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IN THE SUPREME COURT OF THE STATE OF HAWAI'I

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GERARDO DENNIS PATRICKSON; BENIGNO TORRES HERNANDEZ;
FERNANDO JIMENEZ ARIAS; ALIRIO MANUEL MENDEZ; and
CARLOS HUMBERTO RIVERA, individually and on behalf of
others similarly situated,
Respondents/Plaintiffs-Appellants,

vs.

DOW CHEMICAL COMPANY and DEL MONTE FRESH PRODUCE N.A., INC.,
Petitioners/Defendants-Appellees,

and

DOLE FOOD COMPANY, INC.; DOLE FRESH FRUIT COMPANY; SHELL OIL
COMPANY; OCCIDENTAL CHEMICAL CORPORATION (individually and as
successor to Occidental Chemical Company and Occidental Chemical
Agricultural Products, Inc., Hooker Chemical and Plastics,
Occidental Chemical Company of Texas, and Best Fertilizer
Company); STANDARD FRUIT COMPANY; STANDARD FRUIT AND STEAMSHIP
COMPANY; DEL MONTE FRESH PRODUCE (HAWAI'I), INC. (previously
incorrectly named as Del Monte Fresh Produce Hawai'i, Inc.),
Respondents/Defendants-Appellees.

SCWC-22-0000687

CERTIORARI TO THE INTERMEDIATE COURT OF APPEALS
(CAAP-22-0000687; CASE NO. 1CC071000047)

SEPTEMBER 21, 2026

DEVENS, C.J., McKENNA, EDDINS, AND GINOZA, JJ., AND
CIRCUIT JUDGE TOMASA, ASSIGNED BY REASON OF VACANCY

OPINION OF THE COURT BY McKENNA, J.

I. Introduction

This is the second appeal in this two-decade-old toxic tort case.¹ The lawsuit was brought by Central and South American banana plantation workers alleging injuries caused by exposure to the pesticide dibromochloropropane ("DBCP"). Plaintiffs Gerardo Dennis Patrickson, Benigno Torres Hernandez, Alirio Manuel Mendez, Carlos Humberto Rivera, and Fernando Jimenez Arias ("Arias")² (collectively, the "Plaintiffs") were previously employed by a subsidiary of Del Monte Fresh Produce N.A., Inc. ("Del Monte"), which used DBCP manufactured by Dow Chemical Company ("Dow") in its banana plantations.

In this appeal, the Intermediate Court of Appeals ("ICA") made various rulings. Relevant to this certiorari proceeding, the ICA vacated the Circuit Court of the First Circuit's ("circuit court") orders granting: (1) Dow's motion for summary judgment on Plaintiffs' complaint; (2) Dow's motion in limine excluding Plaintiffs' expert witness, Michael J. DiBartolomeis, Jr. ("DiBartolomeis"); and (3) Del Monte's joinders in Dow's motions.

¹ See Patrickson v. Dole Food Co., 137 Hawai'i 217, 368 P.3d 959 (2015) with respect to the first appeal.

² Arias is referenced in the parties' briefs as "Jimenez," "Jimenez Arias," and "Jimenez-Arias." For consistency, we will refer to him as "Arias."

On certiorari, Dow and Del Monte (collectively, the "Defendants") challenge the ICA's vacatur of summary judgment as to Arias, maintaining that the record does not reflect evidence of Arias's exposure to DBCP. They further contend that DiBartolomeis's expert opinions were properly excluded, rendering summary judgment appropriate as to Arias. Defendants also ask this court to determine if the ICA erroneously applied the wrong standard of review in vacating the circuit court's order granting Dow's motion in limine.

For the reasons discussed below, we affirm the ICA and provide guidance on remand, including how to address causation in mass toxic torts cases, like this one, in which many people allege illness or injury caused by exposure to toxic substances.

Thirty-five years ago, in Smith v. Cutter Biological, Inc., a Div. of Miles Inc., 72 Haw. 416, 823 P.2d 717 (1991), this court recognized that the traditional "substantial factor" causation test is unworkable in mass toxic tort cases:

No longer can we apply traditional rules of negligence, such as those used in individual and low level negligence to mass tort cases, especially here, where we are dealing with a pharmaceutical industry that dispenses drugs on a wide scale that could cause massive injuries to the public, and where fungibility makes the strict requirements difficult to meet. The problem calls for adopting new rules of causation, for otherwise innocent plaintiffs would be left without a remedy.

