

Mercury
Common - Caustic -
Costly
...and Scary....

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“That rash on your stomach is a telltale sign of mercury poisoning.”

Objectives

- Describe the typical presentation of mercury toxicity
- List the potential participants in a mercury event
- State the most important contributing factor that can help an event “to go well”
- Discuss factor that can make mercury costly to manage

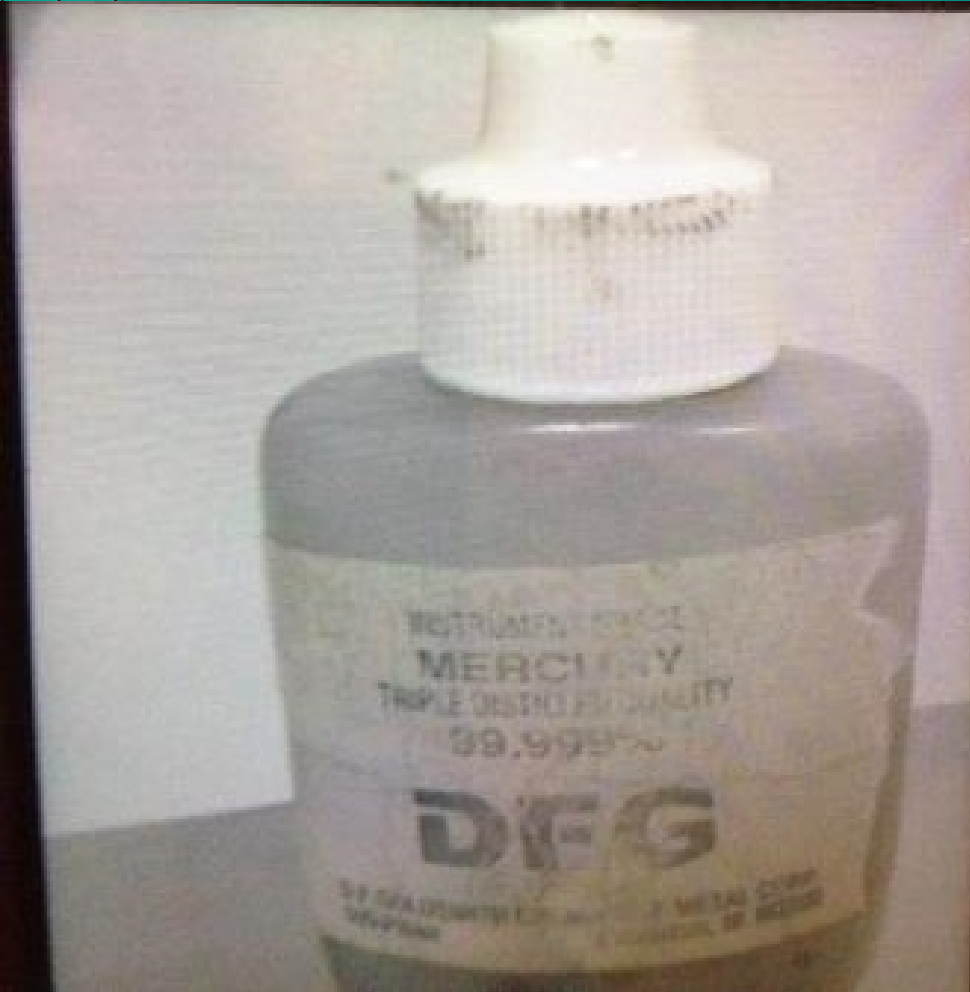
Thanks to Jhonny Ordonez, MD
Created portions of this presentation

It begins...

- Wednesday...
 - Child seen at Childrens Medical Center
 - Fever and a rash
 - Diagnosed with a viral syndrome and home he goes

Thursday Night / Friday AM

- Mom brings same child back to the CMC ED along with a second child who is similarly ill; first child is no better.
- And...oh, by the way...she pulls out of her purse...

