Jacobs vs Charitable Sisters of Mercy Hospital et al..
Chronological Timeline V. Deviations from SOC

Date/Time	Source/Entry	Facts	Comments
		BACKGROUND	
05/17-19/2020	Ms. Jacobs Statement	Ticks, found by Ms. Jacobs, on Joshua ears. Joshua is 6 months old.	Negligence of the mother Ms. Jacobs.[1]
05/20/2020 08:15am		Joshua broke out in a fever.[2]	Day three (3).
05/21/2020 02:30pm		Joshua broke out in a rash. Ms. Jacobs took Joshua to Dr. Bringham Young's office for diarrhea x 1 week, rash and fever. [2] Ms. Jacobs expressed concern for Rocky Mountain Spotted Fever (RMSF). Ms. Jacobs expressed history of tick bites.	Day four (4).
05/21/2020 06:15pm	Dr. Young Progress Note	Documented tick bites were found four (4) days prior to visit. Documented presence of "spots all over, fever and diarrhea." Diagnoses: 1) Fever of unknown origin 2) Rule out RMSF 3) Rule out meningitis Joshua was admitted to Our Charitable Sisters of Mercy Hospital Inc.	Day four (4) Dr. Young delayed definitive diagnosis.[2] Dr. Young delayed treatment.[3]
05/21/2020 07:30pm	Dr. Young H&P EMR	Admission Diagnosis: was viral enteritis and rule out Coxsackie and other viral.	Inconsistent/conflicting documentation by Dr. Young.[4]

[1] Ms. Jacobs for finding ticks repeatedly on child over a three (3) day period and high probability of not removing for many hours.[1]

[2] Per literature review, Dr. Young's suspicion of a different diagnosis correlates with frequent findings for reason in delay of RMSF diagnosis. [2, 4, 6, 11]

[3] Dr. Young failed to initiate evidence-based empiric treatment per clinical guidelines upon suspicion of RMSF. [4, 5, 7, 9, 11, 13]

[4] Admitting diagnosis differs in various places such as; admission H&P, orders, and pediatric record.

Jacobs vs Charitable Sisters of Mercy Hospital et al..
Chronological Timeline V. Deviations from SOC

Date/Time	Source/Entry	Facts	Comments
		Admission orders listed diagnosis "possible septicemia and possible tick bite fever." Documented the family had dogs that stayed outside.[8]	
05/21/2020 07:15pm	Dr. Young EMR Orders	Serum sample for RMSF – fluorescent antibody test[5] Blood Cultures Nose Culture Throat Culture Lumbar puncture performed – Spinal fluid culture[6] Infectious disease consult Gentamicin Rocephin[7]	Dr. Young delayed diagnosis.[8] Dr. Young delayed treatment. (n3)
05/21 – 05/24, 2020	EMR	Joshua continued to have fever along with rash despite antibiotics.	Day four (4) – seven (7). Dr. Young delayed diagnosis and treatment. (n3), 1.[9] Dr. Young failure to document.[10]

[5] Serum sample provides results too delayed for initiation of treatment. Though they are found to be 95% accurate. [11]

[6] Lumbar puncture results have been found to be inconclusive. [3]

[7] Gentamicin and Rocephin are not recommended medications for treatment of any of the suspected diagnosis charted by Dr. Young.

[8] Dr. Young failed to order standard admission lab work. There is no CBC, CMP, UA, stool PCR. Review protocols for admission lab work. [2, 3, 11]

[9] Routine and regular lab work should be conducted to monitor patients' status and progression. There is no indication that labs were drawn on a consistent basis. Literature states that labs should be assessed daily, minimally, for an infant on a medical floor and more frequently as indicated based on severity of condition. In cases of RMSF thrombocytopenia becomes more prevalent in the progression of the disease. [2, 3, 12]

[10] Dr. Young, there is no indication, according to medical records, that Dr. Young saw Joshua again until May 24, 2020, after May 21, 2020. The next medical progress note entered by Dr. Young was on May 25, 2020. Dr. Young billed for daily hospital visits, indication of possible fraud. Review hospital policy on rounding and documentation requirements of providers. Review reimbursement criteria per insurance protocol.

