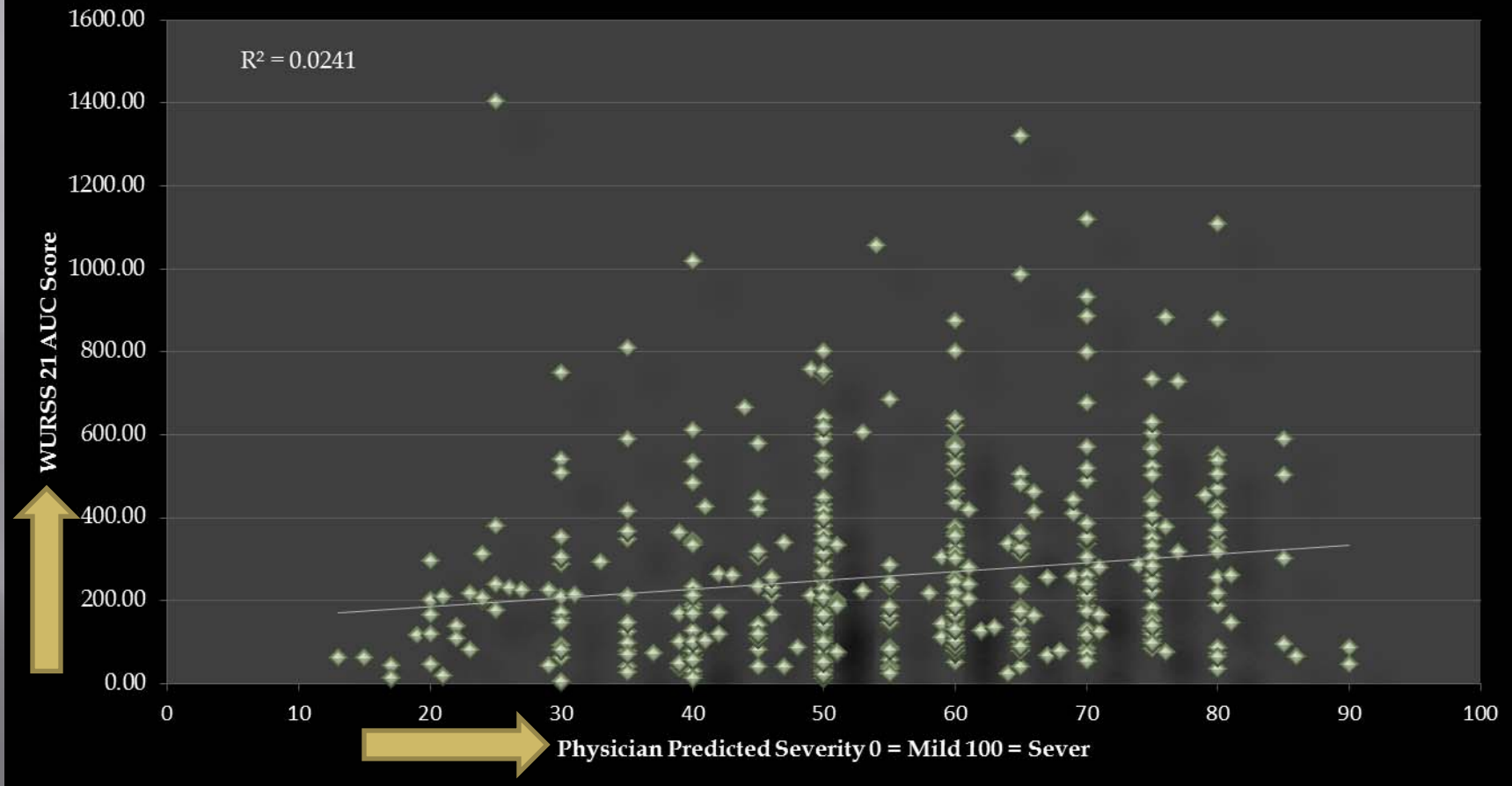


Results (Patients & Severity)



Results (Physicians & Severity)

Physician Prediction vs. Actual WURSS



Conclusions (Findings)

- ❑ Neither patient nor physician could strongly predict duration or severity of the cold.
- ❑ The best predictions were patients predicting their own severity.
- ❑ This seems to challenge beliefs in the effect of attitude on the length of a cold.

Conclusions (Limitations)

- ▣ Statistical analysis is pending.
- ▣ Patient R^2 values may be artificially high since patient predictions were limited to 1 - 5.
- ▣ There is an inherent difference between the questions physicians were asked and what the patients were asked.
- ▣ I'd like to see if both patients and doctors were asked to predict, in days, how long the cold would last.

Thanks

- ▣ Thanks to Bruce Barrett for his patience with me and tolerance of my questions!
- ▣ Thanks to Tola Ewers for putting the data on one workbook for me!
- ▣ Thanks to Shari Barlow for helping me hit the ground running!
- ▣ Thanks to Jon Temte for making these summer projects possible!
- ▣ Thanks to Laura Kutzke for making our summer meetings enjoyable!
- ▣ Thanks to you all for having me!

WHO'S GOT QUESTIONS?