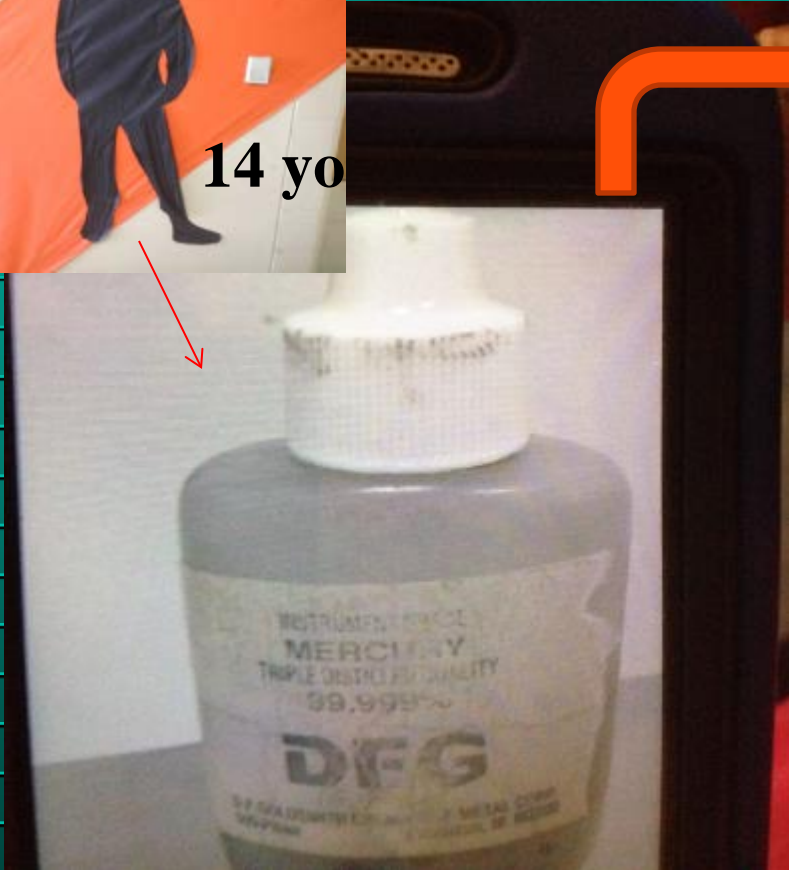


Turns out one of the kids wondered if the illness might be related to the Mercury; he did internet search, he talked to his mother

