



# Interfacility transfer times of salicylate poisoned patients in a rural poison center population

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## Background

- Salicylate overdose is a common presentation to emergency departments and may require hemodialysis for severe toxicity.
- In many rural settings, the need for hemodialysis (HD) necessitates patient transfer from one health care facility (HCF) to another that has a higher level of care. Delays in this process can lead to worsened patient outcomes.
- The purpose of this study was to determine the amount of time it takes to transfer a salicylate poisoned patient from an institution without hemodialysis capability to one with the ability to perform HD.

## Methods

- This study was a retrospective, consecutive-case review of all primary salicylate ingestions managed by a single poison center involving all patients who were transferred from one HCF to another for clinical management between 1/2003 and 9/2014.
- Demographic, clinical, and exposure characteristics were assessed descriptively.
- Two time periods were evaluated, from when the PC recommended transfer to:
  - a) arrival at the second HCF, and
  - b) when HD was performed.

### Clinical management Total number of patients n = 84

Characteristic	Number of patients (n)	Percentage of total patients (%)
<b>Reason for Transfer</b>		
Dialysis	24	28.6
ICU Level of Care	60	71.4
<b>Hemodialysis Performed</b>		
Yes	13	15.5
No	68	81.0
Missing/Unknown	3	3.6

### Transfer Times

Category	Patients with available data	Median time	Range
<b>Time between PC recommendation of transfer to arrival time at next HCF</b>			
Overall	65	244 min (4.1 hours)	23 min (0.4 hours) – 1,426 min (23.8 hours)
Patients with Major Clinical Effects	12	259 min (4.3 hours)	46 min (4.3 hours) – 1,140 min (19 hours)
Patients with Moderate Clinical Effects	41	289 min (4.8 hours)	146 min (3.4 hours) – 432 min (7.2 hours)
<b>Patients where hemodialysis was performed</b>			
Time between PC recommendation of transfer to arrival time at next HCF	11	902 min (15 hours)	46 min (0.8 hours) – 1,140 min (19 hours)
Time between PC recommendation of transfer to performing hemodialysis	11	1,173 min (19.6 hours)	171 min (2.9 hours) – 1,681 min (28.0 hours)

## Results

- 84 patients were identified. The majority were females (74%), ages 13-19 (36%), and ingested salicylates with suicidal intent (61%).
- Need for HD was the reason for transfer in 28.6% of cases.
- 54.2% of patients transferred for HD actually had HD performed.
- Ultimately HD was performed on 15.5% of patients.
- The median time between BRPC recommendations of transfer to arrival to HCF was 4.1 hours. The median time between BRPC recommendations of transfer to performing HD was 19.6 hours.

## Discussion

- The need for transfer places a significant delay in obtaining hemodialysis for patients with severe salicylate intoxication.
- Limitations to this study include the retrospective nature and small sample size.

## Conclusion

- Transfer for hemodialysis or a higher level of care often takes several hours.
- Physicians without intensive care unit or hemodialysis capability should anticipate the need for transfer early and be aware of the prolonged time period before receiving further care.

