No. 94-67V

FILED: October 15, 1998

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JOHN HOAG and PATRICIA HOAG

as Legal Representatives

of their daughter Cassandra Hoag,

Petitioners,

v.

SECRETARY OF HEALTH

AND HUMAN SERVICES,

Respondent.

National Vaccine Injury Compensation Act, 42 U.S.C. §§ 300aa-1 to 300aa-34; Vaccine Table Injury, 42 U.S.C. §300aa-14; Significant Aggravation of an Injury.

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JOHN K. MCPHERSON, Gainesville, Florida, attorney of record for petitioner.

ELIZABETH F. KROOP, Torts Branch, Civil Division, United States Department of Justice, Washington, D.C., with whom were **GERARD W. FISHER**, Assistant Director, **JOHN LODGE EULER**, Deputy Director, **HELENE M. GOLDBERG**, Director, and **FRANK W. HUNGER**, Assistant Attorney General, attorneys of record for the defendant.

O R D E R

HORN, J.

The petitioners John Hoag and Patricia Hoag, acting on behalf of their daughter Cassandra Hoag, filed a petition under the National Vaccine Injury Compensation Act, 42 U.S.C. §§ 300aa-1 to 300aa-34 (1994) (Vaccine Act),[(1)] seeking on-table[(2)] compensation for injuries allegedly sustained by Cassandra Hoag. Petitioners allege alternatively that Cassandra suffered an encephalopathy[(3)] after her diphtheria-

pertussis-tetanus (DPT) vaccination on February 7, 1991, or after her diphtheria-tetanus (DT) vaccination on March 20, 1991. Petitioners also allege alternatively that the February 7 and March 20 vaccinations in combination in fact caused Cassandra's injuries. Furthermore, in the alternative petitioners allege that the March 20, 1991, DT vaccination significantly aggravated Cassandra's encephalopathy which manifested after the earlier DPT vaccination. The Chief Special Master for the United States Court of Federal Claims denied each of the claims. Hoag v. Sec'y DHHS, No. 94-67V, slip op. at 6, 20 (Fed. Cl. April 22, 1998). The Chief Special Master's decision was first issued as an unpublished opinion, but it was reissued for publication and can be found at Hoag v. Sec'y DHHS, No. 94-67V, 1998 WL 408783 (Fed. Cl. April 22, 1998).

Petitioners then filed a motion for review with this court pursuant to Appendix J, paragraph 26 of the Rules of the United States Court of Federal Claims (RCFC) limited solely to one issue concerning the significant aggravation allegation. Specifically, petitioners allege that the Chief Special Master failed to act in accordance with the law on significant aggravation as set forth in the Vaccine Act and enunciated in Whitecotton v. Sec'y DHHS, 81 F.3d 1099 (Fed. Cir. 1996). The parties both agree that the Chief Special Master adopted the applicable four-part test in Whitecotton, but petitioners allege that the Chief Special Master improperly applied step four of that test (determining whether the first symptom or manifestation of the significant aggravation occurred within the three-day time period prescribed in the Vaccine Table). Petitioners allege that the Chief Special Master improperly framed the petitioners' burden as "[t]he dispute thus settles on the question of when the diagnosis of the infantile spasm syndrome can be made." Hoag v. Sec'y DHHS, No. 94-67V, slip op. at 15.

Petitioners seek review of their allegation that the March 7, 1991, DT vaccination significantly aggravated Cassandra's preexisting encephalopathy. The petitioners allege that the Chief Special Master incorrectly applied the law regarding the burden placed on them by the Vaccine Act and required them "to show that what happened within three days of the March 20 DT was diagnostic of infantile spasms." The petitioners state that:

The burden placed on the petitioners by the Special Master, i.e. to show "when the diagnosis of the infantile spasms can be made," is unfair, unreasonable and unlawful. For a disease such as infantile spasms, the point at which the disease is diagnosed and treatments begun will vary depending on the judgment of the treating physician. Respondent's expert, Dr. John MacDonald, agreed that after the March 22 spasms and the March 25 EEG there could have been a "heated debate" among qualified physicians as to whether treatment of Cassandra for infantile spasms should commence.

The petitioners argue that the standard set out in the Vaccine Injury Table, 42 U.S.C. § 300aa-14(a), states that "the first symptom or manifestation of a significant aggravation" of an encephalopathy must occur within three days, yet the Chief Special Master predicated his decision to dismiss the case on the theory that Cassandra could not be diagnosed with such injuries within three days. The petitioners argue that "[n]owhere is there any suggestion that showing the first symptom or manifestation of a significant aggravation means showing that point in time when the significant aggravation 'can be diagnosed.'" Rather, petitioners suggest that they were required to show that the first symptoms of significant aggravation were present within the time period mandated by the statute regardless of whether the symptoms could be diagnosed.