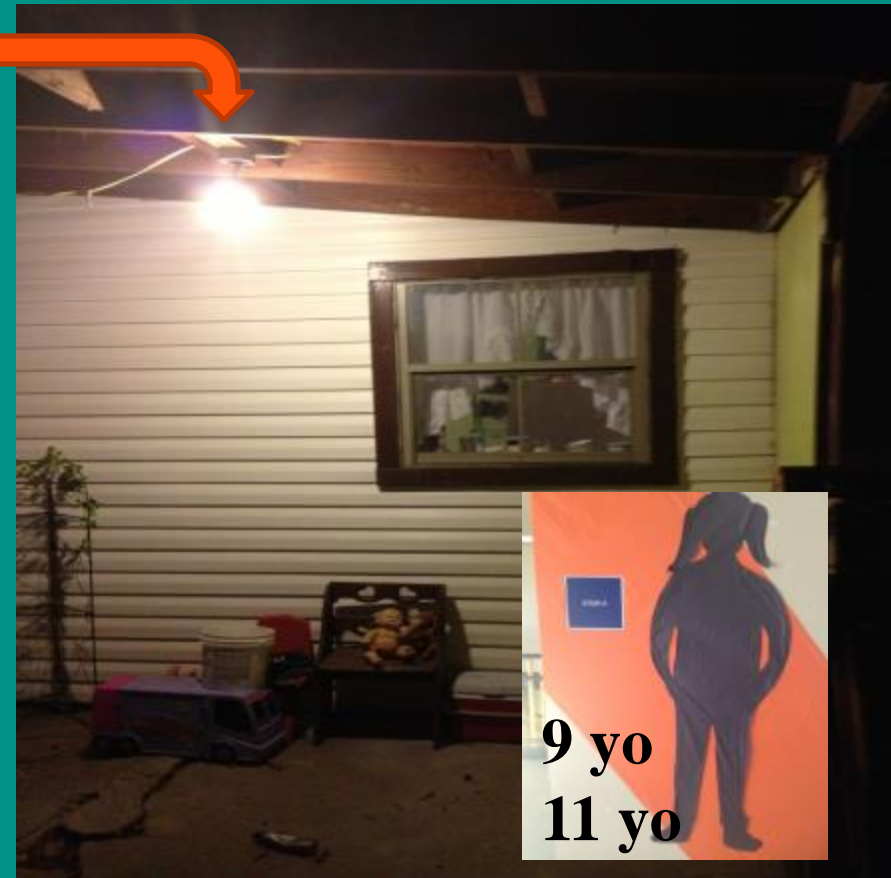
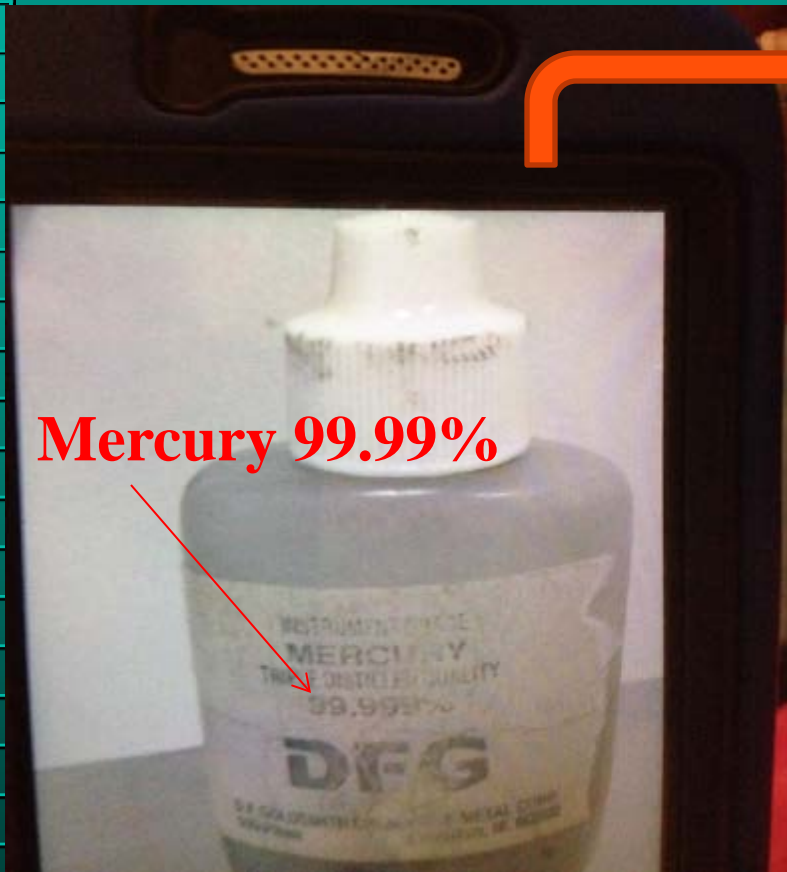
Now worry for Mercury toxicity...

- Two children are admitted to the hospital
- Toxicology is called
 - Mother and children interviewed
 - Learned what occurred...
 - Learned of a 11 day exposure at home
 - Learned of a 3rd child

Where Hg was found



Hg exposure-taking it home..



Ghostbuster Moment...

Who ya' gonna' call?

