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IN THE CORONERS COURT FOR NORTHERN IRELAND

IN THE MATTER OF

AN INQUEST INTO THE DEATH OF CARAGH WALSH

Before: Coroner Joseph McCrisken

Introduction

[1] Before I begin to deliver my findings with respect to the death of baby Cárágh Walsh I want to give appropriate thanks to all the legal teams involved in this inquest. I was represented by Coroners Counsel Mr Chambers and Ms Gallagher. My solicitor was Ms Lloyd Stevens. Mr Ronan Lavery QC and Mr Richard Smyth appeared for Christopher O'Neill, Mr Bready appeared for Ms Walsh and Mr McGarvey appeared for the Belfast Health and Social Care Trust. This has been a sensitive and distressing inquest as it involves the death of a very young child. The medical and pathological evidence is complex. I have been greatly assisted in my task by the manner in which all counsel approached this inquest.

[2] Whatever findings I deliver here today, the events of 5 February 2014 have irrevocably changed the lives of the Walsh and O'Neill families. A tiny baby closed her eyes forever and that tragedy shall weigh heavily on both Mr O'Neill and Ms Walsh for the rest of their lives. Neither will fully recover from Cárágh's death. When I decided to hold an inquest into Cárágh's death I thought that the criminal trial of Christopher O'Neill, had not provided sufficient answers to the family or the public. I said that both grieving families were entitled to have an answer to the most human of questions: "what happened to my loved one?". I said that I intended to try and provide answers by way of an inquest. I hope these findings provide at least some of those answers.

Relevant law

[3] Rule 15 of the Coroners (Practice and Procedure) Rules (Northern Ireland) 1963 governs the matters to which inquests shall be directed. This rule provides that:

> *"The proceedings and evidence of an inquest shall be directed solely to ascertaining the following matters, namely:*
> *(a) Who the deceased was;*
> *(b) How, when and where the deceased came by his death;*
> *(c) … The particulars for the time being required by the Births and Deaths Registration (Northern Ireland) Order 1976 to be registered concerning the death."*

[4] Rule 16 goes on to provide that:

> *"Neither the Coroner nor the jury shall express any opinion on questions of civil or criminal liability …"*

[5] In this particular inquest there is no difficulty in determining who the deceased was; when and where she came by her death or in recording the particulars required by the 1976 Order.

[6] The substantial issue to be considered by the inquest relates to "how" baby Cárágh came by her death.

[7] In accordance with the law an inquest cannot attribute blame or express any opinion on civil or criminal liability. An inquest in Northern Ireland cannot return a finding of unlawful killing. An inquest is a fact-finding inquiry and not a method of apportioning guilt. This inquest is not a re-trial of Mr O'Neill.

[8] In relation to the standard of proof in an inquest, any fact has to be proved to the civil standard, that is, the balance of probabilities.

Background.

[9] Cárágh Walsh was born on 29 October 2013 to Christopher O'Neill and Tammie Louise Walsh. I was told that it was a difficult birth but that baby Cárágh did well following the birth. She was bottle fed by both her mother and father and spent time with other family members. In December 2013 Cárágh was taken to hospital suffering from breathing issues. This was diagnosed as bronchiolitis, a lower respiratory tract infection, and Cárágh was given nasal suction and discharged. I was told that this condition cleared up within a few weeks and did not trouble Cárágh again. Ms Walsh described how, on occasion, Cárágh would squeal without any apparent cause and how

on other occasions she would hold her breath. Cárágh was taken to the GP on 31 January 2014 because she seemed to be unwell and had a painful cry. The GP prescribed paracetamol for pain relief.

[10] On the morning of 5 February 2014, Cárágh woke as normal and was fed as normal. She seemed to be her normal self. Ms Walsh was collected by her father and went to arrange her housing benefit in Lisburn. This left Cárágh in the sole care of her father. He told the jury at his trial that Cárágh was asleep in her bouncer while he was watching a DVD. He said that she woke up crying. He described a painful cry. He lifted her and rocked her gently in his arms. At some point during this he said he noticed that Cárágh was having difficulty breathing. He gave police a detailed account of how he shook Cárágh in an attempt to rouse her. He described the force used as a 5 on a scale of 1-10. At trial, he was less sure about what had happened and indicated that the answers he gave to the police might not have been accurate because he felt obliged and pressured into giving the police an account.

