

# 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 17<sup>th</sup> 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 – 17<sup>th</sup> ER Fever Study

- Location – LVHN ER @ 17<sup>th</sup> & 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

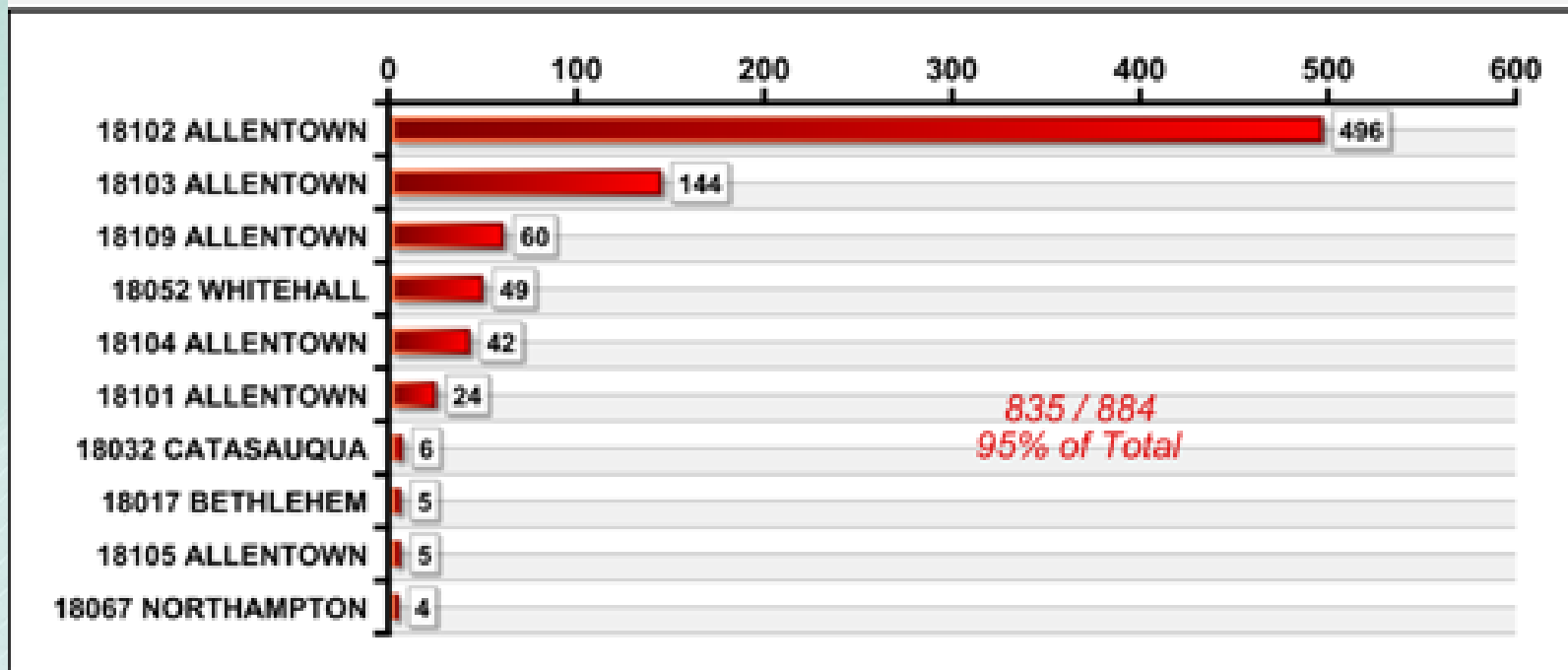
*(PSNM = Patient Services Net Revenue [Total Revenues – Total Cost])*

	"n"	Total PSNM	Avg PSNM
<b>Non Clinic Patients</b>	<b>232</b>	<b>\$ (12,567.50)</b>	<b>\$ (54.17)</b>
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)
<b>Clinic Patients</b>	<b>652</b>	<b>\$ (53,269.04)</b>	<b>\$ (81.70)</b>
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)
<b>All Patients</b>	<b>884</b>	<b>\$ (65,836.54)</b>	<b>\$ (74.48)</b>

