

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

H.L., ON BEHALF OF, A.I., DECEASED,
Petitioners-Appellants

v.

**SECRETARY OF HEALTH AND HUMAN
SERVICES,**
Respondent-Appellee

2017-1218

Appeal from the United States Court of Federal
Claims in No. 1:10-vv-00197-SGB, Chief Judge Susan G.
Braden.

Decided: November 1, 2017

ROBERT JOEL KRAKOW, Law Office of Robert J. Krakow, New York, NY, argued for petitioners-appellants.

ROBERT PAUL COLEMAN, III, Torts Branch, Civil Division, United States Department of Justice, Washington, DC, argued for respondent-appellee. Also represented by CHAD A. READLER, CATHARINE E. REEVES, HEATHER L. PEARLMAN.

Before LOURIE, O'MALLEY, and TARANTO, *Circuit Judges*.
O'MALLEY, *Circuit Judge*.

This case arises from the tragic death of a six-year-old girl, A.I., who suffered from Leigh disease, an inherited mitochondrial disorder that affects the central nervous system. A.I. passed away several months after receiving a live attenuated influenza vaccine, sold under the brand name FluMist® Quadrivalent. Thereafter, Petitioner H.L., A.I.'s mother, filed a petition for compensation under the National Childhood Vaccine Injury Act of 1986 (codified as amended at 42 U.S.C. §§ 300aa-1 to -34) ("Vaccine Act"), alleging that A.I.'s death was caused in part by the FluMist vaccine. According to H.L., the FluMist vaccine, in combination with an upper respiratory infection, significantly aggravated A.I.'s Leigh disease, leading to metabolic decompensation, and, ultimately, to her death.

The special master denied compensation, *H.L. v. Sec'y of Health & Human Servs.*, No. 10-0197V, 2016 WL 3751848 (Fed. Cl. Spec. Mstr. Mar. 17, 2016) ("*Special Master Decision*"), and the United States Court of Federal Claims affirmed, *H.L. v. Sec'y of Health & Human Servs.*, 129 Fed. Cl. 165 (2016). Because the Court of Federal Claims correctly concluded that the special master's decision was not arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, we *affirm*.

I. BACKGROUND

A. Factual Background

A.I. was born more than eight weeks premature on December 7, 2001, and was not discharged from the hospital until approximately two months later. *Special Master Decision*, 2016 WL 3751848, at *4. As an infant, A.I. was treated for common infections, and, although she

developed fevers on multiple occasions, she recovered from each without incident. *Id.*

After A.I.'s first birthday, however, she began exhibiting developmental delays. When A.I. was approximately fourteen-months old, for example, A.I.'s doctors noted in her medical records that she exhibited motor and possible speech delay, which they again noted when A.I. was sixteen- and eighteen-months old. *Id.* at *5. When A.I. was thirty-months old, her doctors noted that she was a late walker and fell down frequently. *Id.* And just before her third birthday, A.I.'s doctors examined A.I. after she fell and hit her head, and observed that she appeared "wobbly" when she walked. *Id.*

On January 11, 2008, when she was six-years old, A.I. visited her pediatrician following two days of coughing and a fever registering 102° F that morning. *Id.* By the time of her examination, however, A.I.'s fever had decreased to 100.3° F. *Id.* A.I.'s pediatrician diagnosed her as having an upper respiratory infection and administered the FluMist vaccine. *Id.* Later that evening, A.I. began experiencing "staring spells" during which she stared vacantly off into space and failed to respond to stimuli.¹ *Id.* & n.3. Although her upper respiratory infection improved by January 16, A.I. continued to feel unwell and stayed home from school for the next few days. *Id.*

On January 22, once back at school, A.I. experienced a series of collapses and was taken to the emergency room,

¹ The special master noted that there is no documentation supporting H.L.'s testimony that A.I. experienced staring spells on the day she was vaccinated. *Special Master Decision*, 2016 WL 3751848, at *5 n.3. The special master nevertheless accepted H.L.'s testimony that A.I. experienced such staring spells. *Id.*

where she again exhibited staring spells and intermittent weakness in her lower extremities. *Id.* at *6. Nearly one month later, A.I.’s neurologist concluded, based on an MRI scan and her symptoms, that A.I. was likely suffering from Leigh disease. Subsequent DNA testing confirmed this diagnosis.² *Id.*

On March 15, 2008, A.I. was taken by ambulance to the hospital after experiencing unconsciousness and difficulty breathing. *Id.* A.I. continued exhibiting respiratory and swallowing difficulties, and eventually underwent surgery for a gastrostomy tube placement. *Id.* at *7. Following surgery, an MRI showed a worsening of the lesions in A.I.’s brain consistent with Leigh disease. *Id.* Over the next few weeks, A.I.’s condition continued to deteriorate until she became unresponsive. A.I. passed away on April 5, 2008. *Id.* Although “Leigh Syndrome” was listed as the cause of death, no autopsy was performed. *Id.*

B. Procedural History

H.L., on behalf of A.I., filed a petition for compensation on April 1, 2010, alleging that the FluMist vaccine, in conjunction with A.I.’s upper respiratory infection, significantly aggravated her preexisting Leigh disease. On March 17, 2016, after hearing live testimony from the parties and their experts, the special master issued a detailed decision denying H.L.’s petition.