After careful consideration of the record, the filings submitted by both parties, and the relevant law, the court finds that the Chief Special Master acted in accordance with the law. Thus, the court upholds the judgment of the Chief Special Master denying compensation under the Vaccine Act for the petitioners.

FACTS

Cassandra Hoag was born on November 2, 1990 and progressed normally for the first two months. On February 7, 1991, Cassandra received her first DPT vaccination. On February 17, 1991, John and Patricia Hoag, Cassandra's parents, brought Cassandra to the University of Florida's Shands Hospital where Cassandra was diagnosed with "[a]pnea, most likely due to seizure activity." Although an electroencephalogram (EEG) indicated that Cassandra had normal brain activity, the treating physicians administered an anti-seizure medication, phenobarbital, because they suspected seizure activity. These seizures continued over the next month and were characterized by apnea,[(4)] cyanosis,[(5)] arching of the back, stiffness, and jerking.

On March 20, 1991, Cassandra received her DT vaccination. Thereafter, on March 22, 1991, Cassandra had three seizures characterized by "very shallow breathing, staring, stiffening and arching of her trunk and flexion of one or both arms." A subsequent EEG performed on March 25, 1991, was "highly suggestive of the development of infantile spasms (West syndrome)." However, a further Video/EEG commencing on March 27, 1991, and ending on March 30, 1991, indicated that "[a]lthough the clinical history was consistent with infantile spasms, this continuous Video/EEG monitor demonstrates unequivocally that the infant's seizures are right temporal lobe in origin and clinically probably are complex partial in nature." Dr. Gilmore, one treating physician, saw Cassandra on March 25, 1991, and stated that the child was not encephalopathic. Based on the test results, the treating physicians diagnosed Cassandra as having partial complex seizure disorder, and placed her on Tegretol, an anti-seizure medicine for treatment of that disorder.

On April 14, 1991, Cassandra was reported as suffering from seizures characterized by "listless[ness], no smiling . . . . [F]lexion of arms [and] legs, flexion of head, churning [of] mouth . . . ." The government's expert, Dr. John MacDonald, testified that these symptoms were typical of partial complex seizures. However, on May 10, 1991, the treating physicians noted that "[t]he patient's character of seizures has changed recently. She is not only having an increased frequency of events but she is now having bilateral movement of both upper extremities and legs resembling jackknife spasms." At this point the doctors concluded that Cassandra suffered from infantile spasm syndrome.[(6)]

On January 12, 1995, the petitioners filed their petition with the United States Court of Federal Claims under the Vaccine Act seeking on-table compensation for injuries allegedly sustained by Cassandra Hoag after she received her DPT vaccination on February 7, 1991, and her DT vaccination on March 20, 1991. On April 22, 1998, the Chief Special Master denied the petitioners' claim on all counts because he ascertained that petitioners did not meet the statutory criteria for recovering an on-table injury pursuant to 42 U.S.C. § 300aa-14(a). The Chief Special Master ruled that, "petitioners have failed to prove by a preponderance of the evidence that the vaccines either presumptively or in fact caused or significantly aggravated a Table injury. Therefore, they are not entitled to an award under the Program. The petition is therefore dismissed."

The Chief Special Master denied the petitioners' allegation that Cassandra suffered an encephalopathy in temporal association with her February 7, 1991, immunization on the basis that petitioners' factual allegations contradicted the established medical record. Petitioners claimed that, although "Cassandra was a happy child with normal developmental progress," she "began crying inconsolably within one hour of receiving the DPT vaccine." Mrs. Hoag expanded on her description of Cassandra's condition in

a hearing on November 29, 1995. Mrs. Hoag stated that Cassandra did not sleep from the time of the DPT vaccination on February 7, 1991, until February 12, 1991. Mrs. Hoag said further that Cassandra remained unresponsive and pale for the next five days. The petitioners alleged that Cassandra "looked worse [on February 17], because she was more pale, and the color around her mouth turned to a blue-green, under her nose and around her mouth, and it was like a ring." Later that same day, Cassandra stopped breathing and was rushed to the hospital. The doctors there diagnosed her as having apnea seizures and they placed her on phenobarbital, an anti-seizure medication.

