Utilization of ED for Pediatric Fevers

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PEDIATRIC PATIENTS WITH FEVER AND THE USE OF THE EMERGENCY DEPARTMENT (ED) AT 17TH STREET

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EBP – Problem Statement

ER Nursing staff noticed, what appeared to be, an inordinate number of patients (infant & young child) using the 17th ER with a primary complaint of fever.

The staff felt, given their experience with these patients, this could be a case of inappropriate use of ER resources.

The following is the initial process undertaken to identify the patients characteristic of this observation.

Purpose

- The purpose of this study was to describe the determinants of adult parents, grandparents, and legal guardians that lead to their decision to use the emergency department for evaluation and treatment of non-urgent fevers in young children at LVHN's 17th and Chew site.

Population

- For fiscal year 2011, it was identified that there was a cohort of patient's under the age of 4 with a primary diagnosis of fever
- 884 patient charts were reviewed retrospectively

EBP – 17th ER Fever Study

- Location – LVHN ER @ 17th & Chew Sts.
  - Patient Population – ER Visits
  - FY 2011
  - Age <4
  - Primary Diagnosis of Fever at Admission
  - "n" = 884
  - ESI > 3, excludes inpatient admissions.
- Principal Investigator (s) – Kathy Baker RN, MPH. Krista Bilger RN, Andrew Martin, RN

17 ER 0-3 FY11- PSNM

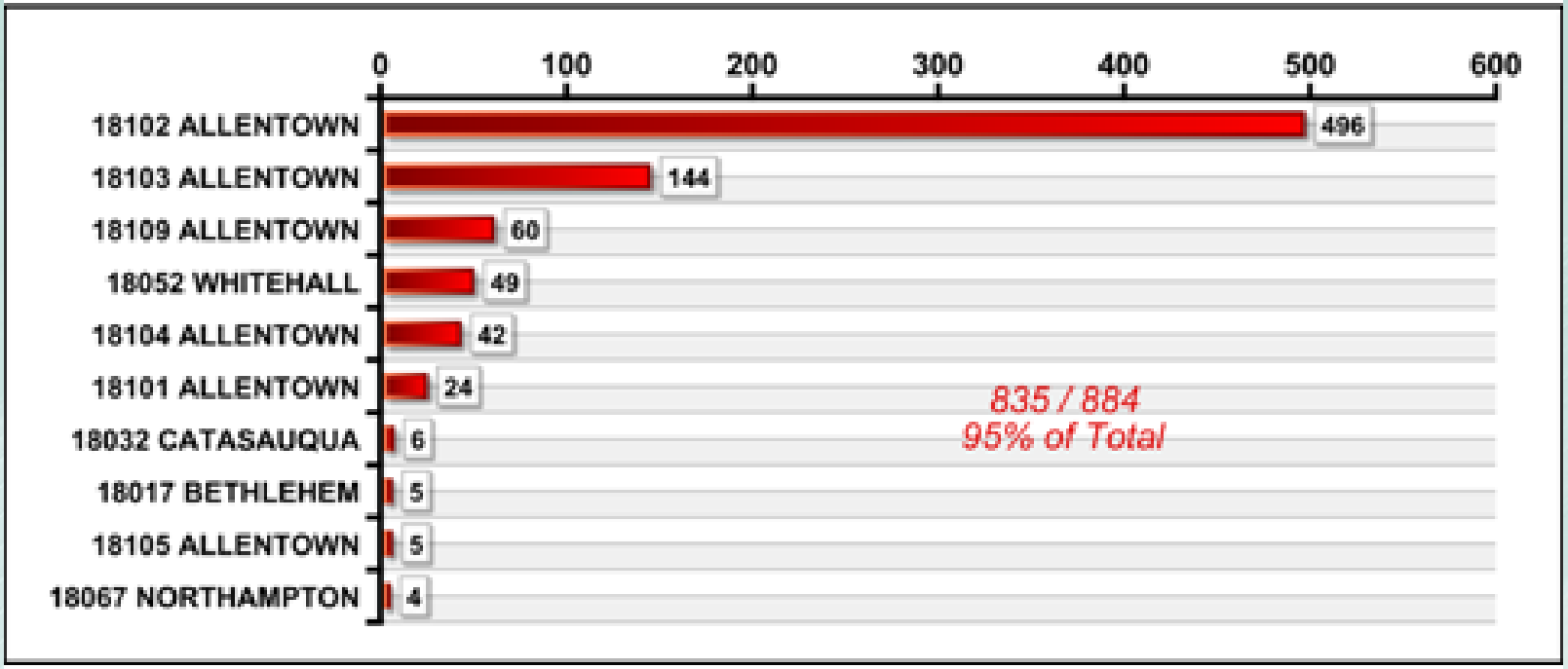
(PSNM = Patient Services Net Revenue [Total Revenues – Total Cost])

