

## **Exhibit L**

### **Dr. Evadne Marcolini Report**

*Vargas v. Cook County  
18 CV 1865  
Exhibits to Defendants Statement of Facts*

Mr. Joel Flaxman  
200 Michigan Ave, Suite 201  
Chicago, IL. 60604

Re: Angel Cruz

Dear Mr. Flaxman,

I am a physician licensed to practice medicine in New Hampshire and Vermont. I am Board Certified in Emergency Medicine and Neurocritical Care. I am currently an attending physician and core faculty in the Department of Emergency Medicine at Dartmouth Hitchcock Medical Center, Lebanon, NH. I attach my curriculum vitae and a list of cases in which I have served as an expert. I am being compensated at the rate of \$500 per hour for her work in preparing this expert report, which required 11 hours. My rate for testimony is \$4,000 per half day of deposition or trial. Any travel for out-of-town testimony is billed at this rate for the duration of time I am out of the office plus travel and hotel expenses, and video conferences for deposition are billed at the same rate. In forming the opinions below, I reviewed the materials identified on the attached list that were provided to me by Attorney Joel Flaxman.

Angel Cruz, a 29-year-old male with a history of morbid obesity was brought to the Cook County jail on March 15, 2016. Records from Adventist Hinsdale Hospital state that Angel weighed 360 pounds and was 5 feet 9 inches tall. Records from the Cook County Jail record Angel's weight at 280 pounds. The Medical Examiner found that his body weighed 338 pounds. Angel was morbidly obese. He was subsequently found to be in cardiac arrest on March 20<sup>th</sup> and was pronounced dead at 4:08 AM after being intubated by Doctor Arora at Saint Anthony Hospital with continuing advanced cardiac life support being performed, including two rounds of epinephrine and chest compressions. Angel's autopsy showed that he died from pulmonary thromboemboli secondary to deep vein thrombosis of the legs, with obesity as a contributing factor. This young man had been at the jail from March 15, 2016 and during his stay had been held in four-point restraints plus a chest restraint for about 17 1/2 hours, from about 6:00 PM on March 18, 2016 until about 11:30 AM on March 19, 2016. The standard of care for a patient of Angel's size who is placed in restraints required precautions to prevent deep vein thrombosis, subsequent pulmonary embolus, and cardiovascular collapse.

Angel was in custody because he had physically attacked his mother, Leticia Vargas, and his stepfather, Joel Castillo, on March 12, 2016. Police brought Angel to the Adventist Hinsdale Hospital after being called for an aggravated domestic battery, as they deemed that he needed a psychiatric evaluation.

At Hinsdale Hospital, Angel was diagnosed with psychosis. On admission, he had a slight fever at 100.4 and a heart rate of 137. His labs showed an elevated white blood cell count at 15.9 and an elevated lactate level at 8. A toxicology screen was negative for amphetamine, barbiturate, benzodiazepine, cocaine, opiate, PCP and cannabinoids. He

received a CT of his brain which showed “no acute intracranial hemorrhage, mass effect, midline shift.” He had a chest X-ray which showed “limited inspiration with right basilar atelectasis, but no evidence of consolidation or pleural effusion.” Angel’s elevated lactate level was presumed to have been due to rhabdomyolysis, supported by an elevated CPK which was 556 on 3/12/16. This lactate level came down to 1.3 after IV fluid administration.

During his stay at Hinsdale Hospital, Angel was placed in four-point restraints on March 13, 2016 from 1:24 AM until 10:05 AM. As noted by nursing, Angel was “jumping out of bed, grabbing IV pole, hallucinating, clenching fist. Medical intervention as ordered by D unsuccessful.” On March 14, 2016 at 6:31 AM, Angel was noted as acting “aggressive, agitated, disruptive, explosive, inappropriate, uncooperative.” At this time the resident physician ordered four-point restraints but it appears that Angel was released to police custody before the order was carried out.

Doctor Hytham Zayed, who admitted Angel to the ICU at Hinsdale Hospital, ordered heparin at 5000 units per milliliter to be given subcutaneously every eight hours to prevent blood clots. This met the standard of care because of Angel’s obesity and reduced mobility while he was handcuffed to the hospital bed. Doctor Yalamanchi notes that every patient admitted to the ICU at Hinsdale Hospital receives DVT prophylaxis either by medication or through mechanical measures. Angel was ordered to receive heparin throughout his stay at Hinsdale Hospital. He also received continuous intravenous fluids while at Hinsdale Hospital.

Angel was taken to the Countryside Police Department on the 14th of March and then to the Cook County Jail on March 15, 2016.

At the jail, Doctor Usha Kartan diagnosed Angel with obesity, hypertension, asthma, high cholesterol, and paranoid schizophrenia. A chest x-ray showed the lungs to be “clear of suspicious densities.” Doctor Williamson, who examined Angel, noted that his lungs were “clear to auscultation, respirations are non-labored, breath sounds are equal.”

On March 16, 2016 at 3:35 AM Angel was brought to a psychiatric tier inside the jail’s medical wing where he remained until his death. During this part of his stay, Doctor Steve Paschos, a psychiatrist, was in charge of Angel’s care.