The Chief Special Master noted, however, that the "medical records tell a very different story" than the one recounted by the petitioners. He found that the medical records contained numerous references to Cassandra as being "well" during the time at issue after the February 7, 1991, DPT vaccination. He pointed to medical records indicating Cassandra was alert, playful, and cooing with normal neurology after the February 7, 1991, vaccination. Furthermore, the medical records stated that the February 17, 1991, seizure had an "abrupt onset, no precipitous episode." It was "illogical" and "unbelievable" that despite the numerous references to discussions with the family regarding Cassandra's apnea spells, there was no mention of the distressed condition that the petitioners described immediately following the DPT immunization. The Chief Special Master ruled further that the doctors who testified on behalf of the petitioners had "no factual foundation for their opinions" because the opinions were predicated solely upon the petitioners' affidavits and testimony, which the court found to be "unreliable and not credible."

The Chief Special Master also denied the petitioners' alternative allegation that the February 7, 1991, DPT vaccination in fact caused Cassandra's injuries. He stated that:

However, the experts' opinions on this issue, as limited as they were, fail for the same reason that the opinions on the Table case failed, that is the lack of a factual predicate. The experts relied upon the family's testimony, which the court rejected as unreliable. In addition, Dr. Sleasman testified that there is no direct causal link. Dr. Gilmore stated that the child was developmentally normal as of March 25, and Dr. Duchowney said there was no history of reaction. Lastly, Dr. Schulein testified that there was no encephalopathy following either the DPT or the DT. Clearly, petitioners failed to mount any persuasive case of causation in fact.

Hoag v. Sec'y DHHS, No. 94-67V, slip op. at 6 n.5 (citations omitted).

Finally, the Chief Special Master also denied Petitioners' claim that the March 20, 1991, DT vaccination significantly aggravated a preexisting encephalopathy because he found the petitioners failed to show that the significant aggravation occurred within the statutory time period.[(7)] The Chief Special Master stated that "the infantile spasms, and thus the first symptom or manifestation of the worsening of Cassandra's condition, could not be determined more probably than not until the occurrence of the classical infantile spasm seizure that occurred in May 1991."

Both parties introduced experts to testify specifically on the significant aggravation issue. The Chief Special Master determined that the petitioners' expert, Dr. Marcel Kinsbourne, premised his testimony on symptoms which "did not carry the medical significance Dr. Kinsbourne gave them" and although the individual symptoms were consistent with infantile spasms seizures or the syndrome, they "were not diagnostic." In contrast, the Chief Special Master found that the testimony of the respondent's expert, Dr. MacDonald, "was backed by his far more impressive clinical experience, medical literature, and the actual treatment of Cassandra." The Chief Special Master also noted that Dr. MacDonald persuasively demonstrated Dr. Kinsbourne's clinical evidence to be "insufficient or inconclusive to support the signaling, at that time, [of] the manifestation of infantile spasm seizures or the infantile spasms syndrome."

DISCUSSION

When deciding a motion to review a special master's decision, the judges of the United States Court of Federal Claims shall:

(A) uphold the findings of fact and conclusions of law of the special master and sustain the special master's decision,

(B) set aside any findings of fact or conclusions of law of the special master found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law and issue its own findings of fact and conclusions of law, or

(C) remand the petition to the special master for further action in accordance with the court's direction.

42 U.S.C. § 300aa-12(e)(2). The legislative history of the Vaccine Act states that "[t]he conferees have provided for a limited standard for appeal from the [special] master's decision and do not intend that this procedure be used frequently but rather in those cases in which a truly arbitrary decision has been made. H.R. Conf. Rep. No. 386, 101st Cong., 1st Sess. 512-13, 517, reprinted in 1989 U.S.C.C.A.N. 1906, 3115, 3120.

Although this court's review of decisions issued by a special master should be conducted within the bounds described above, 42 U.S.C. § 300aa-12(e)(2) dictates that the judges of this court should utilize differing and distinguishable standards of review, depending upon which aspect of the case is under scrutiny. As stated by the United States Court of Appeals for the Federal Circuit:

These standards vary in application as well as degree of deference. Each standard applies to a different aspect of the judgment. Fact findings are reviewed by us, as by the Claims Court judge, under the arbitrary and capricious standard; legal questions under the "not in accordance with law" standard; and discretionary rulings under the abuse of discretion standard.

Saunders v. Sec'y DHHS, 25 F.3d 1031, 1033 (Fed. Cir. 1994) (quoting Munn v. Sec'y DHHS, 970 F.2d 863, 870 n.10 (Fed. Cir. 1992)). See also Grice v. Sec'y DHHS, 36 Fed. Cl. 114, 117 (1996); Rooks v. Sec'y DHHS, 35 Fed. Cl. 1, 4 (1996); Cox v. Sec'y DHHS, 30 Fed. Cl. 136, 142 (1993); Perreira v. Sec'y DHHS, 27 Fed. Cl. 29, 32 (1992), aff'd, 33 F.3d 1375 (Fed. Cir. 1994). The abuse of discretion standard will rarely come into play except where the special master excludes evidence. Munn, 970 F.2d at 870 n.10.