[11] After shaking Cárágh, Mr O'Neill then said that he attempted to force a bottle into her mouth but her mouth was closed. He then telephoned for an ambulance using the 999 call system. At inquest I was able to listen to this 999 telephone call. During the call Cárágh can be heard to make noises in the background while Mr O'Neill was describing how her breathing was becoming more difficult.

[12] Northern Ireland Ambulance Service records indicate that at 12.18pm on 5 February 2014 an emergency call was made in respect of a three month old baby girl called Cárágh Walsh. The caller was her father, Christopher O'Neill, then aged 23 years old. He said he was alone with the child in their home at Glasvey Park and she had breathing difficulties. The operator kept Christopher O'Neill on the line until Mr Sands, a Rapid Response Vehicle paramedic, arrived.

[13] When Mr Sands arrived he came into the flat and described Cárágh as having a *"porcelain doll"* look, meaning that she was showing no signs of life and was not breathing. Mr Sands commenced resuscitation which continued until an ambulance arrived a short time later. An ambulance paramedic, Mr Heaney, told the inquest that when he arrived Cárágh was breathing but only at a rate of approximately 4-5 breaths per minute. A normal respiratory rate for a child would be in the region of 20-30 breaths per minute. Cárágh was taken to the ambulance, resuscitation continued, and she was conveyed to the Emergency Department of the Royal Victoria Hospital (RVH) for Sick Children. Christopher O'Neill travelled with Cárágh in the ambulance during which time he told Mr Heaney that he shook his daughter. Mr Heaney did not think there was anything untoward about this at the time.

[14] Cárágh arrived at the RVH at 12.41 pm. At the hospital Dr. Maney, Consultant Paediatrician, said Cárágh had no pulse and was breathing very poorly. Dr Maney told

the inquest that Cárágh had suffered a cardio respiratory arrest. At inquest she explained that a child would have a respiratory arrest before a cardiac arrest. During that time Cárágh would have been starved of oxygen and blood. A team of doctors continued with resuscitation and various medical steps were taken to restore Cárágh's breathing and her circulation. An intraosseous needle was inserted into her left tibia and some bone marrow was aspirated but another intraosseous needle had to be placed in Cárágh's right tibia as the first needle could not be used to give medicine and fluids. At 12.43 pm, two minutes after arriving at the hospital, a pulse was returned and Cárágh started breathing properly again. She was then moved to the Paediatric Intensive Care Unit (PICU).

[15] Christopher O'Neill (along with other family members) was spoken to by medical staff and he admitted to staff that he had shaken his daughter, but said that this was an attempt to revive her as he thought she was unconscious. Two doctors gave the inquest demonstrations of what they recalled Mr O'Neill describing as the mechanism of shaking.

[16] A Computed Tomography (CT) scan was taken at 13.38. The radiologist reported that Cárágh had suffered at least one bleed on her brain and was suffering from a severe traumatic brain injury. The radiologist reported his findings verbally to Dr Maney. In turn she spoke to Mr O'Neill and Ms Walsh and relayed the findings. Mr O'Neill was reported as saying "that's because I shook her". I pause here to note the candid and open manner in which the medics provided information to both parents even though they clearly had suspicions regarding the behavior of Mr O'Neill.

[17] Dr Maney reported to police that Cárágh had: "*suffered severe head trauma, resulting in severe brain injury*". There were more medical examinations conducted including an examination of Cárágh's eyes. Retinal bleeding was noted in both eyes. Despite intensive treatment Cárágh Walsh died on 7 February 2014.

[18] Christopher O'Neill was charged with murder and a trial on Indictment took place at Craigavon Crown Court sitting in Armagh before McBride J between 17 January 2017 and 10 February 2017. He was found not guilty by a jury. I have considered a transcript of the entirety of the criminal proceedings and I admitted it into evidence at the inquest under Rule 17.