At the outset, the special master emphasized that he found H.L.’s expert’s view of the case to be “quite unpersuasive” compared to that of the government’s expert, particularly because H.L.’s expert “sought to make infer-

² Although A.I.’s Leigh disease was not diagnosed until after she received her vaccination, neither party disputes that A.I.’s Leigh disease was a preexisting condition.

ential leaps not supported by the record” and “effectively admitted that certain aspects of her causation opinion were speculative.” *Id.* at *10. The special master found that neither A.I.’s medical records nor H.L.’s expert’s opinion established a causal connection between the vaccine and A.I.’s condition. Based on his assessment of the evidence presented, the special master concluded that H.L. had failed to satisfy any of the three prongs of the governing test set forth in *Althen v. Secretary of Health & Human Services*, 418 F.3d 1274, 1278 (Fed. Cir. 2005).

In particular, the special master rejected the testimony of H.L.’s expert—Dr. Kendall—that, because A.I. did not experience metabolic decompensation after suffering from prior, more severe illnesses, her upper respiratory infection required the additional stress of the FluMist vaccination to overwhelm A.I.’s system. *Special Master Decision*, 2016 WL 3751848, at *12. The special master noted that the government’s expert—Dr. McCandless—testified, as Dr. Kendall conceded, that the cause of metabolic decompensation in Leigh disease patients is unpredictable, and that there is not always any identifiable precipitating factor. *Id.* The special master also rejected as evidence of causation certain post-marketing information in FluMist’s packaging insert that reports instances of exacerbation of Leigh disease. The special master found that the insert did not report any details and therefore “is simply not informative of any causal connection.” *Id.* at *13–14.

The special master also found that Dr. Kendall drew inferences from several articles on which she relied that were not supported by the articles themselves. The articles, for example, described autistic regression—which A.I. did not experience—in patients suffering from mitochondrial diseases, but did not discuss the particular mitochondrial disease from which A.I. suffered. *Id.* at *14. The special master found that Dr. Kendall failed to show sufficient similarity between the injuries sustained

by the patients studied in those articles and A.I.'s decline. *Id.* at *14–17. Other articles cited by Dr. Kendall suggested that a different strain of flu virus—the wild flu virus—could lead to cell death, but the special master found that H.L. did not show why one could draw a similar conclusion for the live attenuated influenza strain in the FluMist vaccine. *Id.* at *17–18.

Finally, the special master rejected Dr. Kendall's assertion that the FluMist vaccination was temporally related to the onset of A.I.'s decompensation. In particular, the special master found it unlikely that the vaccine was capable of causing A.I.'s staring spells, which occurred just hours after the vaccination. *Id.* at *10–11. He noted that Dr. McCandless proffered a study showing that there is typically a period of three to seven days between the time of an infection and the onset of neurological symptoms, and that such onset usually occurs at a time when the infection is resolving. *Id.* at *11. Relying in part on this study, the special master found that A.I.'s staring spells were more likely the result of her upper respiratory infection. *Id.* Accordingly, the special master rejected H.L.'s claim that A.I.'s decompensation was temporally related to the FluMist vaccine.

On April 18, 2016, H.L. filed a motion for review of the special master's decision with the Court of Federal Claims. The court denied that motion, *see H.L.*, 129 Fed. Cl. 165, and H.L. timely appealed to this court. We have jurisdiction under 28 U.S.C. § 1295(a)(3) and 42 U.S.C. § 300aa–12(f).

DISCUSSION

A. Standard of Review

We review an appeal from the Court of Federal Claims in a Vaccine Act case *de novo*, applying the same standard of review the Court of Federal Claims applied to the special master's decision. *Milik v. Sec'y of Health &*

Human Servs., 822 F.3d 1367, 1375 (Fed. Cir. 2016). We review the special master’s factual findings, however, under the arbitrary and capricious standard. *Id.* at 1376.