The arbitrary and capricious standard of review is a narrow one. Carraggio v. Sec'y DHHS, 38 Fed. Cl. 211, 217 (1997); Johnston v. Sec'y DHHS, 22 Cl. Ct. 75, 76 (1990); see Cucuras v. Sec'y DHHS, 993 F.2d 1525, 1527 (Fed. Cir. 1993); Bradley v. Sec'y DHHS, 991 F.2d 1570, 1574 (Fed. Cir. 1993); Estate of Arrowood v. Sec'y DHHS, 28 Fed. Cl. 453, 457 (1993); Perreira v. Sec'y DHHS, 27 Fed. Cl. at 31-32; see also Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971). The United States Court of Appeals for the Federal Circuit has defined this as a "highly deferential" standard of review. Burns v. Sec'y DHHS, 3 F.3d 415, 416 (Fed. Cir. 1993) (citing Hines v. Sec'y DHHS, 940 F.2d 1518, 1528 (Fed. Cir. 1991)). When applying the arbitrary and capricious standard, a reviewing court is not empowered to substitute its own judgment for that of a previous trier of fact. Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. at 416. Instead, when determining whether a decision was arbitrary and capricious, a court "must consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." Id.; see Hines v. Sec'y DHHS,

940 F.2d at 1527.

Furthermore, "[i]f the special master has considered the relevant evidence in the record, drawn plausible inferences and articulated a rational basis for the decision, reversible error will be extremely difficult to demonstrate." Burns v. Sec'y DHHS, 3 F.3d at 416; Hines v. Sec'y DHHS, 940 F.2d at 1528; see Lewis v. Sec'y DHHS, 26 Cl. Ct. 233, 236 (1992); Murphy v. Sec'y DHHS, 23 Cl. Ct. 726, 729-30 (1991), aff'd, 968 F.2d 1226 (Fed. Cir. 1992), cert. denied, 506 U.S. 974 (1992). Thus, the decision of a special master may be found to be arbitrary and capricious only if the special master:

relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence . . . or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Hines v. Sec'y DHHS, 940 F.2d at 1527 (quoting Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29 (1983)). This court should accord deference to a special master's decision and the reviewing court "may not substitute its own judgment for that of the special master if the special master has considered all relevant factors, and has made no clear error of judgment." Lonergan v. Sec'y DHHS, 27 Fed. Cl. 579, 580 (1993) (citing Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. at 416; Hyundai Elecs. Indus. Co. v. United States Int'l Trade Comm'n, 899 F.2d 1204, 1209 (Fed. Cir. 1990); Gamalski v. Sec'y DHHS, 21 Cl. Ct. 450, 451-52 (1990)).

The "'not in accordance with law' standard" which applies to legal questions warrants de novo review. Hossack v. Sec'y DHHS, 32 Fed. Cl. 769, 773 (1995) (citing Neher v. Sec'y DHHS, 984 F.2d 1195, 1198 (Fed. Cir. 1993)); see also Bradley v. Sec'y DHHS, 991 F.2d at 1574 n.3.

The Vaccine Act provides an alternative to the traditional tort system for individuals who have suffered vaccine-related injuries. Whitecotton v. Secretary of Health and Human Services, 81 F.3d 1099, 1102 (Fed. Cir. 1996). The Act permits recovery of compensation for vaccine-related injuries under two distinct legal theories: (1) actual causation and (2) presumed causation under the "Vaccine Injury Table" of 42 U.S.C. § 300aa-14(a). See id.

Under the first theory, a petitioner makes a prima facie case of entitlement to compensation upon a showing by a preponderance of the evidence that a vaccine was the cause of the injuries. See 42 U.S.C. §§ 300aa-13(a)(1)(A), 300aa-11(c)(1). For the second theory, Congress published the Vaccine Injury Table listing the various injuries associated with different vaccine types and providing associated time periods. Whitecotton v. Sec'y DHHS, 81 F.3d at 1102; 42 U.S.C. § 300aa-14. Under the second theory, a petitioner must show that the first "symptom or manifestation" of a table injury occurred within the table's delineated time period following the vaccination. Whitecotton v. Sec'y DHHS, 81 F.3d at 1102. Upon such a showing, causation is presumed and the petitioner is considered to have made out a prima facie case of entitlement to compensation. Id. Under both the first and second theories, the petitioner's establishment of a prima facie case means that the government must compensate unless it can show by a preponderance of the evidence that a "factor unrelated" to the vaccine was the actual cause of the petitioner's injuries. Id.; 42 U.S.C. § 300aa-13(a)(1)(B).