Evidence at inquest

[19] At trial six medical experts gave evidence in relation to their findings when they examined Cárágh's body or tissues. They expressed their expert opinion as to the reason or the cause of those findings and were questioned in respect of their evidence by Senior Counsel for Christopher O'Neill. The defence called Dr David Ayoub, a General Radiologist based in Illinois, United States of America.

[20] At inquest I heard from Dr James Lyness, State Pathologist for Northern Ireland, Dr Daniel Du Plessis, Consultant Neuropathologist, Professor Freemont, Professor of Osteoarticular Pathology and Dr David Ayoub, Radiologist. A report from Dr McCarthy, Consultant Ophthalmic Pathologist was admitted under Rule 17 of the Coroners Rules.

[21] Dr Du Plessis was asked to provide his opinion on his neuropathology findings. He told the inquest that Cárágh had suffered severe brain damage known as hypoxic-ischemic injury and severe brain swelling, bilateral subdural bleeding over the brain and having regard to Dr McCarthy's report, severe retinal bleeding in both eyes. He said that those three findings constituted what is known in the terminology used in cases involving shaken babies as *"the triad"*. Dr Du Plessis said that Cárágh's death was a *"full blown"* triad or a classic triad case and that since the brain swelling was not present on the initial CT scan taken at the hospital just over an hour after the emergency call it could not therefore have caused the original collapse.

[22] Dr Du Plessis was sure that the cardio respiratory arrest suffered by Cárágh was caused by shaking. Specifically, Dr Du Plessis said that Cárágh's head must have gone through at least one forceful cycle of acceleration/deceleration to have caused the injuries which constitute the triad. He said that substantial force must have been exerted to have caused the injuries suffered by Cárágh. Dr Du Plessis also described other injuries to Cárágh including spinal bleeding. Dr Du Plessis explained that a respiratory arrest would have been triggered by spinal damage due to shaking.

[23] In relation to the triad of injuries Dr Du Plessis accepted that there had been a meeting of pathologists in 2009 that had highlighted a disagreement about how a finding of triad could be interpreted and although it was his view that there was strong evidence of there being a non-accidental injury he agreed that that should not alone be regarded as conclusive proof of traumatic head injury. Other corroborative evidence was required. In this case, he said that the fractures to Cárágh's legs and the bruising were corroborative evidence of a non-accidental mode of injury.

[24] Dr Du Plessis was questioned about the first CT scan taken when Cárágh was in hospital which showed subdural bleeding on the right side of her brain only. He was asked whether he accepted that the bilateral bleeding found at autopsy could have come through *post-mortem* settlement. Dr Du Plessis explained that although the radiologist had observed a subdural bleed on only the right side of Cárágh's brain, he had also observed a bilateral subarachnoid bleed. However, when the autopsy was conducted the subarachnoid bleed was found to be on the right side only. Dr Du Plessis said that if there had, in fact, been subarachnoid blood present during the first CT scan he would have found it at post-mortem, this would not have disappeared. This led Dr Du Plessis to conclude that what had appeared on the CT scan to be subarachnoid

blood on the left hand side was, in fact, subdural blood. He stated that this type of error is very common and occurs because of the resolution of the CT scanner, the close proximity of the two areas (subdural and subarachnoid) and the very small amounts of blood involved.

[25] I found Dr Du Plessis to be a very impressive witness and I accept his evidence in its entirety.

[26] I also heard evidence from Dr Lyness, Consultant Forensic Pathologist and State Pathologist for Northern Ireland. He reported inter alia on the bruises found on Cárágh. He found that there were a large number of bruises or suspected bruises on Cárágh's body after both external and internal examination. Between 18 and 25 areas of bruising or suspected bruising were identified. Dr Lyness found two bruises to the undersurface of Cárágh's scalp and bruises on her chest. Although Dr Lyness initially linked the scalp bruises to Cárágh's head injury he was less certain of this link when he gave evidence at inquest. He said that mild or moderate force would have been required to have caused the bruises.

[27] Dr Lyness explained that the bruises to Cárágh's chest were symmetrical and in keeping with thumb marks which could have been caused if Cárágh had been picked up and held by an adult. Dr Lyness considered that mild to moderate force would have been required to cause these bruises to the chest area.