Unless stated "n" = 884

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

Source: LVHN HPM



Unless stated otherwise = 2014

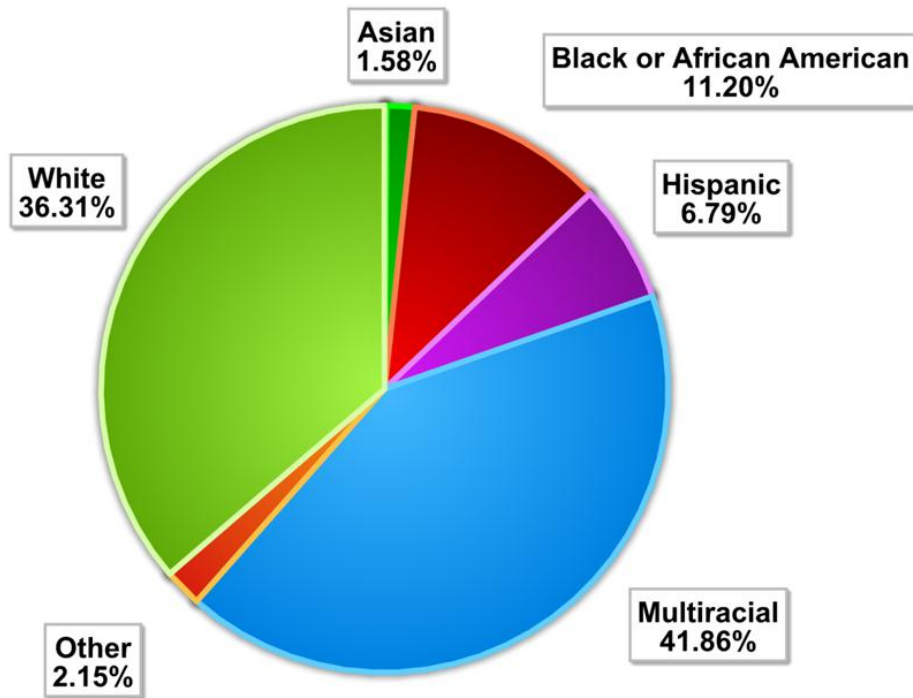
Technical Report 101 v3.0 - April 11, 2012:

David F. Zimmerman MPH - Data Analyst



# Race

17 ER Fever Pts  
Age 0-3 FY11  
by Race

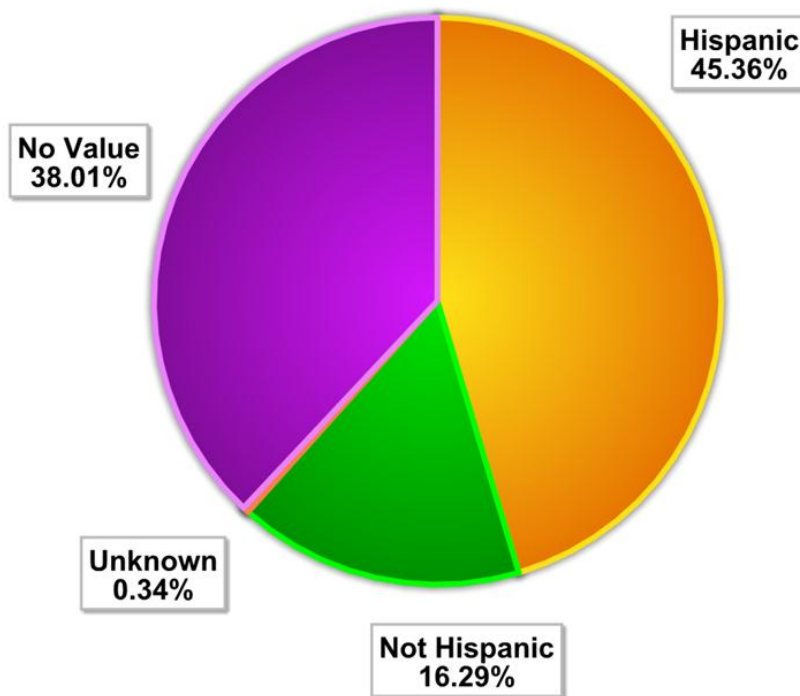


Source: LVHN HPM

Not show is American Indian or Alaska Native - 0.11%

# Ethnicity

*17 ER Fever Pts  
Age 0-3 FY11  
by Ethnicity*

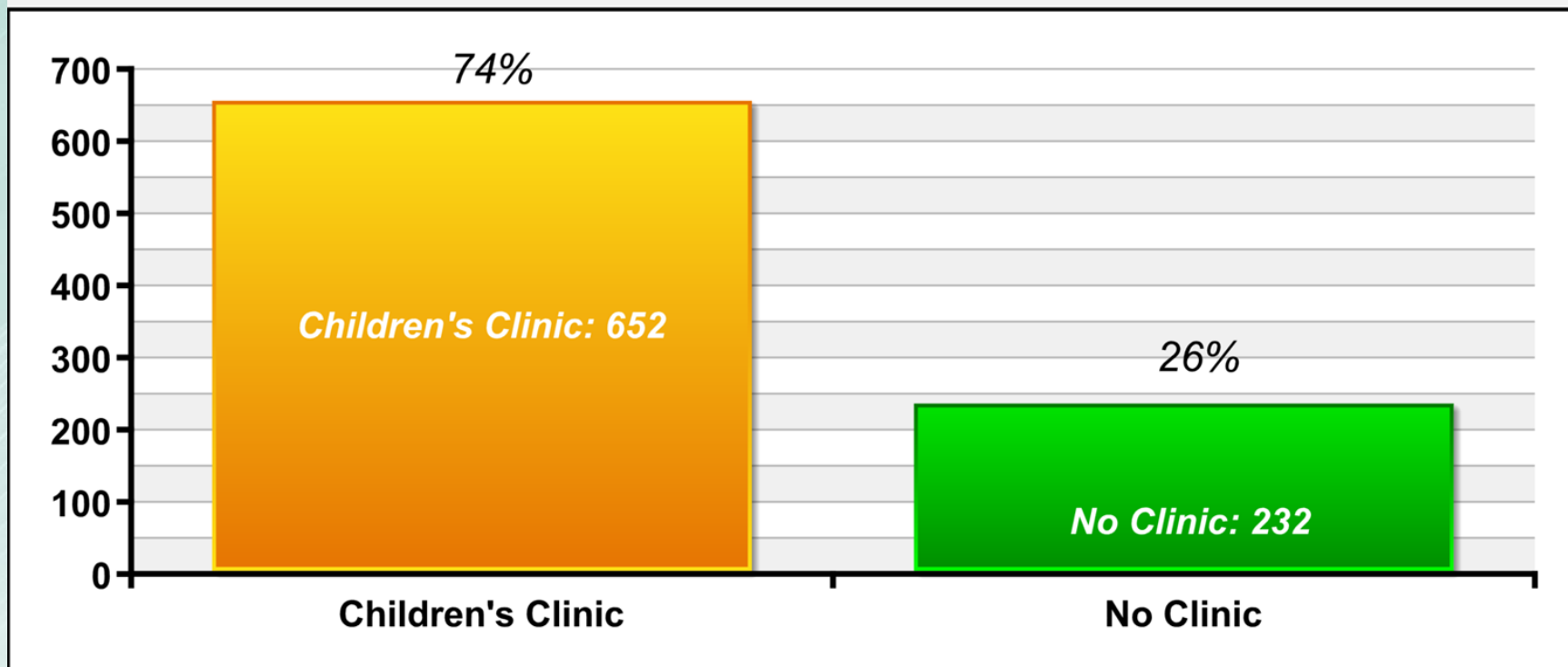


*Source: LVHN HPM*

# PCP/Clinic Affiliation

## 17 ER Fever 0-3 FY11 Distribution by Clinic Affiliation

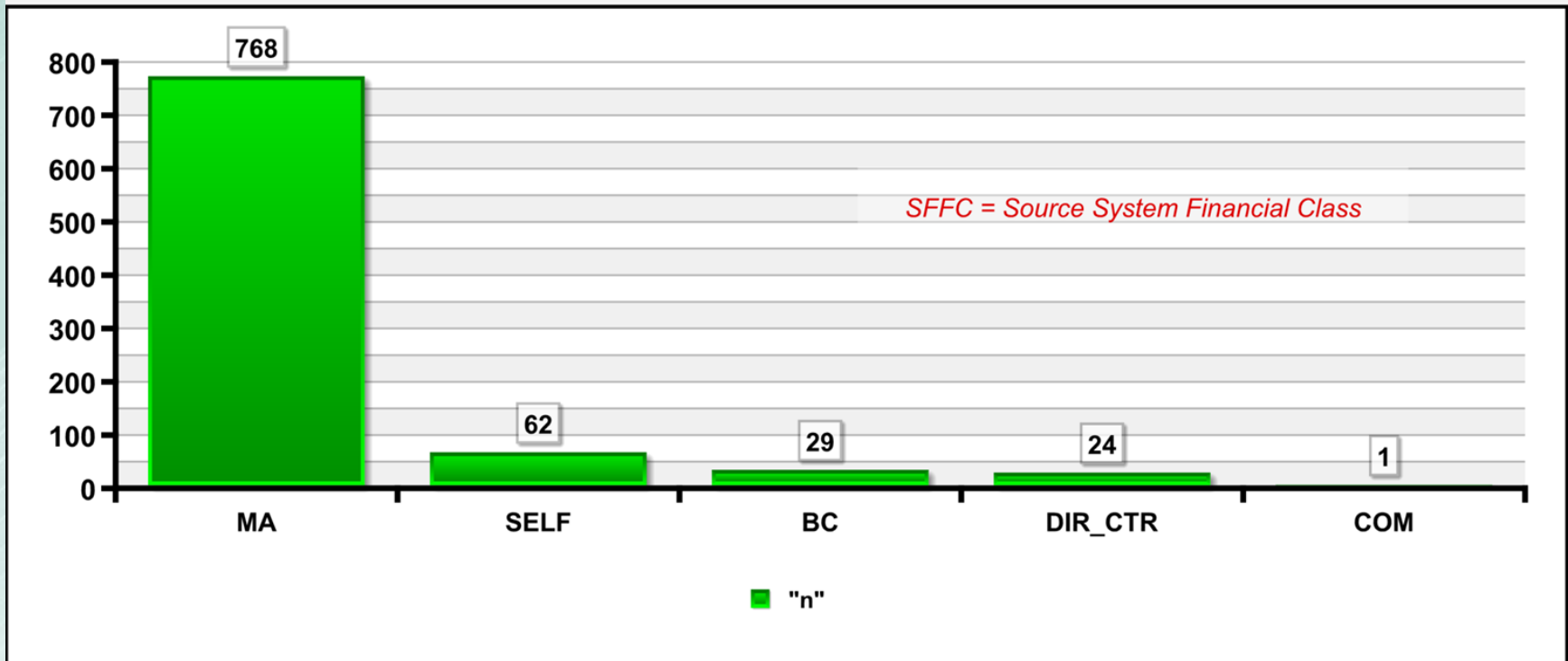
Source: LVHN HPM



# Insurance

## 17 ER Fever 0-3 FY11 - Primary Payor (SFFC)

Source: LVHN HPM



# Barton Schmitt Triage Tool

## RESOURCES USED

Laboratory Tests	Medications	Radiology
CBC <input type="radio"/> Yes <input type="radio"/> No	Ondansetron <input type="radio"/> Yes <input type="radio"/> No	Chest X-Ray <input type="radio"/> Yes <input type="radio"/> No