Under the second theory, the Vaccine Act also permits recovery if an individual suffers a significant aggravation of a pre-existing table injury. 42 U.S.C. §§ 300aa-11(c)(1)(C)(i), 300aa-14(a); Whitecotton v. Sec'y DHHS, 81 F.3d at 1102. Congress provided for such cases

in order not to exclude serious cases of illness because of possible minor events in the person's past medical history. This provision does not include compensation for conditions which might legitimately

be described as pre-existing (e.g., a child with monthly seizures who, after vaccination, has seizures every three and a half weeks), but is meant to encompass serious deterioration (e.g., a child with monthly seizures who, after vaccination, has seizures on a daily basis).

Id. (quoting H.R. Rep. No. 99-908, at 1, reprinted in 1986 U.S.C.C.A.N. 6287, 6356). A petitioner must show that the first symptom or manifestation of the significant aggravation of a table injury occurred within the table time period following the vaccination. 42 U.S.C. § 300aa-11(c)(1)(C)(i); Whitecotton v. Sec'y DHHS, 81 F.3d at 1103. The Vaccine Act states that "[t]he term 'significant aggravation' means any change for the worse in a preexisting condition which results in markedly greater disability, pain, or illness accompanied by substantial deterioration of health." 42 U.S.C. § 300aa-33(4). The government can rebut a prima facie case by using the "factor unrelated" test of 42 U.S.C. § 300aa-13(a)(1)(B).

In the above captioned case, the parties are in agreement that Cassandra Hoag presents as a patient suffering from an encephalopathy. Moreover, based on the petitioners' motion for review and the respondent's memorandum in response, the only issue which the court is asked to address is whether or not "the first symptom or manifestation . . . of the significant aggravation" was evident within 72 hours of the March 20, 1991, DT immunization. Petitioners' motion for review contends that the Chief Special Master failed to act in accordance with the law when he made his findings regarding the proof requirements for "significant aggravation" in the Vaccine Act. In particular, petitioners argue that the Chief Special Master improperly framed the burden of proof as requiring a showing within 72 hours of "when the diagnosis of the infantile spasms can be made," rather than "whether the first symptom or manifestation of the significant aggravation occurred within three days of the March 20 DT vaccination."

In Whitecotton v. Secretary of Health and Human Services, 81 F.3d at 1105, the United States Court of Appeals for the Federal Circuit acknowledged that "significant aggravation" is one of the most difficult concepts in the Vaccine Act. The court in Whitecotton noted that

the primary difficulty in adjudicating the significant aggravation claims of children with a pre-existing condition, is that it is very difficult to know at the age when a child is vaccinated what symptoms would have naturally manifested themselves as the child matured and what symptoms might have remained latent absent the vaccination.

Id. Attempting to address this problem, the court in Whitecotton provided a four-step framework for analyzing significant aggravation claims. See id. at 1107.[(8)] A special master or court must (1) assess the person's condition prior to administration of the vaccine, (2) assess the person's current condition, (3) determine if the person's current condition constitutes a significant aggravation of the prior condition within the meaning of the Vaccine Act, and (4) determine if the first symptom or manifestation of the significant aggravation occurred within the time period prescribed by the Vaccine Table. Id.

In the present case, the Chief Special Master properly utilized the Whitecotton framework to analyze the petitioners' claim. With an injury of the type at issue, namely an encephalopathy, the Vaccine Table requires petitioners to show, by a preponderance of the evidence, that the first symptom or manifestation of the significant aggravation occurred within 72 hours of the time of vaccine administration. See 42 U.S.C. § 300aa-14.

A petitioner can qualify for compensation by meeting the requirements of 42 U.S.C. 300aa-13, which reads in relevant part as follows:

§ 300aa-13. Determination of eligibility and compensation

(a) General rule

(1) Compensation shall be awarded under the Program to a petitioner if the special master or court finds on the record as a whole

(A) that the petitioner has demonstrated by a preponderance of the evidence the matters required in the petition by section 300aa-11(c)(1) of this title, and

(B) that there is not a preponderance of the evidence that the illness, disability, injury, condition, or death described in the petition is due to factors unrelated to the administration of the vaccine described in the petition.

The special master or court may not make such a finding based on the claims of a petitioner alone, unsubstantiated by medical records or by medical opinion.