[28] Dr Lyness was asked to comment on a rib fracture that Cárágh had sustained. He opined that it was consistent with the type of injury he sees on a regular basis in adults and children who have had CPR performed on them prior to their death.

[29] Dr Lyness highlighted the fact that at the time of her death, Cárágh was suffering from a displaced fracture of her right elbow. An injury which, in Dr Lyness's opinion would have required significant force to cause. He also highlighted that Cárágh had a number of fractures on the metaphyseal areas of her legs though these were reported to him by specialists who had considered the X-rays and the bones themselves and were not observable by the naked eye.

[30] I also found Dr Lyness to be an impressive witness. He had clearly been through a robust cross-examination during the criminal trial and as a result was prepared to re-consider some of his conclusions, particularly in relation to the scalp bruises, during his evidence at inquest. He was also realistic about his ability, or the ability of any other person, to accurately and forensically time bruises.

[31] During the criminal trial, the Defence put forward a possible explanation that Cárágh had suffered from rickets. They called Dr David Ayoub, a radiologist with a special interest in metabolic bone disease, who practises in the United States of

America. I called him to give evidence at the inquest because he had given evidence at the trial and I felt that this issue of possible rickets needed to be addressed properly.

[32] Dr Ayoub explained that he was a general radiologist but that he had developed an interest in the study of metabolic bone disease. He indicated that he formerly had an interest in the potential for vaccines to cause autism but that he no longer involved himself in that issue. He indicated that in his ordinary practice he did not normally treat children other than for relatively minor illnesses. He stated that he had only once come across a case of rickets in his clinical practice.

[33] Dr Ayoub claimed that his knowledge of metabolic bone disease had come from his own private study. He said, in terms, that the medical profession no longer taught the disease of rickets properly and that there were only a handful of individuals, other than himself, with adequate knowledge to speak authoritatively on the subject. He gave evidence that Cárágh had, unquestionably, been suffering from healing rickets at the time of her death. Dr Ayoub challenged the conclusion that the fractures on Cárágh's legs were fractures at all. He said that their radiological appearance was that of a metaphysis (the growth plate at the end of the bone) which is recovering from the disease of rickets.

[34] He went further and claimed that healing rickets can cause a child to suffer from a condition known as tetany. Tetany, he claimed, was well known to cause laryngeal spasms which, in turn, could cause a respiratory arrest. A respiratory arrest could then cause a hypoxic brain injury similar to the one suffered by Cárágh. He stated that such a scenario could also have involved Cárágh suffering from a fit which could, in turn, have caused some subdural bleeding. He considered that this scenario could also lead to bleeding in the eyes.

[35] Dr Ayoub was quite properly subjected to intense questioning by Mr Chambers on the nature of his supposed expertise and the basis for his opinions. During this questioning a number of very troubling issues emerged.

[36] Dr Ayoub told the inquest that he had been involved in approximately 500 cases where a child had suffered bone injuries and where those injuries were said to have been fractures caused non-accidentally. On every occasion he was instructed on behalf of the person alleged to have caused the injuries. He stated that in all but about 5 of these cases, he had concluded that the injuries were as a result of metabolic bone disease as opposed to fracture. I consider this statistic to be both astonishing and, frankly, unbelievable. In my opinion the assertion of this statistic clearly marks Dr Ayoub out as an individual who is willing to claim that rickets is the cause of just about any fracture in a child. In some circles he would be described as a denialist.

[37] Dr Ayoub claimed in his report that rickets is present in the majority of children who die from SIDS (Sudden Infant death Syndrome). When questioned about this claim Dr Ayoub said that he had based it on a number of medical studies. However, when Mr Chambers took Dr Ayoub to the abstract of the studies, it became clear that this conclusion had not, in fact, been mentioned by the authors of the studies. Dr Ayoub then claimed that he had written to the authors telling them of his own finding from having looked at their research. Even if Dr Ayoub is correct, and the authors of these studies have somehow missed this enormously significant finding, it is self-evident that a handful of studies involving a small number of children, would not entitle Dr Ayoub to make such a far-reaching claim. I consider that Dr Ayoub inserted this misleading claim in his report in an effort to bolster his assertion that Cárágh was suffering from healing rickets at the time of her death and that her death could have been linked to SIDS.