Jacobs vs Charitable Sisters of Mercy Hospital et al..
Chronological Timeline V. Deviations from SOC

Date/Time	Source/Entry	Facts	Comments
05/22/2020 08:45am	Dr. Mike Robe Infectious Disease EMR	Examined John Documented: diarrhea x 1 week. Fever resolved but returned on May 20, 2020. Onset of rash on May 21, 2020. Tick bites were found on the child's ears three, four and five days prior to admission. Enterovirus might be the etiology. "Child was ill actually prior to the onset of tick attachments by history. The rash appearance four days following the first discovery of the tick is a somewhat short incubation period for RMSF. I think overall the entire picture is atypical for this disease. I doubt if this is meningococcemia."	Day five (5). Dr. Robe delayed diagnosis and treatment. (n3), 1. [11]
05/22/2020 09:30am	Dr. Robe EMR	Recommended: a punch biopsy of the skin lesion to identify rickettsial antigen. [11] RMSF serology test would be helpful only retrospectively. [10] Did not feel strongly about Rocephin and Gentamicin. Supportive therapy and close monitoring for petechia. If child began to deteriorate or if petechia appeared, Chloramphenicol[12] would be appropriate drug to give.	Nurse Holly P. delay in treatment.[13]

[11] Delay in diagnosis: Dr. Robe is board-certified in infectious disease and therefore should have a mastery ability to diagnosis and treat of such to include RMSF. [4, 5, 7, 9, 19]

[12] Chloramphenicol is not the first line recommendation for treatment of RMSF and is known to have higher mortality rates. Empiric Therapy, doxycycline, was not initiated timely in accordance with clinically supported guidelines. Delaying treatment increases mortality. [5, 9, 11, 13, 14, 15]

[13] Nurse Holly P., no indication in the record that recommendation of a punch biopsy stated by Dr. Robe was carried out in clinical course of treatment. Review hospital policy on order completion.

Jacobs vs Charitable Sisters of Mercy Hospital et al..
Chronological Timeline V. Deviations from SOC

Date/Time	Source/Entry	Facts	Comments
05/23/2020 09:10am	VS Graphic Record	Dr. Robe saw John but no medical progress note.	Day six (6). Dr. Young and Dr. Robe were delayed in treatment. (n2), 1.[14] Dr. Robe failure to document.
INCIDENT			
05/24/2020 07:30am	Lab Results - EMR VS - EMR	Hb and Hct dropped significantly Temperature of 102.4 F [18]	Day seven (7). Nurse Holly P. delay in treatment.[15]
05/25/2020 07:20pm	Nurse Note EMR	Condition began to deteriorate. Joshua had a temperature, weak cry and fine rales. Later that evening, (09:45pm) he developed rapid and shallow breathing and abdominal distention. The liver and spleen were enlarged. Mottling of the skin. [20]	Day eight (8) Nurse Jessica N. delay in treatment. [16],[17]
05/26/2020 12:30am	Orders EMR	Chloramphenicol (n12). Ampicillin	Day nine (9) Nurse Jessica N. delay in treatment.[18]

[14] Dr. Young and Dr. Robe, for the date of 05/23/2020, two (2) days after admission there is no provider note or orders by Dr. Robe or Dr. Young on hospitalized patient. Review hospital protocol on patient rounding and documentation. [4, 5, 7, 8, 12]

[15] Nurse Holly P., failed to notify a provider on patient status. Standard of care for abnormal labs or worsening symptoms is to notify provider. Review hospital policies on provider notification.

[16] Nurse Jessica N. failed to notify provider of Joshua's deteriorating condition in a timely manner. Deteriorating condition was noted initially at 07:20pm, worsening by 09:45pm. There is no indication of provider notification, assessment, or new orders until 2:20 am. A seven (7) hour laps from initial noted changes to invention initiation. Review hospital policy on provider notification. Review credentials of nurse Jessica N. for appropriate patient assignment. Review staffing.