	"n"	Total PSNM	Avg PSNM
Non Clinic Patients	**232**	**$ (12,567.50)**	**$ (54.17)**
BC	16	$ 1,462.57	$ 91.41
COM	1	$ 406.14	$ 406.14
DIR_CTR	10	$ 3,223.14	$ 322.31
MA	180	$ (13,824.24)	$ (76.80)
SELF	25	$ (3,835.11)	$ (153.40)
Clinic Patients	**652**	**$ (53,269.04)**	**$ (81.70)**
BC	13	$ (4,246.48)	$ (326.65)
DIR_CTR	14	$ 4,596.47	$ 328.32
MA	588	$ (47,236.61)	$ (80.33)
SELF	37	$ (6,382.42)	$ (172.50)
All Patients	**884**	**$ (65,836.54)**	**$ (74.48)**

Unless stated "n" = 884

17 ER Fever 0-3 FY11 - Top Ten Home Zip / City Designation

Source: LVHN HPM



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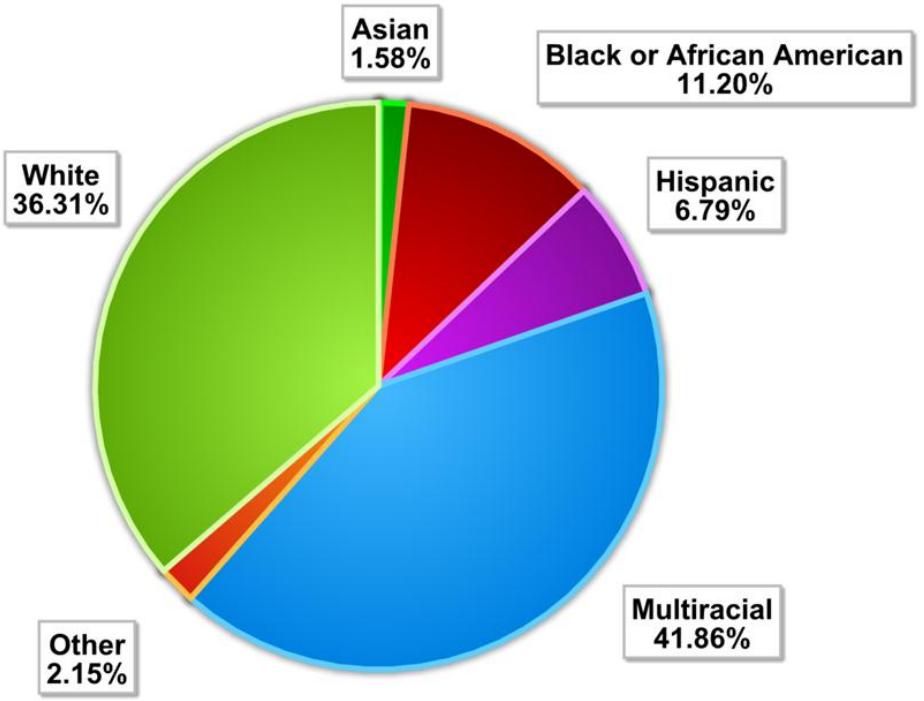
David F. Zimmerman MPH - Data Analyst