[38] Dr Ayoub claimed, in his report, that bleeding in the eyes is not a sign of trauma. This claim is completely out of step with the general medical consensus. It is a well-recognised sign of significant trauma. This matter is also clearly outside Dr Ayoub's area of expertise.

[39] Dr Ayoub claimed that the rib fracture suffered by Cárágh was not in a place which was consistent with it having been fractured during CPR. This claim was flatly rejected by Dr Lyness, who regularly examines children and adults who have died after CPR. The rib fracture was towards the front, precisely the location where one would expect to find such a fracture. As Coroner, I read post mortem reports on a daily basis. From my own knowledge, rib fractures are a very common occurrence in cases where CPR has been *attempted.*

[40] Dr Ayoub was referred by Mr Chambers to a recent decision of Lord Justice Peter Jackson in *St Helens Council v M and F (Baby with Multiple fractures- Rehearing) [2018] EWFC 1*. Dr Ayoub claimed that he had never seen this judgment. He also claimed that while the case "rang a bell" he didn't remember the case with any precision. Mr Chambers firstly put paragraph 35 of the judgment to Dr Ayoub;

> *"Dr Ayoub stated that he is sent 3-5 legal cases every week to consider, has been consulted in about 500 cases, has written approximately 200 court reports and has appeared approximately 80 times as a witness in proceedings in the United States. He has been engaged in two other cases in this country and one in Sweden. In every case in which he has written a report, he has expressed the opinion that the child in question suffered from a metabolic bone disorder. In a television interview given in about 2010, he said this: "I've not seen any high-risk family. I don't believe any case of fractures I've seen has been as a result of real physical child abuse, that it's metabolic."*

[41] Dr Ayoub maintained that he had not concluded that metabolic bone disease was present in every case and that there had been 4 or 5 cases where he had not stated this. He did agree that this amounted to an incidence rate of 99%. He agreed that he probably had said the quote attributed to him in 2010 but that it would have been accurate at that time as in 2010 he had only been working in this field for 2 years and had yet to come across any case of physical child abuse.

[42] Dr Ayoub's attention was then drawn to paragraphs 42-44 of the *St Helen's* judgment where Jackson LJ said;

> *"42. It is not seriously disputed between the parties that if the Family Court had been asked to approve the prior instruction of Dr Ayoub as an expert witness, it would have been unable to do so. There are two fundamental reasons. Firstly, he does not have the necessary expertise to offer an opinion to a court on the origin of radiological appearances in infants, particularly pre-term infants, as they are a patient cohort of which he has no clinical experience. Secondly, his approach is shot through with the dogma that child abuse is over-diagnosed. It does not matter for this purpose whether he is right or wrong. The expert with a scientific prejudice may perform a service to science by asking questions that challenge orthodoxy, but be unsuited to be an expert witness, a role that requires objectivity when giving answers.*
>
> *43. Nothing in Dr Ayoub's evidence in the present case led me to a different view. He made himself available at an early hour at personal inconvenience and gave his evidence in a serious manner. However, his evidence was characteristic of his general approach. Having taken up a position, he advanced it with the tenacity of an advocate and was dismissive of alternative possibilities. He entertained no doubts about the correctness of his opinion, a dangerous mind set for any expert witness.*
>
> *44. I therefore conclude that the family or criminal courts in England and Wales are unlikely to find that Dr Ayoub meets the requirement that an expert witness must be objective and unbiased. At all events, if it is proposed that he should give evidence in any future case concerning fractures in infants or young children in this jurisdiction, the relevant court should be made aware of the matters contained in this judgment."*

This judgment was delivered, of course, after the trial of Mr O'Neill.

[43] I echo the admonition of Jackson LJ. At the conclusion of this inquest I intend to supply a copy of my findings and the decision of Jackson LJ to all judiciary in Northern Ireland to warn them of the potential dangers of allowing Dr Ayoub to give evidence before a jury or in any other case. I will also supply a copy of my findings and the St Helens judgment to the managers of the Southern Illinois University School of Medicine so that they might consider his suitability to teach medical students.