Doctor Paschos ordered that Angel be placed in four-point leather restraints with a chest restraint at about 6:00 PM on March 18, 2016. He notes that “the patient is extremely disorganized, acutely psychotic covered in feces, threshing placing self at risk of harm and staff at risk of harm, threatening staff beating his fists on the door and wall, patient’s room covered completely in feces, urine and trash.”

Doctor Paschos notes that at 7:13 PM the patient “continues to be agitated aggressive thrashing, requiring emergency medications.” Doctor Paschos testified that he went into

Angel's cell to talk to him to make his observations but this is inconsistent with surveillance video showing that doctor Paschos never entered Angel's cell.

Angel was in restraints at the jail for nearly 17.5 hours. Under the jail's policy, restraining orders may only be extended beyond the initial 4 hours after an in-person examination and evaluation of the patient, and can only be made by a psychiatrist or an RN in consultation with a psychiatrist. The following was required by the jail's policy to be done by a nurse after and while a detainee is placed in restraints:

- monitor the patient's health and well-being every two hours, including vital signs
- check peripheral circulation, which involves alternating release of all four limbs one limb at a time every two hours unless clinically contraindicated
- offer water to drink every two hours
- offer bathroom breaks every two hours
- offer meals at appropriate mealtimes as meals are offered to other patients

The policy requiring 10 minutes of limb relief every two hours states:

allow all patients to exercise each limb, alternating all four limbs for approximately 10 minutes on a rotation basis, every two hours unless clinically contraindicated for reasons of safety to the patient or others, to prevent physical deterioration and to promote circulation during restraint.

Medical records document that these limb exercises (also referred to as range of motion exercises) were followed, but this is contradicted by the video surveillance records. The surveillance video shows that a nurse was with Angel on March 18th from 7:36 PM to 7:37 PM, 10:06 PM to 10:11 PM, 10:56 PM for less than a minute, 11:06 PM for less than a minute, and on March 19th for 10 minutes from 12:21 AM to 12:31 AM, and then for less than 10 minutes at 12:59 AM to 1:01 AM, 4:56 AM to 4:59 AM, 5:58 AM to 6:06 AM, 7:24 AM to 7:29 AM, 9:31 AM to 9:35 AM, and 11:17 AM to 11:19 AM. Only one of these interactions met the 10 minute standard. Nor did these interactions comply with the "every two hours" requirement.

Nurse Kanel documented the first renewal at 9:55 PM by phone consultation with doctor Paschos. The next renewal should have taken place within 4 hours, by 1:55 AM on March 19, 2016, but there is no recorded renewal until 3:55 AM on March 19th. This renewal did not comply with the required assessment: the surveillance video shows that nurse Chatman did not enter Angel's cell between 1:01 AM and 4:56 AM, which would have been required for appropriate renewal. The last renewal order documented was by nurse Manalastas at 8:08 AM on March 19, 2016. This order followed 5 minutes in the cell from 7:24 AM to 7:29 AM shown on the surveillance video.

On March 19, 2016 Angel was released from restraints at around 11:20 AM. He received medical attention from the weekend psychiatrist at 2 PM. At approximately 9:45 PM, RN Alabi recorded that Angel was “banging his head and exhibiting laboured breathing” and notified the on-call psychiatrist, Dr. Paschos. The nurse then administered medications to Angel, but there is no record of any assessment or intervention in response to the report of labored breathing.

At about 2:35 AM on March 20, 2016, Angel was yelling “help me, help me” from inside his cell. Correctional Officer Anderson relayed this information to the on-duty nurse, RN Kryzowski, who responded at about 2:45 AM to find that Angel had collapsed and was on the floor. Nurse Kryzowski called paramedics, who transported Angel to St. Anthony’s Hospital where he arrived at 3:58 AM.

In summary, Angel Cruz was a patient with a preliminary diagnosis of new onset psychosis, with no previous history of psychiatric illness, and no evidence of toxicologic etiology of his aberrant behavior. He was apprehended at his home after assaulting his mother and stepfather, taken into police custody, and eventually incarcerated after being medically cleared by the medical team at Hinsdale Hospital and determined to be a risk to the safety of staff and others. During his stay at Hinsdale Hospital, he was appropriately administered heparin to mitigate the risk of deep venous clot formation. During his entire stay at the jail, he was not prescribed nor given any medication to reduce the risk of clot formation. The fact that Angel was morbidly obese and kept in 4-point and chest restraints for 17.5 hours created an increased risk of clot formation, which is likely to lead to embolus formation, with clot travelling downstream to the lungs and causing pulmonary embolus, which was the cause of Angel’s untimely death. Not giving him medication or executing appropriate limb release, either of which could mitigate the risk of clot formation, does not meet the standard of care and is medically unreasonable.