[17] Nurse Jessica N. failed to activate rapid response team upon noting deteriorating condition at 07:20pm and again at 09:45pm with further decompensation. Appropriate interventions were not initiated till 02:20am, seven (7) hours after initial changes noted. Review hospital policy on rapid response team. Review credentials of nurse Jessica N. for appropriate patient assignment. Review staffing.

[18] Nurse Jessica N. for not administering chloramphenicol and ampicillin medications as ordered. Standard of care is a medication can be administered 1 hour before or one hour after the scheduled administration time. STAT means right now there is no need to delay in administration. Review hospital policy on medication administration.

Jacobs vs Charitable Sisters of Mercy Hospital et al..
Chronological Timeline V. Deviations from SOC

Date/Time	Source/Entry	Facts	Comments
05/26/2020 06:30am	MAR-EMR	Chloramphenicol first dose.	Nurse Nick S. delay in treatment.[19],[20]
05/26/2020 10:15am	EMR	Transferred by Life Flight Joshua was given fresh frozen plasma and albumin before transfer by Life Flight.	Nurse Nick S. delay in treatment.[21]
05/26/2020 Approx.. 11:00am	Mission Hospital EMR	Joshua arrived at Mission with fresh frozen plasma infusing. He was taken to the PICU. He was noted to be irritable, pale, gray and edematous. He had grunting respirations at a rate of 20/min and was receiving oxygen via face mask at 5 liters/min. Auscultation of the lungs revealed decreased breath sounds.	Day nine (9).
05/26/2020 11:30am	Admission Exam EMR	Neurological exam revealed a midline gaze with no fixing or following. He was irritable and unresponsive. [3] Heart rate was regular at 196 with faint gallop and murmur. Pulses in all extremities were thready. Scrotal swelling and erythema were noted as well as a peri-rectal rash. Skin was mottled with a fine, flat rash and petechia over the extremities including a few petechia noted on the palms and soles of his feet. Blood was oozing from previous puncture sites.	Day nine (9)

[19] Nurse Nick S. failed to administer chloramphenicol in a timely manner. Chloramphenicol was ordered at 12:30 and not administered till 06:30am. That is six (6) hours delay from when order was placed. Review Hospital policy on medication administration.

[20] Nurse Nick S. failed to administer ampicillin medication as ordered. Ampicillin was ordered at 12:30 and there is no indication this medication was ever administered to Joshua. Review Hospital policy on medication administration.

[21] Nurse Nick S. failed to initiate DIC treatment protocol in a timely manner. DIC was diagnosed by Dr. Round at 2:20am. Documentation states Joshua was given treatment protocol of albumin and frozen plasma before transfer by Life Flight at 10:15am. This is an almost eight (8) hour delay from order time to initiation. Documentation also notes that Joshua arrived at Mission Hospital at 11:00 with fresh plasma infusing.

Jacobs vs Charitable Sisters of Mercy Hospital et al..
Chronological Timeline V. Deviations from SOC

Date/Time	Source/Entry	Facts	Comments
05/26/2020 11:30am 11:57am	EMR	John now on 7 liters/min of O2 via face mask.[22] Joshua had labored breathing and was intubated. N-G tube placed to decompress the stomach.	Joshua had increase oxygen demand.
05/26/2020 12:17pm	Radiology Report EMR	Chest X-ray: pleural edema with fluid in the pleural fissures.	Pleural edema: fluid inside the lung.[23]
05/27/2020 12:40am	Progress Notes EMR	Joshua sustained a cardiac arrest. Resuscitation was instituted and was stopped at 01:40am.	Day ten (10)[24]

[22] Humans should be able to get sufficient oxygenation from room air. When the need for supplemental oxygen arises, the patient has respiratory compromise. The more supplemental oxygen is needed the more compromised and further progression into respiratory distress the patient becomes. If unable to correct progresses to intubation, which did occur in this case twenty-seven (27) minutes later.

[23] Fluid in the lungs and the fissures severely impair breathing. It limits lung expansion, interferes with gas exchange, and causes intense pressure.