[44] Having listened to Dr Ayoub's evidence I was, and remain, entirely unconvinced that Cárágh suffered from rickets at any time in her short life. Dr Ayoub appeared to me to be entirely preoccupied with coming up with a theory, any theory, by which he could seek to explain that Cárágh's death was not as a result of a traumatic injury. Dr Ayoub's evidence was not of any assistance to me in determining how Cárágh came by her death.

[45] Finally, the inquest heard from Professor Anthony Freemont. Professor Freemont has been a medical doctor for over 40 years. He is a highly specialised, oesteoarticular pathologist. In his clinical practice, from which he retired last month, he was one of a handful of doctors in the world who specialised in the diagnosis of metabolic bone diseases in children. I specifically instructed Prof Freemont to report in relation to Cárágh's bones. Firstly, he said that he had examined sections of Cárágh's bones under a microscope and there was no evidence of metabolic bone disease including active or healing rickets. Professor Freemont was absolutely certain of this.

[46] Professor Freemont explained that he has seen many cases of rickets in his clinical practice. He has been involved with the treatment team of children who have been diagnosed with rickets. He has observed the healing process and has observed the presentation of healing rickets in X rays. He rejected the assertion, effectively made by Dr Ayoub, that he would not have the requisite level of knowledge or expertise to diagnose rickets.

[47] Professor Freemont reported on the fractures found at post mortem. The relevant fractures or areas of damage which he found were;

a. Two fractures to the right proximal tibia, one was closer to the knee and one was further towards the ankle,
b. A fracture to the left proximal tibia as well as an area of new bone growth suggestive of previous injury lower down the leg on this side,
c. A fracture to the left distal femur, and,
d. A fracture to the right distal humerus.
e. An area of damage to the 3rd rib and a fracture to the 6th rib.

[48] Professor Freemont firmly rejected Dr Ayoub's contention that the injuries to Cárágh's legs were not fractures but were instead the presentation of healing rickets. Professor Freemont explained that when a child suffers from rickets, it affects all the growth plates in all the bones in the body and the changes to the growth plates are observed right across the entire face of each growth plate. He explained that this was one of a number of reasons why he could state with certainty that Cárágh did not have rickets since the changes were only present on a few growth plates and they only affected a part of each growth plate.

[49] Professor Freemont indicated that the metaphyseal fractures to Cárágh's legs were consistent with her leg having been pulled or twisted or, alternatively, were consistent with her body having been shaken forcefully thereby causing her legs to flail.

[50] There was one fracture about which there was no controversy in terms of timing or cause. This was a fracture below the right knee that was caused by the insertion of an intraosseous needle during medical treatment. Professor Freemont told the inquest that using conventional techniques to age the bone at this location had resulted in a potential finding of an age of between 24-36 hours. Professor Freemont said that this clearly did not make sense because he knew for certain that the needle had been placed 48 hours before death. Professor Freemont said that in Cárágh's case her severe ill health had slowed down the healing process of her bones meaning that he had to re-interpret his findings. When Professor Freemont applied this new interpretation based upon a known (and timed) fracture he was able to conclude the following in terms of timing;

(a) The left rib fracture had occurred during a time frame when Cárágh was receiving CPR.
(b) The right and left below knee fractures had occurred shortly before Cárágh suffered a cardiac arrest (i.e on 5 February) or between 1 and 12 hours prior to cardiac arrest. Professor Freemont said these fractures could have been caused during shaking if Cárágh's legs 'flailed about'. He could not say how many shakes would have been required but he did say that "a lot of force" and "extreme" force would have been required.
(c) The next fracture was to the left femur and this fracture occurred between 4 and 7 days before death.
(d) There was an elbow dislocation injury caused 6-10 days before death. Professor Freemont said that this injury occurred at the same time as an injury to Cárágh's 3rd rib and left leg.