Smith, 72 Haw. at 428, 823 P.2d at 724 (emphasis added). In Smith, the plaintiff was unable to establish which of four manufacturers had caused his injury; for that circumstance, this

court adopted "the alternative market share theory of recovery." Smith, 72 Haw. at 421, 823 P.2d at 721.

Here, it is undisputed that Dow manufactured the DBCP that Del Monte's subsidiary applied at the banana plantations where Plaintiffs were allegedly exposed. The alternative market share theory of recovery is therefore inapposite. The substantial factor test fares no better because it may still leave "otherwise innocent plaintiffs [] without a remedy." Smith, 72 Haw. at 428, 823 P.2d at 724. And the "frequency, regularity, and proximity" test used in asbestos litigation, which Defendants urge this court to adopt, is merely a version of the substantial factor test.

We therefore hold that the appropriate approach to causation in toxic tort cases is the one set out in comment g to section 26 of the Restatement (Third) of Torts ("Third Restatement"). See Restatement (Third) of Torts: Phys. & Emot. Harm § 26, cmt. g. In these types of cases, the Third Restatement evaluates causation based on (1) general causation, (2) specific causation, and (3) exposure to the agent:

In toxic-substances cases, the causal inquiry is modified by the limits of and available forms of scientific evidence. That inquiry often must address whether the agent for which the actor is responsible is capable of causing the disease from which another suffers (known as general causation). In addition, the question whether the agent caused the specific plaintiff's disease (known as specific causation) is confronted. See [Restatement (Third) of Torts] § 28, [cmt.] c(3) and c(4). In addition, a person's exposure to the actor's agent is another necessary aspect for factual cause to exist. See [Restatement (Third) of

Torts] § 28, [cmt.] c(2). Each of these distinct inquiries is a component of the factual-cause inquiry.

Restatement (Third) of Torts: Phys. & Emot. Harm § 26, cmt. g.

We reorder this causation test to (1) exposure to the agent, (2) general causation, and (3) specific causation. For if there was no exposure, it is not necessary to address general or specific causation.

With this and the other guidance provided in this opinion, we affirm the ICA's November 6, 2025 judgment on appeal.

II. Background

A. Factual background

The following factual background is primarily derived from the deposition testimony of Arias and his wife, Vilma Julieta Graham Mastiel ("Mastiel").

Shortly after getting married, Arias worked as a quality fruit inspector for Bandeco from 1971 to 1973. Bandeco is a banana company based in Costa Rica and a subsidiary of Del Monte.

Arias rotated on a weekly basis through eighteen banana farms, fifteen of which were owned by Bandeco, and worked up to seven days per week with little to no vacation days. He started his day by inspecting the quality of bananas arriving from the fields. The bananas were delivered to the patio of a packing facility before being taken inside, where Arias inspected them.

Each packing facility was located on the farm where the bananas were grown.

Arias worked as part of a team of two or three quality inspectors assigned to a single packing facility. When an assignment required overnight stays, they slept in a house on the farm. At times, Arias remained on the farm for up to a week due to the volume of bananas requiring inspection.

In addition to conducting quality inspections, Arias occasionally accepted invitations from the farm administrator to walk the fields to observe operations. This occurred every once in a while at each farm where he worked while employed by Bandeco. Field cutting typically concluded around midday, after which Arias and the other quality inspectors entered the fields. While in the fields, the administrator explained the farm's management and operational practices.

Arias never observed anyone applying pesticides during his employment, although he knew individuals who applied them without knowing what substances were being used. He neither applied DBCP,³ observed it being applied, nor handled it in any

³ For further discussion of DBCP, see Patrickson v. Dole Food Co., 251 F.3d 795 (9th Cir. 2001), Dole Food Co. v. Patrickson, 538 U.S. 468 (2003), Patrickson v. Dole Food Co., Inc., No. 30700, 2014 WL 895186 (App. Mar. 7, 2014) (mem. op.), and Patrickson, 137 Hawai'i 217, 368 P.3d 959.

way. DBCP is a powerful nematocide that was manufactured by Dow and used by Bandeco on its farms.⁴

When the field cutting ran late and the arrival of bananas was delayed, or during periods of heavy rain, Arias and the other quality inspectors went into warehouses where chemicals used on the farms were stored and slept on or near sacks containing those chemicals. They were unaware of any potential dangers from inhalation or whether the chemicals were poisonous. Although Arias could not recall the specific chemicals stored there, he knew they were chemicals because the warehouses were used to store substances applied to the banana crops. When the bananas arrived at the packing facility, or when it stopped raining, they exited the warehouses.