- Who MUST be involved?
- Who MAY WANT to be involved?
- What has already occurred?
- Other questions for the kids?

Who MUST be involved?

Who MAY WANT to be involved?

- Dallas County Health Department
- Childrens Medical Center
- EPA
- Agency for Toxic Substances and Disease Registry



- Mass gathering of CMC, Dept of Health, EPA, Tox Nerds
- More questioning of the kids...
- Turns out...

What has already occurred?

- Where has the Mercury been...
 - Mom's purse
 - Mom's Car
 - CMC Emergency Room
 - The Childrens' rooms at the hospital
 - Talk with the kids more about...where they may have taken the mercury...

...and...where is the mercury bottle now?

Best guess Mercury last seen ...? ED

- Full assault search began in
 - the admission floor nursing station and patient room
 - The ED



Mercury found in the ED in this trash receptacle...that is now bagged over the top

Sign says: “Non-hazardous waste; Incinerate Only”

What has already occurred?

- Is the Children's ED and admission floor area contaminated?!?!?!?!?!?



HOT



NOT



Other Questions for the Kids...

- So...really...anywhere besides at home...showed this cool stuff to your buddies?

Yep took it to school.

Well...took it to schools

Time: Late Friday afternoon.

Schools with events that evening and through the weekend...

Now what to do?

- EPA present but with limited detection equipment.
- Schools now involved.

Any place else where contamination may be present...and anybody else at risk?

- The kids home ...and the attached home are at risk...and other family members are there.
- EPA calls their buddies at the Texas Commission on Environmental Quality (TCEQ) for support
- We contact the Dallas Independent School District

Friday Night

- EPA and TCEQ teams split up and assess
 - Elementary School
 - Middle School
 - The family's Garage home
 - The actual house to which the garage belongs



Final Score

LOCATIONS

- Elementary School
- Middle School
- The family's Garage home
- The actual house to which the garage belongs

CONTAMINATION

- YES (Portions)
- NO
- VERY YES
- MINIMAL

Time: Friday Night close to midnight
School evening activities are long over

Contaminated Areas



What to do...What are the Considerations?

- Weekend of Teleconferences...everybody on the line
 - EPA
 - TCEQ
 - ATSDR
 - Dallas County Health Dept.
 - Dallas Schools
 - UTSW Toxicology
 - North Texas Poison Center
 - Childrens Medical Center

Health risk to schools
What information to families?
What will Monday bring?

Risk
Communication

This is what made this
event a “success”

The Discussions

- Close contaminated portions of the school to clean
- Get in front of the media; get our word out first
- Create information letter to parents for weekend distribution and passing out on Monday. Vet DRAFTS around the group.
- Establish a central 24/7 place for worried parents and others to call (The Poison Center)
- Detailed conversations with other kids on Monday to learn of other possible exposure/contaminations
- Plan assessments of kids shoes for Monday – to assess footwear contamination.
- Establish an evening meeting for interested parties for early in the week (Tuesday).
- Boots on the ground early...

Monday AM at school interviews



Monday AM in the classrooms



Tuesday Evening



The Clean Up

- Portions of the school closed for a week
- Many members of a contractor there (Paid by Dallas Independent School District)
- The Garage Home – most clothes, all soft chairs and couches, etc. – lost. Some items able to be cleaned. Tile had to be removed and more cleaning. I'm still not sure who paid the bill. The family did not have the means.

The Sick Kids

- Classic Inhalation of Elemental Mercury Presentation
 - If severe; acute lung injury
 - Hypertension
 - Rash
 - Fever
 - Emotional issues
- All three kids had the illness.

Rash

- Diffuse petechial rash that spares palms.
- But can also be diffuse and blanch.
- Our review of the literature found these same descriptions and more.