Race

17 ER Fever Pts Age 0-3 FY11 by Race

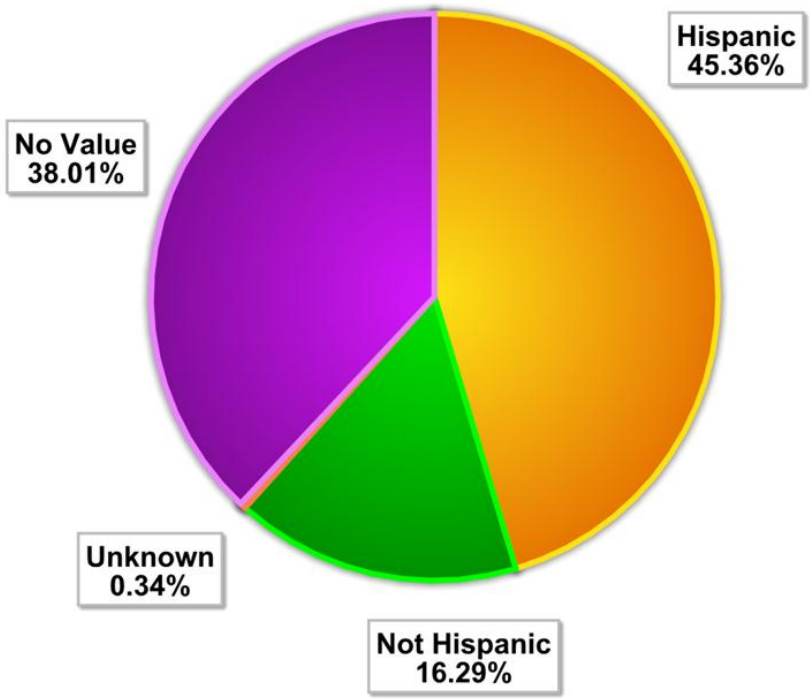


Source: LVHN HPM

Not show is American Indian or Alaska Native - 0.11%

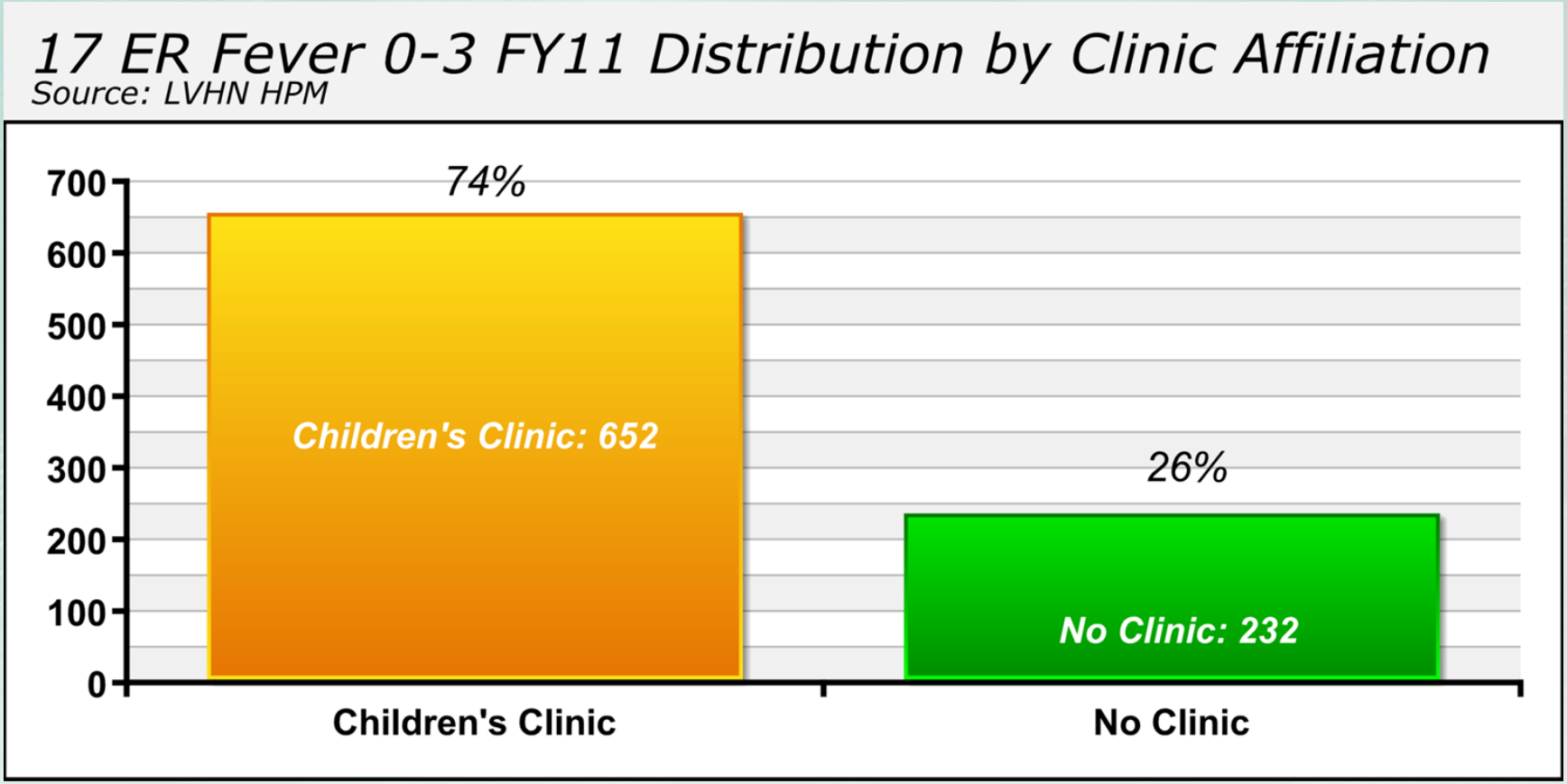
Ethnicity

17 ER Fever Pts
Age 0-3 FY11
by Ethnicity

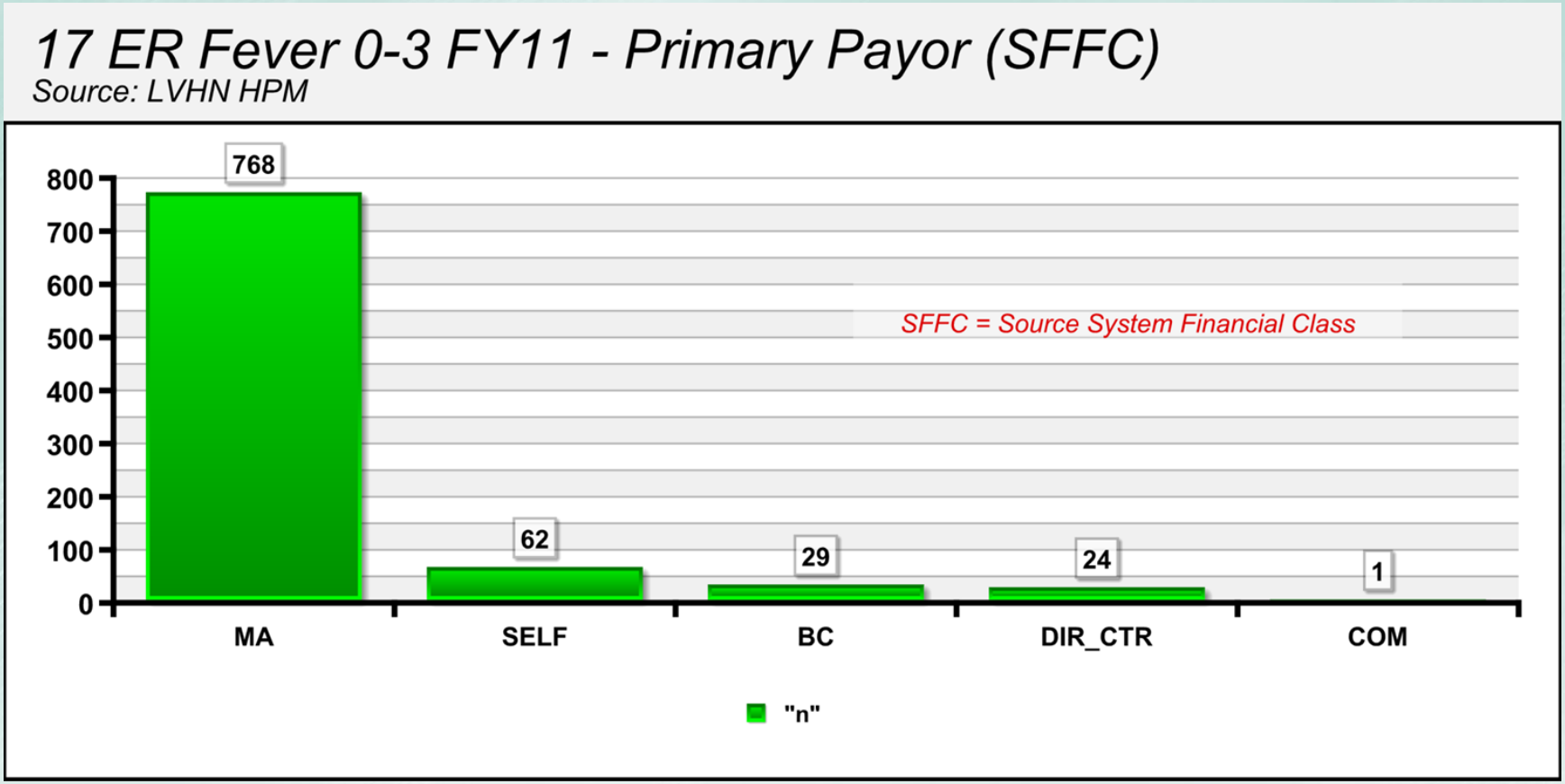


Source: LVHN HPM

PCP/Clinic Affiliation



Insurance


17 ER Fever 0-3 FY11 - Primary Payor (SFFC)
Source: LVHN HPM
