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Department of Medicine

**AVAILABILITY OF ATRA, BLOOD BANK SUPPORT, TREATMENT  
PROTOCOLS AND HEMATOLOGISTS/ONCOLOGISTS FOR  
MANAGEMENT OF APL IN TWO STATES (MICHIGAN AND  
LOUISIANA) IN THE USA.**

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# OUTLINE

- Purpose

The background for the study

- Methodology

An overview of how the study was conducted

- Results

The main results achieved from this study

- Conclusion

The implications for future works

# BACKGROUND AND PURPOSE

- Acute Promyelocytic Leukemia (APL) is a subtype of AML characterized by pancytopenia, fatigue, and bleeding.
- Outstanding treatments are available and cure rates are in excess of 90% in clinical trials. However, 30% of patients in the general population die during induction (Early Death-- ED).
- It is well known that starting ATRA at first suspicion of APL improves outcomes.
- In the US there have always been concerns about the ready availability of ATRA.
- The other concern is availability of blood bank support and expertise in managing APL.
- We investigated the readiness of treatment facilities in two U.S. states (Michigan and Louisiana) due to their low one-year APL survival rate.
- Each state was surveyed on the prompt availability of ATRA, trained physicians, blood bank support and treatment protocols.



# METHODOLOGY

	Michigan	Louisiana	Total
Population	9,883,640	4,533,372	14,417,012
Eligible Hospital #	131*	121*	252
Hospitals That Treat Leukemia	14	9	23



\* All eligible hospitals were obtained from the Data Medicare online directory (<https://data.medicare.gov/>).

## Table 1. The survey questions for each of the 23 Leukemia treatment centers.

1. Do you have ATRA on formulary?
2. Do you have ATRA in stock?
3. If not on formulary, could you order it?
4. If ordered, how soon would you receive it?
5. Is there a hematologist on staff?
6. Do you have blood bank support?
7. Do you have a treatment protocol?

# HOSPITALS TREATING APL

## (n = 23)

	Response	Michigan (n=14)	Louisiana (n=9)
ATRA	Yes	4	2
	No	10	7
Treatment Protocols	Yes	4	1
	No	10	8
Blood Bank	Yes	14	9
	No	0	0
Trained Physicians	Yes	14	9
	No	0	0



# RESULTS

	Michigan (n=7)	Louisiana (n=10)	Total
Available after Approval	4	3	7
Available in One to Two Days	0	3	3
Available within Two Weeks	3	0	3
No Exact Date Given	0	4	4



# DISCUSSION

- Early initiation of ATRA reduces the severity of DIC and decreases mortality
- Availability of algorithm for treatment and support improves outcomes --- like in clinical trials.
- Use of an algorithm in Brazilian and our Georgia/South Carolina experience showed a decrease in mortality
- A trained hematologist was available in all APL treating hospitals.
- Adequate blood bank support was available in all APL treating centers.
- ATRA was available in 6/23 hospitals APL treating hospitals.
- A written protocol was available in 5/23 hospitals.