Arm

Hg Rash (our kids)

Knee

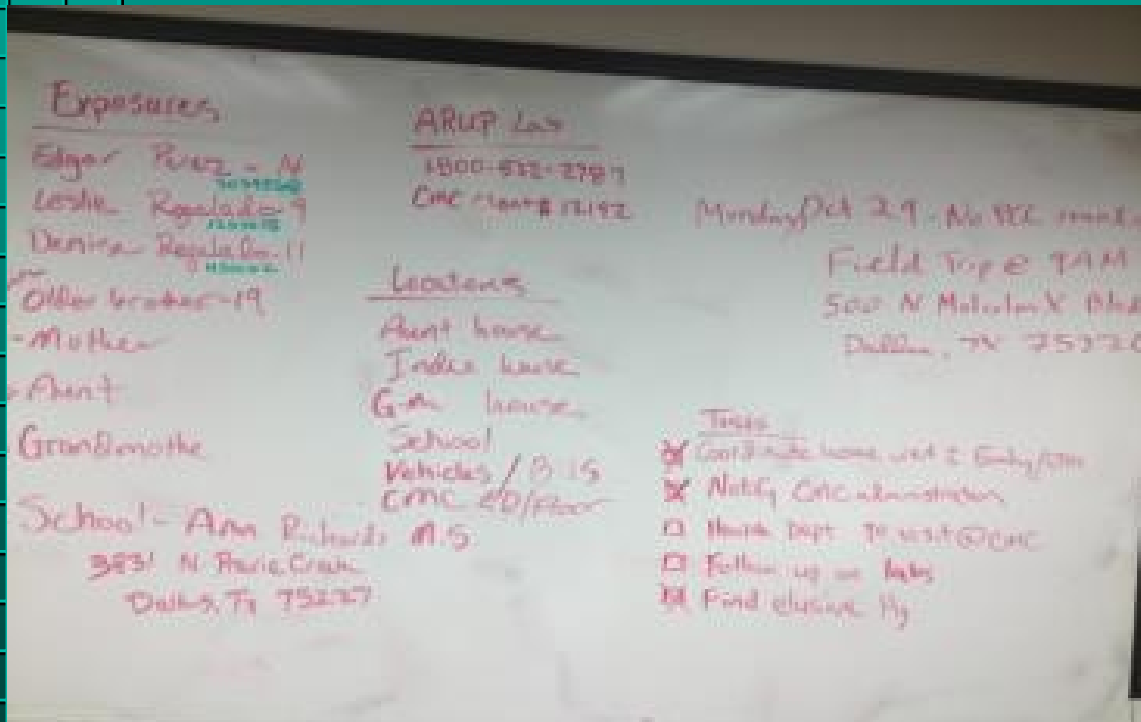




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Toxicology Assessment

- Multiple members of the family
- All assessed by the tox service; mercury levels determined
- Only the three kids were ill