* * *

(b) Matters to be considered

(1) In determining whether to award compensation to a petitioner under the Program, the special master or court shall consider, in addition to all other relevant medical and scientific evidence contained in the record

(A) any diagnosis, conclusion, medical judgment, or autopsy or coroner's report which is contained in the record regarding the nature, causation, and aggravation of the petitioner's illness, disability, injury, condition, or death, and

(B) the results of any diagnostic or evaluative test which are contained in the record and the summaries and conclusions.

Any such diagnosis, conclusion, judgment, test result, report, or summary shall not be binding on the special master or court. In evaluating the weight to be afforded to any such diagnosis, conclusion, judgment, test result, report, or summary, the special master or court shall consider the entire record and the course of the injury, disability, illness, or condition until the date of the judgment of the special master or court.

The scope of a special master's inquiry in applying the Whitecotton framework is "virtually unlimited." Whitecotton v. Sec'y DHHS, 81 F.3d at 1108. Congress intended for the special masters to have "very wide discretion with respect to the evidence they would consider and the weight to be assigned that evidence." Id. In the instant case, the Chief Special Master held two hearings to resolve the factual and medical infantile spasm syndrome issues presented. After listening to the testimony and gauging the credibility of the evidence presented at the first hearing, the Chief Special Master concluded that he "did not find the factual witnesses credible, but instead found the medical records to be complete and reliable." The Chief Special Master indicated in his opinion that he found petitioners' allegations incredulous, doubted the credibility of Ms. Hoag (the mother), and found that both Mr. Hoag (the father) and Jean Hoag (the grandmother) could not remember relevant facts. In addition, the Chief Special Master found that the testimony of the petitioners' experts, Drs. Legarda and Sleasman, was premised on the affidavits and testimony of the family. Therefore, since the Chief Special Master found the family-supplied information unreliable, he also found the expert opinions were without a factually reliable foundation.

The Chief Special Master, however, did not end his inquiry. As described in the opinion, "the court raised the possibility of whether Cassandra's seizure disorder, which manifested ten days following the DPT immunization, or on February 17, 1991, was significantly aggravated by the DT administered on March 20, 1991." Therefore, the parties submitted a second round of expert opinions and another evidentiary hearing was held. At the subsequent hearing, the Chief Special Master heard further, albeit conflicting, testimony from the parties' expert witnesses.

Based on the medical history, the records, the tests performed and the opinions offered by the experts, it is evident from the Chief Special Master's opinion that he concluded that the March 22 seizure was not a significant aggravation of a condition Cassandra suffered prior to the DT vaccination. Prior to the March 20, 1991, DT vaccination, Cassandra Hoag exhibited signs of a seizure disorder which could not be definitively characterized or diagnosed at that time. She was placed on medication. On March 22, 1991, two days after her DT vaccination, Cassandra had seizures. These were characterized by "arching, some breathing problems and a 'a little flexion.'" The treating doctors became suspicious of possible infantile spasm syndrome.

The Chief Special Master found the testimony of Dr. MacDonald particularly important when he noted that (1) the flexion movements, relied on by petitioners to show a change in seizure types, could be seen in several kinds of seizures, and (2) the hypsarrhythmic EEG pattern did not necessarily indicate infantile spasm syndrome. Additionally, the plaintiff's expert conceded on cross-examination that medical records described arching when Cassandra had seizures in February. The Chief Special Master noted in his decision that Dr. MacDonald, respondent's expert, had concluded that "the course of Cassandra's seizures fit[s] the typical evolutionary course of the infantile spasm syndrome." Thus, the record before the Chief Special Master and the court here does not support a finding that the March 22, 1991, seizure was the "first symptom or manifestation" of a significant aggravation of Cassandra's preexisting condition. Based on the record, and the credibility determinations of the Chief Special Master, the March 22, 1991, event appears to have been a seizure consistent with the ailment and seizures Cassandra had suffered prior to the DT vaccination, and which she continued to suffer.

The petitioners focus on the Chief Special Master's statement that "[t]he dispute thus settles on the question of when the diagnosis of the infantile spasm syndrome can be made." The petitioners interpreted this statement to suggest that the Chief Special Master was requiring them to prove a diagnosis of the more serious ailment within the 72 hour period in order to show significant aggravation. Cassandra was not diagnosed with infantile spasm syndrome until May of 1991 when she suffered the particular infantile spasm seizures which both petitioners' and respondent's experts agree are the hallmark of infantile spasm syndrome. The Chief Special Master, however, concluded that the overall course of Cassandra's seizures fit the typical evolutionary course of the later-diagnosed infantile spasm syndrome. The Chief Special Master relied heavily on Dr. MacDonald's testimony and included excerpts from that testimony in the decision. In response to a question of whether Cassandra's condition was aggravated at any time, Dr. MacDonald stated:

I think she has a syndrome that is defined by these seizure patterns and retardation that, looking at where she is now, and where she started, this is where I would expect she would be. I can't logically say she's worse in any meaningful sense of the word, and that's what you would have to tell these parents early on, that even if the seizures get better, she's going to probably be mentally retarded and very delayed.