800
700
600
500
400
300
200
100
0
768
62
29
24
1
SFFC = Source System Financial Class
MA
SELF
BC
DIR_CTR
COM
"n"

Barton Schmitt Triage Tool

RESOURCES USED

Laboratory Tests			Medications			Radiology		
CBC	○ Yes	○ No	Ondansetron	○ Yes	○ No	Chest X-Ray	○ Yes	○ No
CMP	○ Yes	○ No	Albuterol	○ Yes	○ No	Soft tissue X-Ray	○ Yes	○ No
BMP	○ Yes	○ No	Duoneb	○ Yes	○ No			
Blood Cultures	○ Yes	○ No	Decadron	○ Yes	○ No	**Ultrasound**		
Urinalysis	○ Yes	○ No	Solumedrol	○ Yes	○ No	Abdominal Ultrasound	○ Yes	○ No
Urine Culture	○ Yes	○ No	Acetamenophen	○ Yes	○ No			
Cerebral Spinal Fluid	○ Yes	○ No	Ibuprofen	○ Yes	○ No			
Flu Culture	○ Yes	○ No						
RSV	○ Yes	○ No	**IV Fluid**					
Rapid Strep Culture	○ Yes	○ No	IV Fluid	○ Yes	○ No			
Strep Culture	○ Yes	○ No						

BARTON SCHMITT

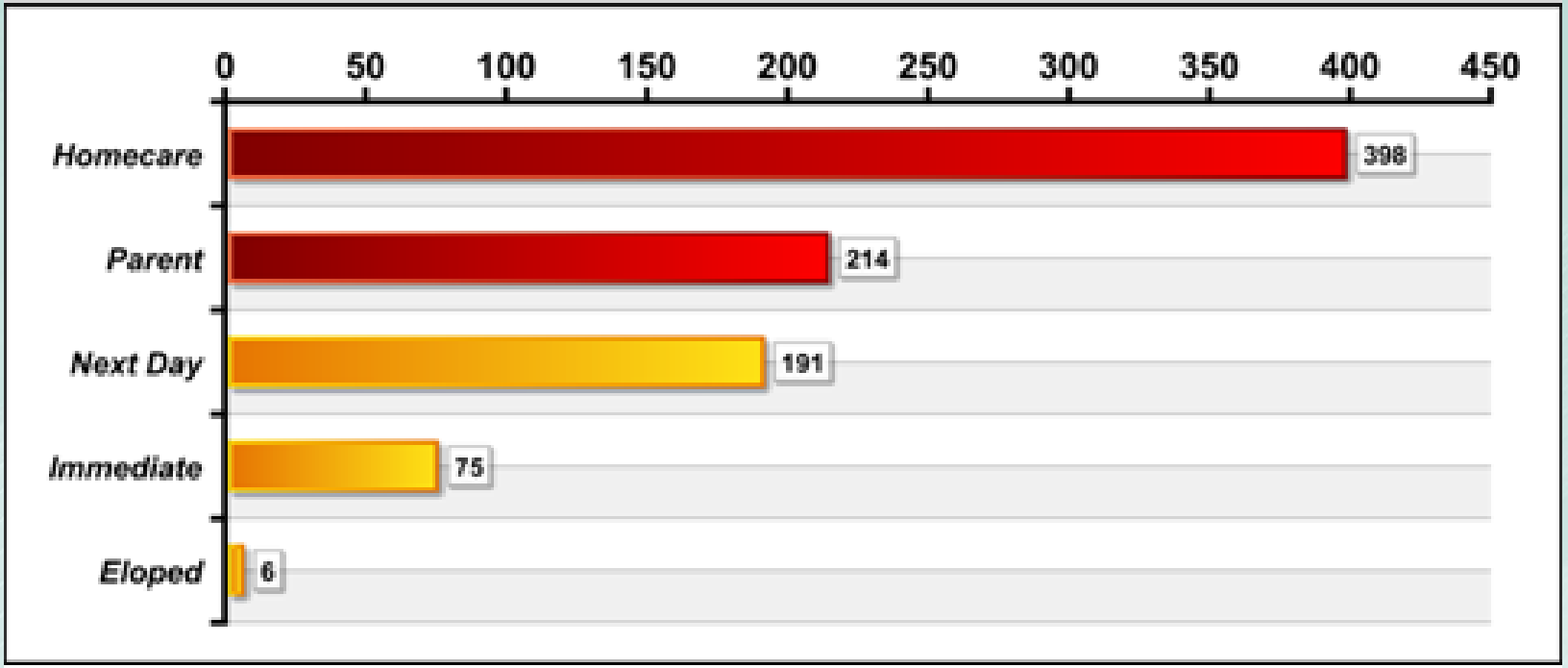
FEVER:

Call 911	ED Now	See in 24 hours
☐ Limp, weak, or not moving	☐ Newborn (<1 month) who acts sick	☐ Age 3-6 months with fever >102 (Exception: Follows DTaP shot)
☐ Unresponsive or difficult to awaken	☐ Age <12 weeks with fever >100.4	☐ Age 3-24 months with fever present > 24 hours but no other symptoms
☐ Bluish lips, tongue or face	☐ Fever> 105	**Home Care**
☐ Severe difficulty breathing	☐ Shaking chills present >1 hour	☐ Fever with no signs of serious infection AND no localizing symptoms for:
☐ Rash with purple spots or dots	☐ Very irritable	
☐ Sounds like a life-threatening emergency to triager	☐ Child is confused with fever <103 or present > 1 hour	
	☐ Stiff neck or bulging soft spot	
	☐ Won't more arm or leg normally	
	☐ Had a febrile seizure	
	☐ Signs of dehydration	
	☐ Buring or pain with urination	
	☐ Child sounds weak or sick to triager	
	☐ Chronic disease that causes decrease immunity	

EAR, PULLING AT OR ITCHY:

ED Now	See Today in Office	See Within 3 Days in Office
☐ Newborn <4 weeks with fever >100.4 rectally	☐ Seems to be in pain	☐ Recent onset of awakening from sleep
ED Now (or to Office with PCP Approval)	☐ Crying without an obvious reason	☐ Sign of a cold
☐ Age 4-12 weeks with fever >100.4 rectally	☐ Constant digging in 1 ear canal for >2 hr	☐ Pulling at ear continues >3 days
	☐ Fever is present	

ER as appropriate treatment locale?