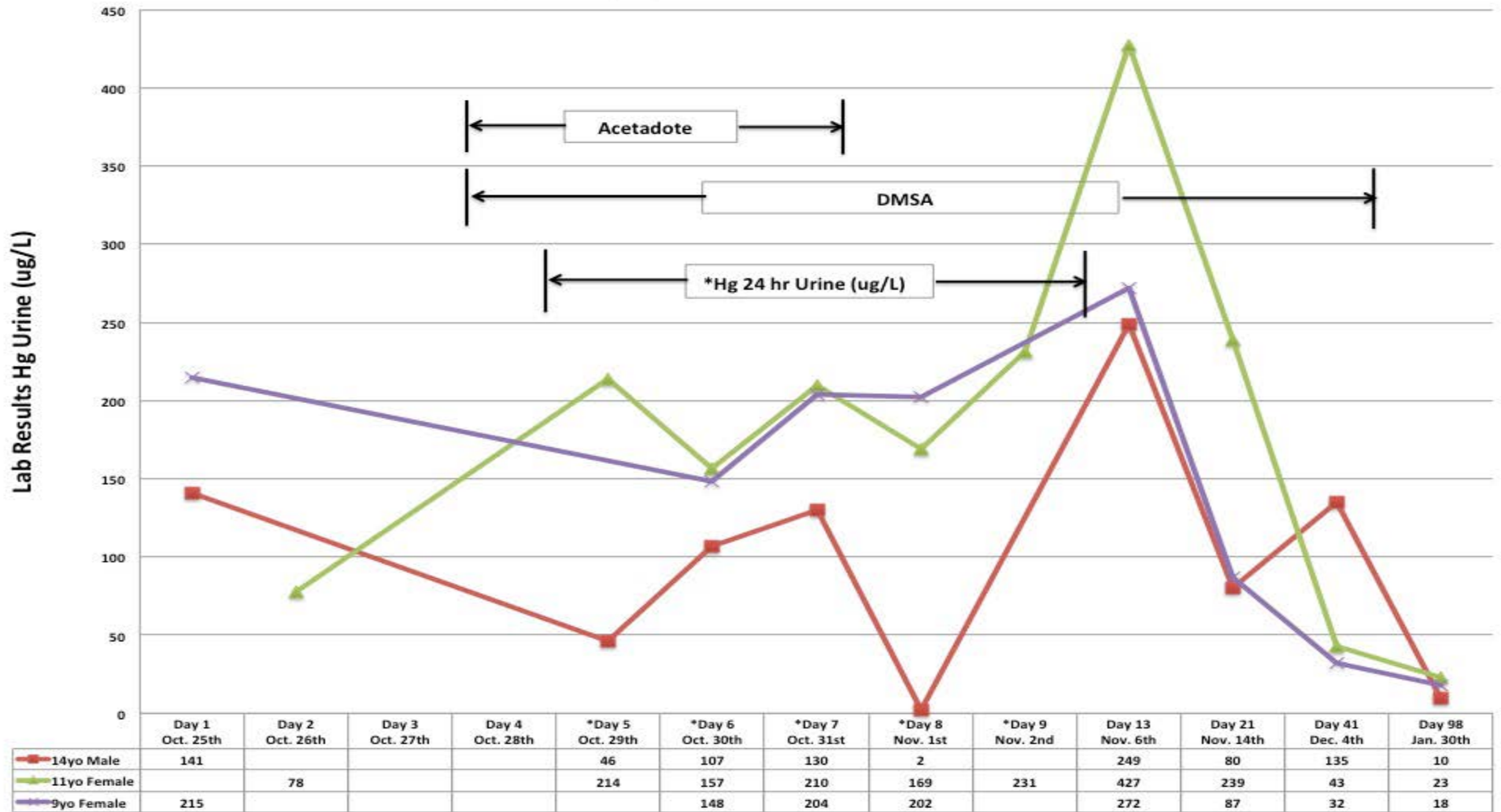
Hg levels in these kids

References: B=Blood 0-10 ug/L U=Urine 0-10 ug/L 24-h Urine 0-15 ug/day	9 yo	11 yo	14 yo
10 days post 1 st d of exposure	137 (B) 215 (U)	79 78	160 141
14 d post exp.	35 (B) 314 (24-U)	43 840	39 181
18 d post exp.	42 (B) 333 (24-U)	24 116	28 5
30 d post exp.	16 (B) 87 (U)	24 239	16 80
6 month post exp.	15 (U)	9	6

Acute Elemental Mercury Poisoning Masquerading as Fever & Rash

Young A, Wax P, Ordonez J, Smith E, Kleinschmidt K UT Southwestern Medical Center & the North Texas Poison Center