The three most common factors contributing to blood clot formation, known as Virchow’s triad, include stasis of blood flow, vessel wall damage and hypercoagulability. If blood flow is slowed in the vessel, there is an increased risk of platelets clumping and forming a blood clot. This slowing of blood flow can be a result of arms and legs not being able to move appropriately, as for a person who is restrained for a long period of time. If any of these three components (stasis, vessel damage, hypercoagulability) is present for a prolonged period of time, treatment is indicated to prevent blood clot formation. This was done at Hinsdale Hospital, in the form of heparin. If medication such as heparin cannot be given, mechanical prophylaxis, such as moving limbs, or placing sequential compression devices on the calves to promote the patient’s own internal mechanisms to breakdown clot, should be applied. Angel’s forced immobility at the jail for 17.5 hours by restraints on his extremities as well as his chest caused blood flow to slow down and was the most significant contributor to the risk of clot formation. Obesity contributed to this risk, through the mechanism of pressure on venous walls decreasing the lumen of the vein and creating a turbulent blood flow, also increasing the risk of blood flow stasis. Not taking any measure to mitigate the risk of clot formation, including limb

release exercise or heparin injections, falls below the standard of care, and is medically unreasonable. Angel's morbid obesity likely increased the risk of clot formation that led to the negative outcome.

In fact, the protocol at the jail requires the movement of limbs at appropriate 2-hour intervals to reduce the risk of clot formation in somebody who is restrained. This protocol was not followed, thereby increasing the risk of blood clot formation through the forced immobilization with four-point and chest restraints for an extended period of time (17.5 hours). This more likely than not led to the formation of blood clot in the deep veins of Angel's legs, subsequent breaking off of clot, creating an embolus which travelled to the lungs, causing circulatory obstruction and ultimate death. This could have been prevented through simple measures that are mandated in the jail's policy. The standard of care requires at least one measure (limb release or medication) to mitigate the risk of clot formation and subsequent sequelae. Failure to meet this standard was medically unreasonable.

The standard of care for any patient who is in restraints is to minimize the time that he must be restrained, by treating aggressive behavior with other measures such as verbal redirection or medications. If these measures are not effective, then bodily restraints are indicated, but these should be renewed every four hours, meaning that there needs to be a medical determination that continued restraints are appropriate. A renewal of a restraint order should include an assessment of the patient and confirmation that the appropriate measures are being taken to prevent blood clot formation. This is the standard of care and is protocolized by the jail, which also requires that the renewal can only be done after an in-person examination and evaluation of the patient, and can only be made by a psychiatrist or an RN in consultation with a psychiatrist. This was not performed consistently by the jail personnel, and contributed to the risk of venous clot formation, pulmonary embolus formation and ultimate death by circulatory collapse secondary to pulmonary embolus.

The medications given to Angel at 9:42 PM, after he had asked for help and about five hours before his eventual cardiac arrest, were 100mg Thorazine IM, 50mg Benadryl IM, and 2mg Ativan IM. These medications have a side effect of decreasing respiratory drive, especially when given together close in time. These medications would have made it more challenging for Angel to breathe, and per the documentation he was already struggling to breath. These sedating medications would likely have made it more difficult for Angel to maintain his oxygenation, adding to the effect of a pulmonary embolus by decreasing oxygenation levels, increasing the workload of the heart and further contributing to cardiovascular collapse.

There is no documentation of anyone helping Angel to determine if he had an obstructed airway, or to determine what his oxygen saturation was, or to determine why he was having a hard time breathing, even though it was documented by Nurse Alabi that Angel was exhibiting labored breathing at 9:45 PM. Later, Nurse Kryzowski did not

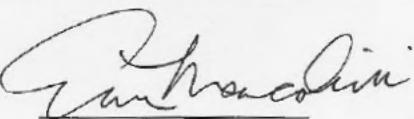
immediately respond to Deputy Anderson who informed her at 2:35 AM that Angel was yelling "Help me, Help me" from his cell, but took 10 minutes to respond and then found that Angel was collapsed on the floor before he subsequently died.

The standard of care for somebody who is exhibiting labored breathing is to assess the airway by making certain that there is no obstruction, and to assess breathing by listening to lung sounds, determining oxygen saturation and possibly obtaining further imaging such as a chest x-ray to determine if there are other reasons for labored breathing that can be fixed such as a pneumothorax. None of these assessments was made when Angel was exhibiting labored breathing at 9:45 PM, nor were they made at 2:35 AM when Angel was in distress and asking for help. Had these assessments been done, Angel could have been transported to the hospital where the source of his distress could have been determined.

If the assessment described above had been done, Angel could have received treatment for his pulmonary embolus. The standard of care for a patient with pulmonary embolus is to start anticoagulation medication such as heparin, which can be administered through subcutaneous injection, to give oxygen as needed, and support blood pressure with IV fluid. None of this was done at the time just prior to Angel's cardiac arrest, but had they been done it is more likely than not that he would have been able to be resuscitated and transported to the hospital where definitive treatment could have been performed, including heparin infusion, cardiovascular support and potential mechanical aspiration of the clot in his lungs. It is more likely than not that Angel would have survived had he been able to obtain appropriate medical treatment for his condition.

All of my opinions are made with a reasonable degree of medical certainty.

Dated: February 16, 2020



Evie Marcolini MD