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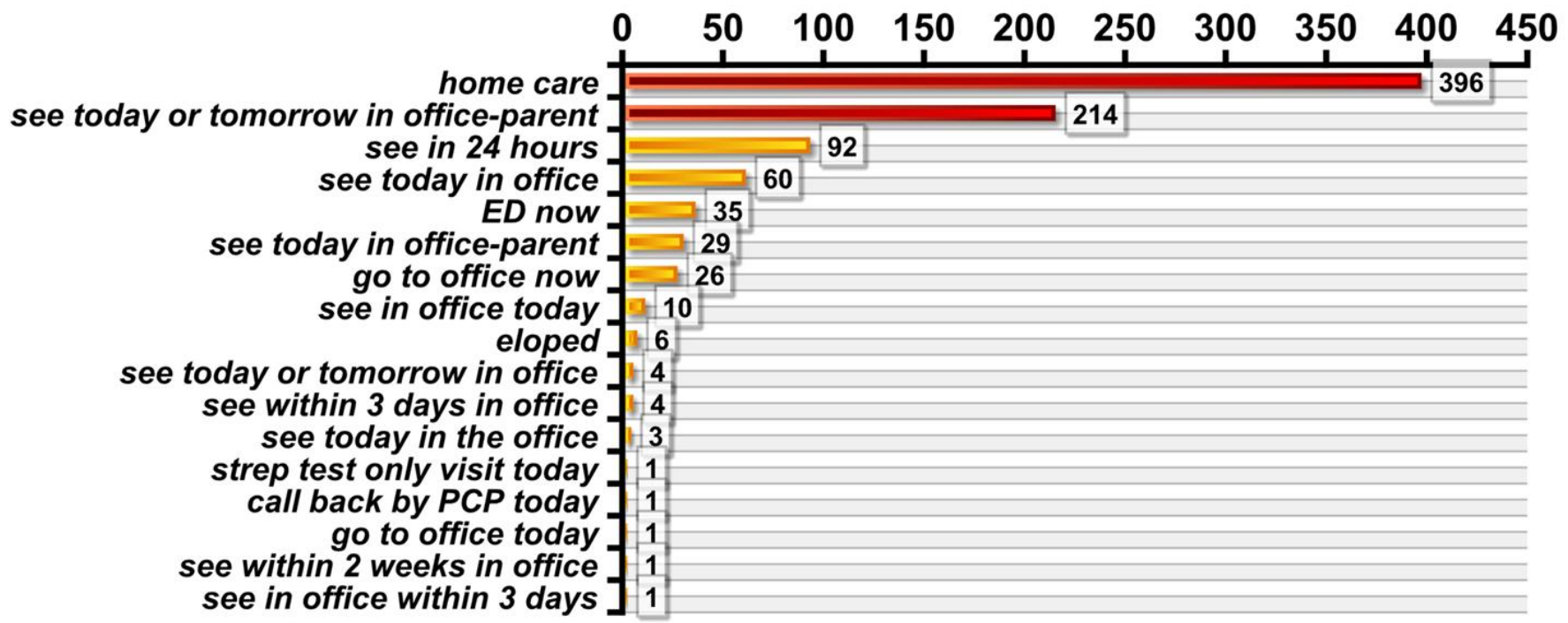
Technical Report 101 v3.0 - April 11, 2012:
David F. Zimmerman MPH - Data Analyst

17 ER Fever 0-3 FY 11 Barton Schmitt - Appropriateness

Source: LVHN Chart Review 3/12



The next step ….

Interviews

- October, 2012 thru March 2013
- Four ED RN's & three other team members
- Interpreters made available by Sue Jones for Spanish speaking subjects
- Peak hours/days were determined based on previous evidence and a schedule was made.
- 23 interviews were completed.
- 13/23 (56%) agreed to audio recording as well.

DATA COLLECTION SHEET

Demographic Data: CO-RN: ☐☐☐

1. Relationship to child: ☐ Mother ☐ Father ☐ Grandmother ☐ Grandfather ☐ Legal Guardian
2. What language is spoken at home? ☐ English ☐ Spanish
3. What is your age? ☐☐
4. What is your educational status? Circle appropriate complete year of schooling.
   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
5. How old is the patient (in months)? ☐☐☐
6. How many children does the mother have? ☐☐
7. What birth order is this child? 1 2 3 4 5 6 7 8 9 10+
8. Where do you take the child for routine medical care? _____
9. Did you call the doctor's office to have the child seen for today's problem?
   ☐ Yes ☐ No, Reason: _____
   a. Who did you talk to? _____
   b. What was your experience with the call? _____
   c. What advice did you receive? _____
   d. Did you follow the advice?
   ☐ Yes ☐ No, Reason: _____
10. Did your child see a doctor anywhere else today?
    ☐ No ☐ Yes, location: _____