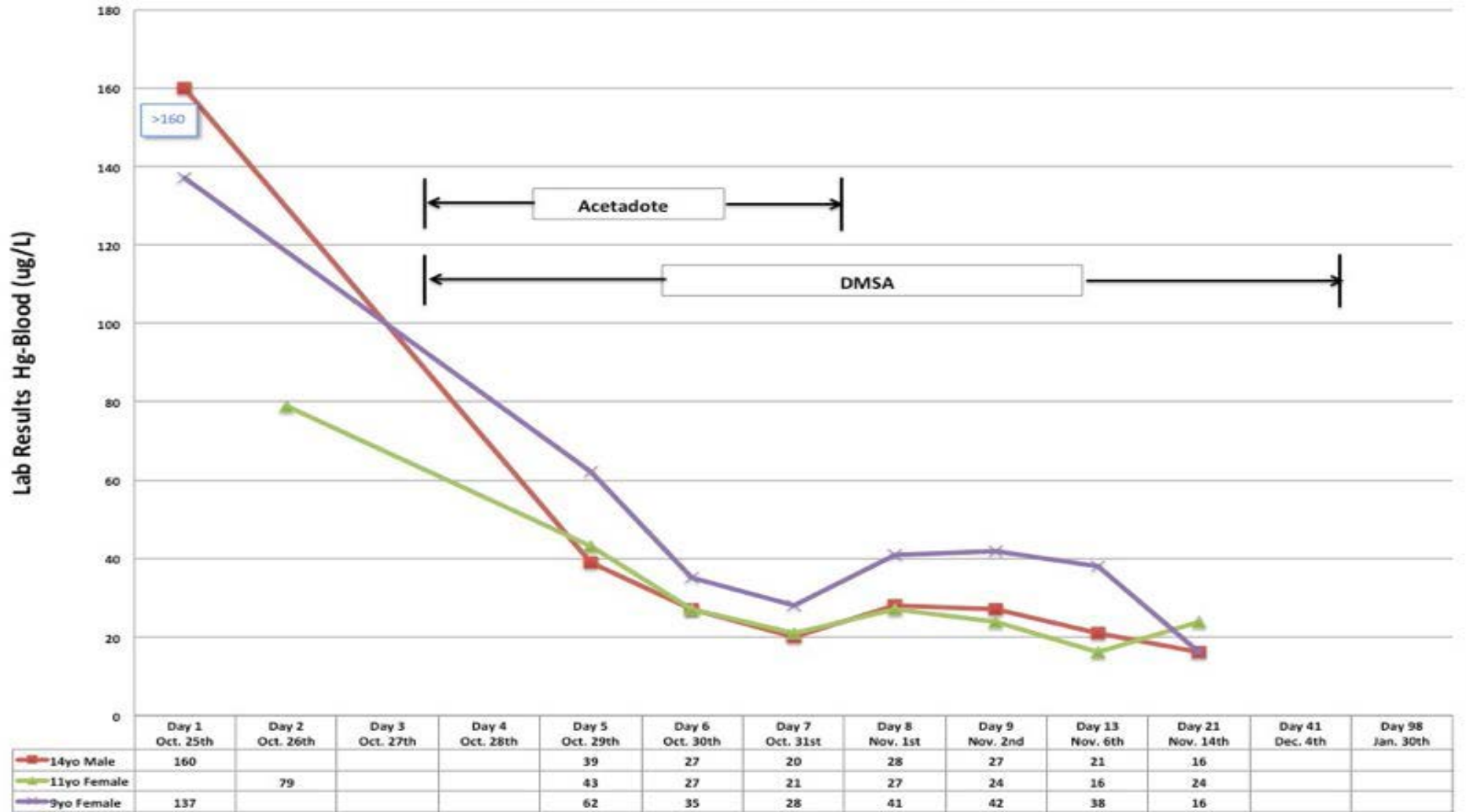
Hg Urine (ug/L) Monitored over Three Months



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Conclusion

- Inhalational mercury often presents like a viral syndrome with fever and rash
- The Risk Communication piece can be vast and there is a need to ensure that all the players are at the table
- Everybody talking, sharing their expertise, and all agreeing on the plan...helps these events
- Mercury clean ups can be very expensive.