H.L. acknowledges our deferential standard of review for factual findings. *See* Appellant’s Br. at 48. She nevertheless urges, “for purposes of preservation on appeal,” that the court undertake *de novo* review of such findings. *Id.* We heard and rejected a similar request in *Milik*. We rejected the argument that the Vaccine Act unconstitutionally denies access to *de novo* review in an Article III court, and held that it is appropriate to “continue to review the special master’s findings of fact under the deferential arbitrary and capricious standard.” *Milik*, 822 F.3d at 1378–79. We are bound by our holding in *Milik*.³ We therefore apply the arbitrary and capricious standard of review in this case.

B. The Special Master’s Decision Is Neither Arbitrary Nor Capricious

Recognizing that vaccines can cause serious adverse side effects in rare circumstances, Congress enacted the Vaccine Act to allow claimants to recover for certain vaccine-related injuries, including those that significantly aggravate a preexisting condition.⁴ *Id.* at 1374–75;

³ On November 29, 2016, the petitioners in *Milik* filed a petition for a writ of certiorari with the Supreme Court. On May 30, 2017, after briefing in this case closed, the Court denied that petition. *See Milik v. Price*, 137 S. Ct. 2206 (2017).

⁴ The Vaccine Act defines “significant aggravation” as “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).

Whitecotton v. Sec’y of Health & Human Servs., 81 F.3d 1099, 1106–07 (Fed. Cir. 1996).

A petitioner seeking compensation must show “that the injury or death at issue was caused by a vaccine.” *Broekelschen v. Sec’y of Health & Human Servs.*, 618 F.3d 1339, 1341 (Fed. Cir. 2010) (citing 42 U.S.C. §§ 300aa–11(c)(1), –13(a)(1)). Where the petitioner alleges that a vaccination caused an injury that is not listed on the Vaccine Injury Table (codified at 42 U.S.C. § 300aa–14), the petitioner must establish causation-in-fact by showing, by a preponderance of the evidence: (1) a medical theory causally connecting the vaccination and the injury; (2) a logical sequence of cause and effect showing that the vaccination was the reason for the injury; and (3) a proximate temporal relationship between vaccination and injury.⁵ *Althen*, 418 F.3d at 1278.

H.L. argues that the special master erred in finding that she failed to carry her burden with respect to each of the three *Althen* prongs. H.L.’s arguments, however, are largely predicated on challenges to the special master’s factual findings and are therefore foreclosed by the heightened standard of review applicable on appeal. As we have explained, “[t]he arbitrary and capricious standard is ‘difficult for an appellant to satisfy with respect to any issue, but particularly with respect to an issue that

⁵ For significant aggravation cases such as this one, the petitioner must also describe the vaccinee’s pre- and post-vaccination medical condition and demonstrate that the post-vaccination condition constitutes a significant aggravation. See *W.C. v. Sec’y of Health & Human Servs.*, 704 F.3d 1352, 1357 (Fed. Cir. 2013); *Loving v. Sec’y of Health & Human Servs.*, 86 Fed. Cl. 135, 144 (2009). The special master found that H.L. satisfies these additional requirements, *Special Master Decision*, 2016 WL 3751848, at *20, and the government does not dispute that finding.

turns on the weighing of evidence by the trier of fact.” *Milik*, 822 F.3d at 1376 (quoting *Lampe v. Sec’y of Health & Human Servs.*, 219 F.3d 1357, 1360 (Fed. Cir. 2000)). Indeed, as long as the special master’s “conclusion [is] based on evidence in the record that [is] not wholly implausible, we are compelled to uphold that finding as not being arbitrary or capricious.” *Cedillo v. Sec’y of Health & Human Servs.*, 617 F.3d 1328, 1338 (Fed. Cir. 2010) (internal quotation marks omitted). As explained below, the special master’s decision here is based on the record evidence and is not wholly implausible.

Each of H.L.’s arguments as to why the special master erred fails. First, H.L. argues that the special master “diminished” Dr. Kendall’s opinion that A.I.’s ability to tolerate prior illnesses suggests that the additional oxidative stress placed on her system from the vaccination contributed to her decompensation in this case. Appellant’s Br. at 37. H.L. further asserts that the special master improperly “heightened” and “shifted” her burden by requiring H.L. to quantify the stress levels needed to provoke decompensation and to differentiate the stresses attributable to the FluMist vaccine and the upper respiratory infection, which H.L. asserts is impossible to do. *Id.* at 23–27. While H.L.’s burden in this context was undoubtedly a difficult one to satisfy, we cannot say that the special master’s assessment of the evidence presented was arbitrary or capricious.