[24] Joshua pronounced dead ten (10) days after the first tick finding by Ms. Jacobs. Joshua pronounced dead seven (7) days from initial admission to Charitable Sisters of Mercy Hospital. Literature review notes delaying treatment beyond first five (5) days of symptoms significantly increases mortality. [19}

References

1. Johnson JE 3rd, Kadull PJ. Rocky Mountain spotted fever acquired in a laboratory. N Engl J Med 1967; 277:842.

2. Helmick CG, Bernard KW, D'Angelo LJ. Rocky Mountain spotted fever: clinical, laboratory, and epidemiological features of 262 cases. J Infect Dis 1984; 150:480.

3. Buckingham SC, Marshall GS, Schutze GE, et al. Clinical and laboratory features, hospital course, and outcome of Rocky Mountain spotted fever in children. J Pediatr 2007; 150:180.

4. Dantas-Torres F. Rocky Mountain spotted fever. Lancet Infect Dis 2007; 7:724.

5. Centers for Disease Control and Prevention (CDC). Consequences of delayed diagnosis of Rocky Mountain spotted fever in children--West Virginia, Michigan, Tennessee, and Oklahoma, May-July 2000. MMWR Morb Mortal Wkly Rep 2000; 49:885.

6. Apperson CS, Engber B, Nicholson WL, et al. Tick-borne diseases in North Carolina: is "Rickettsia amblyommii" a possible cause of rickettsiosis reported as Rocky Mountain spotted fever? Vector Borne Zoonotic Dis 2008; 8:597.

7. Walker DH. Rocky Mountain spotted fever: a seasonal alert. Clin Infect Dis 1995; 20:1111.

8. Thorner AR, Walker DH, Petri WA Jr. Rocky mountain spotted fever. Clin Infect Dis 1998; 27:1353.

9. American Academy of Pediatrics. Rocky Mountain Spotted Fever. In: Red Book: 2012 Report of the Committee on Infectious Diseases, 29th ed, Pickering LK (Ed), American Academy of Pediatrics, Elk Grove Village, IL 2012.

10. Kaplan JE, Schonberger LB. The sensitivity of various serologic tests in the diagnosis of Rocky Mountain spotted fever. Am J Trop Med Hyg 1986; 35:840.

11. Chapman AS, Bakken JS, Folk SM, et al. Diagnosis and management of tickborne rickettsial diseases: Rocky Mountain spotted fever, ehrlichioses, and anaplasmosis--United States: a practical guide for physicians and other health-care and public health professionals. MMWR Recomm Rep 2006; 55:1.

12. Allyn J, Devineau M, Oliver M, Descombes G, Allou N, Ferdynus C. A descriptive study of routine laboratory testing in intensive care unit in nearly 140,000 patient stays. Sci Rep. 2022 Dec 13;12(1):21526. doi: 10.1038/s41598-022-25961-1. PMID: 36513742; PMCID: PMC9747911.

13. American Academy of Pediatrics (AAP). Red Book: 2012 Report of the Committee on Infectio us Diseases, 29, Pickering LK, Baker CJ, Kimberlin DW, Long SS (Eds), American Academy of Pediatrics, Elk Grove, IL 2012.

14. Dalton MJ, Clarke MJ, Holman RC, et al. National surveillance for Rocky Mountain spotted fever, 1981-1992: epidemiologic summary and evaluation of risk factors for fatal outcome. Am J Trop Med Hyg 1995; 52:405.

15. Biggs HM, Behravesh CB, Bradley KK, et al. Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever and Other Spotted Fever Group Rickettsioses, Ehrlichioses, and Anaplasmosis - United States. MMWR Recomm Rep 2016; 65:1. 20.

16. New England Journal of Medicine 2016-12-01 375(22): 2187-2187.

17. Das S, Ray S. Mottling, Lactate, and the Microcirculation in Sepsis: Are We Back to Bedside Clinical Assessment after the Honeymoon with Technology? Indian J Crit Care Med. 2020 Aug;24(8):615-616. doi: 10.5005/jp-journals-10071-23514. PMID: 33024361; PMCID: PMC7519621.

18. Cleavland Clinic, 2019.

19. Sepsis.org, 2015.

20. National Heart, Lung, and Blood Institute, 2018.