That's in the cards. That's part of the syndrome that's set. You're not going to change that. So, I think, she's not worse; she's developing the pattern that would develop.

In his decision, the Chief Special Master also cited Dr. MacDonald's further response when asked if the pattern of evolution seen in this case fits with infantile spasms. Dr. MacDonald replied that this case is "classical for the syndrome." He stated "[t]his case would fit with the vast majority of the children I've seen over the years. It's very identical."

In the instant case, the opinions offered by the petitioners' and respondent's medical experts were important to the formation of the Chief Special Master's final opinion which rejected the petitioners' claim. The special master in a vaccine case is not simply the arbiter of the experts' opinions; rather he or she is both the trier of fact and the decider of law. See 42 U.S.C. § 300aa-12(d)(3)(A)(1). "Determining the weight and credibility of the evidence is the special province of the trier of fact." Inwood Lab., Inc. v. Ives Lab., Inc., 456 U.S. 844, 856 (1982); see Raspberry v. Sec'y DHHS, 33 Fed. Cl. 420, 423 (1995). Thus, the Chief Special Master was free to accept or reject portions of the expert medical opinions presented to him in light of the entire record. See Munn v. Sec'y DHHS, 21 Cl. Ct. 345, 350 (1990), aff'd, 970 F.2d 863 (Fed. Cir. 1992); see also Mills v. Sec'y DHHS, 27 Fed. Cl. 573, 578 (1993). Moreover, the Chief Special Master was not obligated to accept the entirety of an expert's interpretation of an individual's medical history. See, e.g., Munn v. Sec'y DHHS, 21 Cl.Ct. at 350.

It is important to remember that "[t]he fact-finder has broad discretion in determining credibility because he saw the witnesses and heard the testimony." Bradley v. Sec'y DHHS, 991 F.2d at 1575. It is well-established that witness credibility is primarily within the purview of the trier of fact, and that a special master's determinations of credibility should be given appropriate deference because he or she had the opportunity to listen to the testimony, ask questions of the witnesses, and observe their demeanor. Griessenauer v. Dep't of Energy, 754 F.2d 361, 364 (Fed. Cir. 1985); Richardson v. Sec'y DHHS, 23 Cl. Ct. 674, 678 (1991); see also Burns v. Sec'y DHHS, 3 F.3d at 417; Snyder v. Sec'y DHHS, 36 Fed. Cl. at 465; Horner v. Sec'y DHHS, 35 Fed. Cl. 23, 28 (1996). This court should not second-guess the credibility determinations of the Chief Special Master unless they are proven to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. A special master's determinations regarding credibility are "virtually unreviewable." Bradley v. Sec'y DHHS, 991 F.2d at 1575 (citing Hambsch v. Dep't of Treasury, 796 F.2d 430, 436 (Fed. Cir. 1986)); Snyder v. Sec'y DHHS, 36 Fed. Cl. at 465; Walker v. Sec'y DHHS, 33 Fed. Cl. 97, 100 (1995). The court should not substitute its judgment for the factual findings made by the special master when he has considered all relevant factors, and has made no clear error of judgment. See Citizens to Preserve Overton Park, 401 U.S. at 416.

Although the Chief Special Master devotes considerable space in his opinion to the illness events, the diagnosis and the treatment options surrounding Cassandra's illness, his decision that petitioners were not entitled to compensation does not depend on "when" the diagnosis of infantile spasm syndrome could be made or whether it could be made within 72 hours of the March 20, 1991, immunization. Although the voluminous record (including the multiple hearings) and the decision, at times, are difficult to penetrate, ultimately, based on the record, including the expert opinions offered, this court believes the Chief Special Master reached a correct decision. The record supports a finding that the March 22, 1991 seizure, after the March 20, 1991, DT immunization, would not meet the statutory definition for a first symptom or manifestation of a significant aggravation of Cassandra's illness.

CONCLUSION

Upon an extensive review of the record in the above-captioned case, including the transcript, the documentary evidence, and the pleadings filed by the parties, combined with the deference granted to a special master who undertakes a thorough and careful adjudication of a case filed pursuant to the Vaccine Act, this court holds that the Chief Special Master acted in accordance with the law, properly

considered the relevant evidence and did not make a clear error of judgment in the instant action. The record also is absent any evidence that the Chief Special Master made any findings of fact or conclusions of law that were "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 300aa-12(e)(2)(B). Accordingly, the court affirms the decision of the Chief Special Master denying compensation for the petitioners.