Interview Questions: *To be Recorded*

1. How do you know your child has a fever? _____
   a. Do you have a thermometer at home? ☐ Yes ☐ No
   b. How is the temperature taken?
   ☐ Oral ☐ Tympanic ☐ Strip on forehead ☐ Touch forehead ☐ Rectally ☐ Arm pit ☐ N/A
   c. Have you taken the child's temperature today? ☐ Yes ☐ No
   d. What temperature prompted you to come to the ED today? ☐☐☐.☐
   e. Have you given your child anything for the fever?
   ☐ Yes ☐ No, Reason: _____
   f. What did you give? _____
   g. How much did you give? _____
   h. What time did you last give it? ☐☐:☐☐
2. What made you decide to bring your child to the ED instead to their pediatrician or PCP?
   _____
3. Who made the decision to bring the child here today? _____

Results of Interviews

- Mother present for 21 of the 23 interviews
- Majority were clinic patients
- Only 6 of the 23 called the PCP first
  - Five of those six say they did follow the advice given them, yet still came to ED eventually.
  - There was mixed reports of how their experience was with the phone call, good, bad, indifferent.

Sensemaking Framework

- " Sensemaking involves the retrospective development of plausible images that rationalize what people are doing." Weick 2005
- What is going on?
  - Flux – Chaos. Always aware that situations can change. Draw on past experiences
  - Noticing and Bracketing –Variance to normal
  - Labeling – Categorizing to stabilize the streaming experience
  - Retrospective – Looking back and adding up events
  - Presumption- Connects the abstract with the concrete
- What do I do next?
  - Action- Action or decide no action

Presumptions made by caregiver

- Child needs to be seen
- Clinic has no appointments
- Calling PCP only for appointments
- ED faster
- ED takes fever more serious
- Rather see PCP
- Seek proper treatment
- Severity may increase w/o intervention
- Satisfy others in family

Themes

- Barriers in access to care
  - Subjects unaware of dates and times PCP office is open.
  - Subjects perceived that no appointment would be available even during PCP open hours.
  - Most subjects did not call PCP office to report illness. Those who called did not follow advice or the experience was reported to be negative.
  - Subjects hours of work influenced decision
  - Subjects access to transportation a factor in accessing care.

Themes

- Perceived urgency of fever
  - Subjects touch of child seems to be the single most common factor in determining of illness.
  - All subjects reported having thermometer
  - Subjects reported temperature did not influence the their view on the urgency of the illness
  - Subjects that provided treatments such as antipyretics or home remedies continued to see illness as requiring emergent attention even when temperature decreased after treatment.
  - Family members advice was factored into perceived severity of illness.

Themes

- Gap between reported relationship with PCP and action taken to go to ED.
- Subjects were asked: “If you had the choice to either go to the child’s PCP right now or bring them to the ED, which would you have preferred?”
  - Most subjects reported that if access where equal between PCP and ED, they would have preferred taking the child to the PCP.
  - Subjects valued the history and relationship with their PCP.
  - Very few subjects actually called PCP to report illness
  - Subjects who called PCP found the experience to be negative.
  - Subjects who called PCP did not follow advice.
  - Subjects did not receive reassurance needed via the phone interaction with PCP.

Discussion/Suggetions

- Fever has a long history of being viewed as an indicator of illness. Health literacy surrounding this physiologic phenomena is lacking in this population.
- Review of current education provided by family member and all who influence the subjects may be a good first step in uncovering why this exists.
- Development of proactive programs to address this gap should be explored.

Discussion/ Suggestions

- Accompanying adults acted in the best interest of the children. They perceived that the child's condition required immediate attention.
- The adult required immediate assurance that the child was safe from further illness or complications. Even though no medical intervention occurred at the ED, the face to face interaction did provide reassurance.
- From the responses, it can be induced that a face to face interaction with the PCP may have provided the same reassurance.
- The experiences reported with the interaction with the PCP via the phone did not provide assurance and should be a focus for future investigation.

Discussion/Suggestions

- Utilizing the sensemaking framework allowed for the analysis of the factors of the adults accompanying children with fever to the ED. This framework should also be used to evaluate the factors that the organization utilized to determine their access processes, fever information/education and the off hour interactions between subjects and PCP office.

My personal perspective

- A new experience and opportunity to learn.
- My first collaborative quality improvement study.
- Not often that I've seen bedside nurses involved in this type of study
- Did not know how involved I would become
  - Time frame from the first meeting when the question was first presented to now – still not done!
- Article was submitted to be published in a Journal
- An overall good experience for me
- Eager to see what changes may be able to come from learning the results of this study

Questions

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