[51] Dr McCarthy found extensive and confluent retinal haemorrhage affecting the entire retina of each eye. There was also extensive haemorrhage around and within both optic nerves and in the connective tissue at the back of the globe. He said that these features indicated significant traumatic haemorrhagic damage to the eyes. His opinion was that the injuries were caused by severe movement head injury and could have been caused by shaking. Dr McCarthy stressed that the injuries were at the most widespread end of the spectrum and extremely severe. Cárágh did not have any natural disease which would have predisposed her to suffer retinal bleeds.

Findings

[52] Having considered all of the evidence I am able to arrive at the following conclusions,

[53] Cárágh Walsh did not have rickets and never suffered from rickets. I reject the evidence of Dr Ayoub in its entirety as it relates to rickets. I prefer the evidence of Professor Freemont that Cárágh's bones were healthy and showed no evidence of any disease. I reject the suggestion that, because of an eating disorder, Ms Walsh failed to provide sufficient nutrients to Cárágh during the pregnancy.

[54] I am satisfied that Cárágh suffered injuries to her rib, leg and elbow approximately 7-10 days before her death. The injury to her elbow was extremely severe and must have required an exceptional degree of force. I accept the evidence of Prof Freement that this injury would have been immediately painful but then would have settled leaving Cárágh perhaps "grumpy" and out of sorts. This injury may not have been immediately apparent upon inspection even by a medical practitioner.

[55] When Cárágh was taken to the GP on 31 January 2014 she was, in all likelihood, suffering from the effects of a dislocated fracture of her elbow, a rib injury and leg injury. Importantly, no issues were reported with her breathing in the days before her collapse on 5 February.

[56] I am satisfied that Cárágh was not suffering from a lower respiratory tract infection (bronchiolitis) on 5 February neither was she suffering from any other health issues that would have caused her to collapse or become acutely unwell.

[57] I am satisfied, based upon the evidence of Dr Du Plessis, that Cárágh suffered a cardio respiratory arrest on 5 February some time before 12.18pm. This cardio respiratory arrest was due to being shaken violently and with extreme force. There was no other reason for the cardio respiratory arrest. I am satisfied that Cárágh was shaken at least once but more probably on more than one occasion. The injuries to Cárágh's brain and eyes required a rapid and substantial acceleration and deceleration of her head and neck. I am also satisfied that Cárágh sustained fractures of both her legs below the knee during this episode of shaking. These fractures could have been caused by one episode of shaking but more probably were caused by more than one episode of violent shaking when Cárágh's legs would have flailed about with sufficient force to fracture her leg bones.

[58] I agree with Dr Du Plessis that, based upon all of the medical, radiological and pathological evidence, the injuries to Cárágh constituted what is known as a full "triad". I find that bilateral bleeds were present during the first CT scan but were missed by the radiologist.

[59] I am satisfied that violent shaking caused bilateral bleeds to Cárágh's brain as well as severe retinal bleeding and bleeding around the optic nerve. The subsequent lack of oxygen and blood flow caused cerebral oedema and irreversible brain damage.

[60] Only minor injuries were caused by the application of medical equipment and during resuscitation by medics.

[61] The cause of Cárágh's death was;

1a) Hypoxic Ischaemic Brain and Spinal Cord Injury

due to

b) Cardio-Respiratory Arrest; Bi-lateral Subdural Haemorrhages; Spinal Haemorrhage

due to

c)Violent Shaking

2) Fracture Right Humerus; Fractures to Right and Left Tibias; Bi-lateral Retinal Haemorrhages

Medical Care

[62] The medical care given to Cárágh was exemplary. The medical staff who resuscitated Cárágh on 5 February and cared for her during her time in hospital should feel proud of the care that they provided to a desperately ill baby. Over the past four years they have been questioned about their actions and behaviour, subjected to cross examination about their observations and treatment and criticised about their motivation. In my opinion, no criticism of the medical team in the RVH or those paramedics who treated Cárágh is justified. The medical staff in the RVH caused no injury to Cárágh Walsh, of that I am absolutely certain. It must have been heart-breaking for them to watch a tiny baby die in the way that Cárágh did. I commend them for their professionalism, sensitivity and expertise. I will be relaying these comments to the Chief Medical Officer later this month and to the Medical Director of the RVH immediately following this inquest.

Finally I want to convey my condolences to the Walsh and O'Neill families on the loss of Cárágh.