IT IS SO ORDERED.

MARIAN BLANK HORN

Judge

1. Tit. XXI, § 2112, as added Nov. 14, 1986, Pub. L. No. 99-660, tit. III, § 311(a), 100 Stat. 3761; Dec. 22, 1987, Pub. L. No. 100-203, tit. IV, §§ 4303(d)(2)(A), 4307(3), 101 Stat. 1330-222, 1330-224 and amended Dec. 22, 1987, Pub. L. No. 100-203, tit. IV, §§ 4303(d)(2)(A), 4307(3), 101 Stat. 1330-222, 1330-224, Pub. L. No. 100-203, tit. IV, §§ 4307(3)(c), 4308, as amended and added July 1, 1988, Pub. L. No. 100-360, tit. IV, § 411(o)(2), (3)(A), 102 Stat. 808; Dec. 19, 1989, Pub. L. No. 101-239, tit. VI, § 6601(d)-(i), 103 Stat. 2286-2290; Nov. 3, 1990, Pub. L. No. 101-502, § 5(b), 104 Stat. 1286; Nov. 26, 1991, Pub. L. 102-168, tit. II, § 201, 105 Stat. 1102; Oct. 27, 1992, Pub. L. 102-531, tit. III, § 314, 106 Stat. 3508; Oct. 29, 1992, Pub. L. 102-572, tit. IX, §§ 902(b)(1), 911, 106 Stat. 4516; June 10, 1993, Pub. L. 103-43, tit. XX, § 2012, 107 Stat. 312; Aug. 10, 1993, Pub. L. 103-66, tit. IV, § 13632, 107 Stat. 312; Dec. 14, 1993, Pub. L. 103-183, tit. VII, § 708.

2. The term "on-table" refers to an injury specifically listed on the Vaccine Injury Table in 42 U.S.C. § 300aa-14(a).

3. Encephalopathy is defined in 42 U.S.C. § 300aa-14(3)(A) as "any significant acquired abnormality of, or injury to, or impairment of function of the brain."

4. Apnea is a transient suspension of respiration. The American Heritage Dictionary 118 (2d ed. 1982).

5. Cyanosis is a bluish discoloration of the skin, resulting from inadequate oxygenation of the blood. The American Heritage Dictionary 359 (2d ed. 1982).

6. The distinction between infantile spasm syndrome and infantile spasm seizures is set out in the decision by the Chief Special Master as follows:

The infantile spasms syndrome defines a condition which is made up of a particular type of seizure - the infantile spasm seizure, coupled with psychomotor retardation or deterioration, and the hypsarrhythmic EEG. J. Aicardi, Epilepsy in Children, p. 17 (1986). The infantile spasm seizure, one component of the syndrome, refers to a repetitive flexion of the muscles in the neck[,] trunk and extremities that is generally bilateral and symmetrical. Id; see also T2 at 20 (Dr. Kinsbourne describes the classical infantile seizure as the "head jerks forward or back; the eyes roll up; the arms flex; and the legs go up.") It is commonly referred to as a jackknife convulsion or salaam seizures. Id. Other types of seizures commonly precede or accompany the infantile spasm seizures; however, the hallmark of the infantile spasm syndrome is the classical infantile spasm seizure. Id.

Hoag v. Sec'y DHHS, No. 94-67V, slip op. at 7 n.6.

7. The provisions of 42 U.S.C. § 300aa-14(a) state that the first symptom or manifestation of the significant aggravation of an encephalopathy must occur within three days after a DPT or DT vaccination in order for the petitioner to obtain a presumption of causation.

8. The court in Whitecotton specifically rejected an analytical framework developed in Misasi v. Sec'y DHHS, 23 Cl. Ct. 322 (Fed. Cl. 1991). According to the Whitecotton court, Misasi required a court to

(1) assess the individual's condition prior to administration of the vaccine, i.e., evaluate the nature and extent of the individual's preexisting condition, (2) assess the individual's current condition after administration of the vaccine, (3) predict the individual's condition had the vaccine not been administered, and (4) compare the individual's current condition with the predicted condition had the vaccine not been administered. Only if the person's current condition is significantly worse than the person's predicted condition had the vaccine not been administered, is the person entitled to compensation . . . .

81 F.3d at 1104 (citing Misasi, 23 Cl. Ct. at 324). According to the court in Whitecotton, the Misasi framework improperly required petitioners to prove that the post-vaccination symptoms would not have occurred without the vaccination, rather than merely proving that the first symptom or manifestation of the aggravation took place within the table's delineated time period. Id. at 1106.