CMP <input type="radio"/> Yes <input type="radio"/> No	Albuterol <input type="radio"/> Yes <input type="radio"/> No	Soft tissue X-Ray <input type="radio"/> Yes <input type="radio"/> No
BMP <input type="radio"/> Yes <input type="radio"/> No	Duoneb <input type="radio"/> Yes <input type="radio"/> No	
Blood Cultures <input type="radio"/> Yes <input type="radio"/> No	Decadron <input type="radio"/> Yes <input type="radio"/> No	Ultrasound
Urinalysis <input type="radio"/> Yes <input type="radio"/> No	Solumedrol <input type="radio"/> Yes <input type="radio"/> No	Abdominal Ultrasound <input type="radio"/> Yes <input type="radio"/> No
Urine Culture <input type="radio"/> Yes <input type="radio"/> No	Acetamenophen <input type="radio"/> Yes <input type="radio"/> No	
Cerebral Spinal Fluid <input type="radio"/> Yes <input type="radio"/> No	Ibuprofen <input type="radio"/> Yes <input type="radio"/> No	
Flu Culture <input type="radio"/> Yes <input type="radio"/> No		
RSV <input type="radio"/> Yes <input type="radio"/> No	IV Fluid	
Rapid Strep Culture <input type="radio"/> Yes <input type="radio"/> No	IV Fluid <input type="radio"/> Yes <input type="radio"/> No	
Strep Culture <input type="radio"/> Yes <input type="radio"/> No		

## BARTON SCHMITT

### FEVER:

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

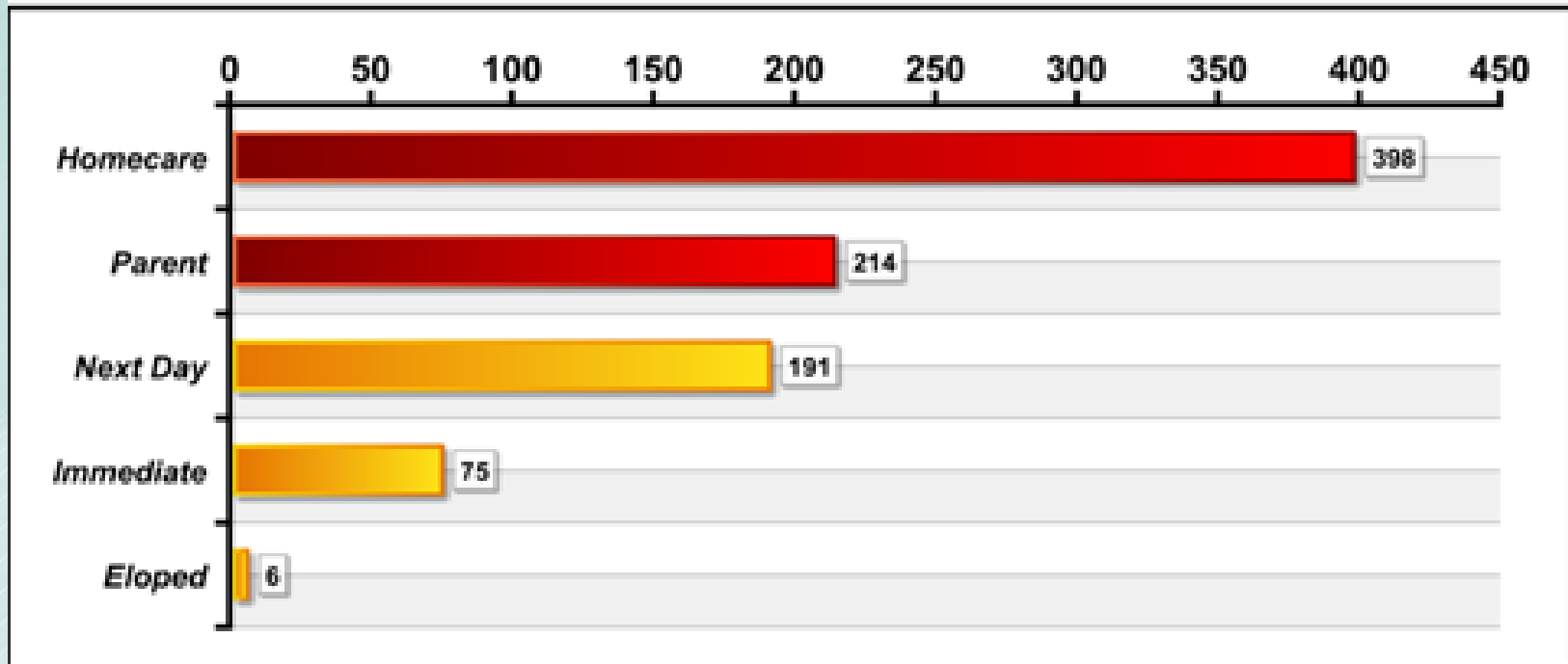
### EAR, PULLING AT OR ITCHY:

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

# ER as appropriate treatment locale?

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

Source: LVHN Chart Review 3/12

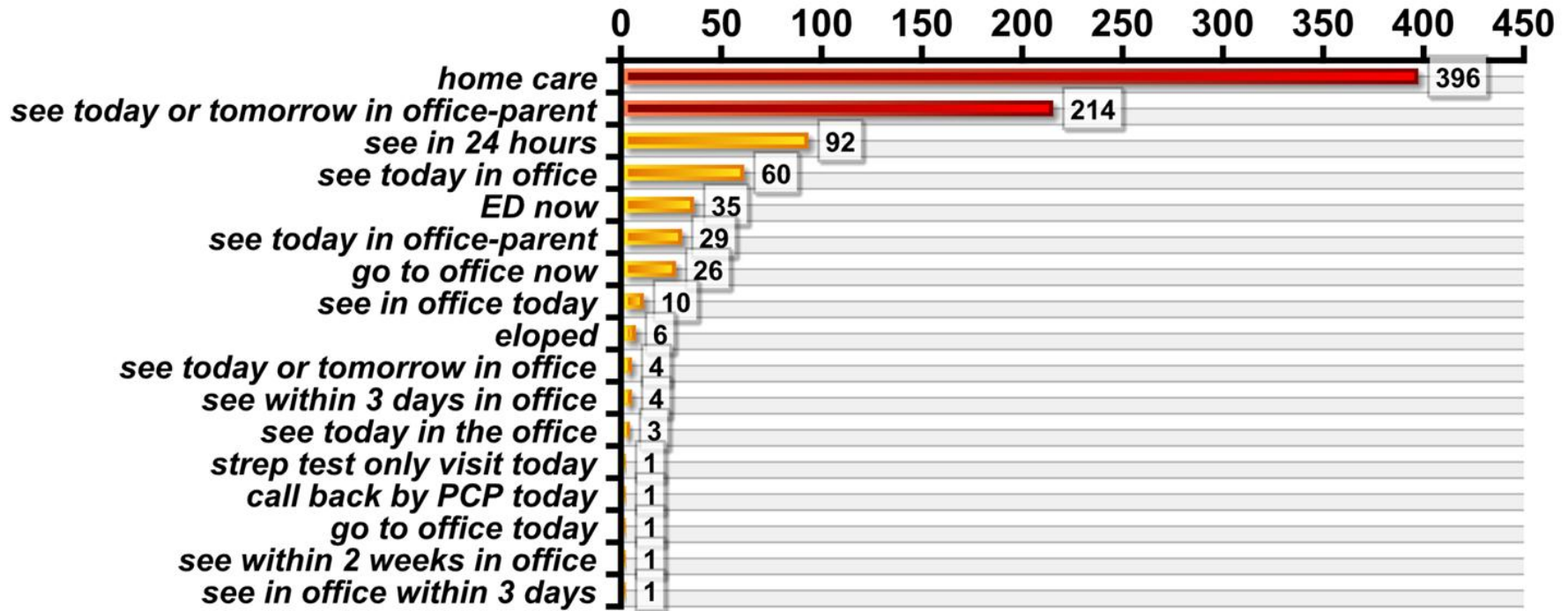


Unless stated otherwise, n = 394

Technical Report 101 v3.0 - April 11, 2012:  
David R. 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 were 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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