As petitioner, H.L. carried the burden to prove her theory of causation by a preponderance of the evidence. See *Broekelschen*, 618 F.3d at 1346. H.L.’s theory from the start was that the FluMist vaccination, *in combination with* A.I.’s upper respiratory infection, aggravated A.I.’s Leigh disease so as to cause metabolic decompensation. See Oral Argument at 1:00–1:22, *H.L. v. Sec’y of Health & Human Servs.* (No. 17-1218), <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2017-1218.mp3> (conceding that the FluMist vaccine, in combination

with A.I.'s respiratory infection and Leigh disease, contributed to her decompensation). To prevail on that theory, therefore, H.L. was required to show that the FluMist vaccine—and not just A.I.'s upper respiratory infection—was a but-for cause and a contributing factor to A.I.'s decompensation. *See Shyface v. Sec'y of Health & Human Servs.*, 165 F.3d 1344, 1352 (Fed. Cir. 1999).

The special master determined that H.L. failed to meet that burden. In particular, the special master found—and both experts agreed—that there often is no trigger for decompensation among patients suffering from Leigh disease, and that Leigh disease often results in premature death. *Special Master Decision*, 2016 WL 3751848, at *12. The special master further found that Dr. Kendall's theory of causation was mere "speculation." *Id.* Although Dr. McCandless acknowledged that it is "possible" for infection, in the absence of fever, to cause decompensation, and that the attenuated influenza virus could increase metabolic need, J.A. 282–84, he further testified that "it's extremely unlikely" that the vaccination was the cause of A.I.'s decompensation in this case, *Special Master Decision*, 2016 WL 3751848, at *9; J.A. 293. The special master weighed the evidence and concluded that H.L. did not establish that the FluMist vaccine was a but-for cause of A.I.'s decompensation. That finding supports the special master's conclusions at *Althen* prongs 1 and 2. *See Pafford v. Sec'y of Health & Human Servs.*, 451 F.3d 1352, 1357–58 (Fed. Cir. 2006) (affirming decision denying relief where "the Special Master concluded he was unable to tell whether any of the vaccinations made any contribution to" the injury). Because H.L. failed to establish a *prima facie* case of causation, the burden never shifted to the government to prove otherwise. *Cedillo*, 617 F.3d at 1338.

Second, H.L. argues that the special master improperly discounted the post-marketing information in FluMist's package insert, which states that the vaccination could

exacerbate symptoms in patients suffering from Leigh disease. But, as the special master found and as Dr. Kendall acknowledged, the package insert does not describe a contraindication, and the medical community largely agrees that vaccines should be administered to individuals with metabolic disorders. *Special Master Decision*, 2016 WL 3751848, at *13. Dr. McCandless also testified that the post-marketing information is mandated by the FDA to ensure that potential issues may be investigated, and contains no details regarding the specific instances referred to therein. *Id.* Thus, as the post-marketing information itself states, “it is not always possible to reliably estimate” the frequency of adverse reactions to the vaccine “or establish a causal relationship to vaccine exposure.” J.A. 1914. Given this evidence, the special master was entitled to find that the post-marketing information is not probative of causation.

Third, H.L. argues that the special master failed to place appropriate weight on articles proffered by Dr. Kendall. But, as the special master noted, these articles discuss circumstances that are not directly analogous to A.I.’s case. The single patient described in John S. Poling et al., *Developmental Regression and Mitochondrial Dysfunction in a Child with Autism*, 21 J. CHILD NEUROLOGY 170 (2006) (“Poling”), for example, experienced an autistic regression, and did not have Leigh disease. Although the special master did “not entirely discount[] the evidentiary value of the Poling report,” he found that Dr. Kendall provided no evidence supporting the notion that autistic regression can be equated to metabolic decompensation, making it nearly impossible to draw any meaningful inferences from Poling. *Special Master Decision*, 2016 WL 3751848, at *14–15. As the special master noted, “[e]stablishing a theory that a vaccine can cause injury ‘X’ is not the same as proving that it can cause injury ‘Y,’ absent some evidence showing that injuries X and Y share sufficient commonality.” *Id.*

at *14 n.16. The special master determined that H.L. did not proffer any evidence showing such commonality. And even if the case studied in Poling were similar to A.I.'s case, the special master concluded that Dr. Kendall's testimony that decompensation in Leigh disease patients can occur without any known stressor "dramatically undercuts" her reliance on Poling. *Id.* at *15. Again, we do not find this conclusion to be arbitrary.

The special master made similar findings with respect to the other articles cited by H.L.⁶ *Id.* at *15–16. For example, the special master determined that the articles addressing the wild flu virus's effect on cells are inapposite, as they are not informative as to whether the same mechanism applies to an attenuated flu vaccine, where infection is not expected. *Id.* at *17–18. These findings too are neither arbitrary nor capricious, and further support the special master's findings at *Althen* prongs 1 and 2.

Finally, citing to our recent decision in *Paluck v. Secretary of Health & Human Services*, 786 F.3d 1373 (Fed. Cir. 2015), H.L. argues that the special master erred in finding that the onset of A.I.'s symptoms occurred too soon after the vaccination to have been attributable to the FluMist vaccine. But *Paluck* is distinguishable.

In *Paluck*, a one-year old boy developed, over the course of several months, severe neurodegeneration following MMR, varicella, and pneumococcal vaccinations. *See Paluck*, 786 F.3d at 1375–77. The special master in

⁶ See John Shoffner et al., *Fever Plus Mitochondrial Disease Could Be Risk Factors for Autistic Regression*, 25 J. CHILD NEUROLOGY 429 (2009); Michael T. Brady, *Immunization Recommendations for Children with Metabolic Disorders: More Data Would Help*, 118 PEDIATRICS 810 (2006).

that case found that the petitioners did not meet their burden of proof under the Vaccine Act because they failed to show that their child manifested symptoms within the timeframe suggested by the medical literature. *Id.* at 1383–84. On appeal, we held that the special master erred by imposing a strict time constraint for the onset of the vaccinee’s neurodegeneration. We observed that mitochondrial disorders “are as yet poorly understood by the medical community,” and that the special master therefore “had no reasonable basis for setting a hard and fast deadline of three weeks for the onset of neurological symptoms.” *Id.* at 1384.

Here, the special master did not set a hard-and-fast deadline based on the medical literature, as even H.L.’s counsel conceded at oral argument. *See* Oral Argument at 10:00–10:15 (acknowledging that the special master did “not necessarily [impose] a hard-and-fast rule”). In fact, the special master emphasized that the study on which he relied was “not dispositive” of his analysis, and that Dr. Kendall’s claim of a temporal relationship was “speculative” “with or without” reference to the study. *Special Master Decision*, 2016 WL 3751848, at *11. The special master relied on the study merely to show that the temporal relationship between the FluMist vaccine and A.I.’s symptoms makes the “vaccination an unlikely explanation for A.I.’s metabolic decompensation.” *Id.* at *22. The special master’s “requirement for strong temporal evidence” in this regard does not contravene *Paluck* and is “consistent with the third prong of the *Althen* test.” *Pafford*, 451 F.3d at 1358; *De Bazan v. Sec’y of Health & Human Servs.*, 539 F.3d 1347, 1352 (Fed. Cir. 2008) (noting that, where onset occurs too soon after vaccination, “the temporal relationship is not such that it is medically acceptable to conclude that the vaccination and the injury are causally linked”).

The special master further noted that, because Dr. Kendall proffered no evidence regarding the expected

timing of neurologic deterioration, the government’s study was the “*only* evidence in th[e] record regarding” such timing. *Special Master Decision*, 2016 WL 3751848, at *11. The study teaches that patients typically manifest neurological symptoms within a few days after infection and as the infection is resolving. Similarly, here, A.I. experienced staring spells mere hours after the vaccination, but days after having contracted her upper respiratory infection, and while her infection was resolving. Among the “two competing expert opinions,” the special master found that Dr. McCandless’s opinion was “more persuasive” on this point, and that A.I.’s symptoms were more likely to be attributable to her upper respiratory infection than to the FluMist vaccination. *Id.* We are not at liberty to reweigh the factual evidence and assess the credibility of the parties’ experts, as H.L. apparently asks us to do. *See Milik*, 822 F.3d at 1380.⁷

The special master’s findings are not arbitrary or capricious, and those findings support the special master’s conclusion that H.L. has failed to satisfy each of the *Althen* prongs.

⁷ H.L. asserts that A.I.’s first “major” symptoms were not her staring spells, but rather her collapses on January 22, 2008—eleven days after the vaccination. Appellant’s Br. at 32. While it is true that Dr. Kendall testified that A.I.’s onset culminated with her collapses, Dr. Kendall stated that A.I.’s *first* symptoms were her staring spells. *Special Master Decision*, 2016 WL 3751848, at *10. In any event, the special master considered H.L.’s argument, and found that he would still have rejected H.L.’s causation claim for the other reasons discussed above. *Id.* at *11 n.8.

III. CONCLUSION

While we sympathize with H.L. for the tragic loss of her daughter, and may have weighed some of the evidence differently in the first instance, we conclude that H.L. has not shown that the special master committed reversible error. We therefore *affirm* the Court of Federal Claims' decision.

AFFIRMED

COSTS

No costs.