Arias married Mastiel in 1968. From the time they were married until Mastiel's first pregnancy in 1971, Arias and his wife attempted to have children, without success. During that

⁴ Del Monte confirmed in responses to Plaintiffs' interrogatories that, between 1970 and 1973,

Bandeco applied DBCP at its own banana farms at a rate of 4 or 5 [cubic centimeters] per injection, 6 [to] 8 injections per plant, [at a depth of 15 centimeters,] using a 50 [percent] diluted solution of DBCP. Each acre of banana plants had approximately [1,400 to 1,800] plants. There were two applications per year. This calculates to between 3.6 and 7.7 gallons per year of DBCP per cultivated acre of banana plants on Bandeco owned or operated farms, depending on the number of banana plants per acre and the number of [cubic centimeters] in each injection.

"The DBCP was generally applied in two separate cycles lasting approximately two-months per cycle and was not applied monthly or more than two times per plant per year."

period, they did not consult physicians due to financial constraints. Their first biological child was born in April 1971 and passed away later that year from an illness.

They eventually had two children: one biological daughter born in April 1975, and a second daughter who they adopted.

But between 1977 and 1983, Mastiel had three additional pregnancies that ended in miscarriages a few months after conception. Mastiel never used birth control or attempted to avoid pregnancy. Mastiel never received an explanation from her physicians regarding the cause of her miscarriages or any treatment for her pregnancy complications.

Arias passed away in November 2023 during the course of these proceedings.

C. Procedural background

1. Circuit court proceedings

In their operative second amended complaint, Plaintiffs brought claims for negligence, conspiracy, and intentional tort against Dow and Del Monte, among others, and sought compensatory and punitive damages. Plaintiffs alleged that their health, welfare, and lives were damaged due to their exposure to DBCP.

a. Michael DiBartolomeis's expert report and testimony

Plaintiffs' toxicologist, DiBartolomeis, prepared an expert report expressing his opinion that Arias's health problems were

likely caused by his exposure to DBCP while working on Bandeco's banana farms. Despite not knowing the precise levels of DBCP present in the farms, DiBartolomeis noted that "even short-term exposures to relatively low[] concentrations of DBCP in the air could be toxic to the male reproductive system." DiBartolomeis opined that Arias's exposure to DBCP most likely occurred via inhalation and potential dermal contact while working inside the packing facilities, walking in the open fields beneath the canopies of banana plants, and sleeping in the warehouse where chemicals were stored. DiBartolomeis also observed that Arias's infertility and his wife's miscarriages were "consistent with the known toxic effects of DBCP exposure in humans."

DiBartolomeis relied on several human studies that focused on occupational exposure to DBCP in agricultural settings, including one by Martin Kharrazi, Gad Potashnik, and John R. Goldsmith that evaluated the pregnancy outcomes of married women whose husbands were employed as banana workers in Israel. Martin Kharrazi, Gad Potashnik, and John R. Goldsmith, Reproductive Effects of Dibromochloropropane, 16 Israel J. Med. Sci. 403, at 404 (1980) ("Kharrazi Study"). The authors interviewed 62 men, 56 of whom worked in direct contact with DBCP, and found that,

[o]f 197 pregnancies reported for the total study group, 76 occurred before any contact with DBCP and 121, after the initial exposure. Of the 76 pregnancies before DBCP contact, 71 resulted in livebirths and 5 (6.6% of

pregnancies), in spontaneous abortion; of the 121 pregnancies after initial DBCP exposure, 97 resulted in livebirths and 24 (19.8% of pregnancies), in spontaneous abortion.

Reproductive Effects of Dibromochloropropane, 16 Israel J. Med. Sci., at 404. The authors cautioned that "[a]lthough the design of this type of epidemiologic study can only point to associations and cannot prove a causal relationship, it is plausible that DBCP is causing an increased rate of spontaneous abortion in the exposed population through its effect on spermatogenesis." Reproductive Effects of Dibromochloropropane, 16 Israel J. Med. Sci., at 405. Based on the Kharrazi Study and others, DiBartolomeis "conclude[d] within a reasonable degree of scientific probability that [Arias's] exposure to DBCP . . . is the most plausible explanation for [his] testicular injury, oligospermia, and poor pregnancy outcomes."

b. Dow's motion for summary judgment

Dow moved for summary judgment on the operative complaint, but only as to Arias. Del Monte filed a joinder. Dow disputed the causation element of the negligence claim, contending Plaintiffs offered no evidence that Arias had any contact with DBCP. Dow relied on Arias's admissions that he did not apply DBCP, did not work in the areas where DBCP was applied, could not identify a container of DBCP, and never witnessed its application to argue that no genuine dispute of material fact

existed as to whether he was exposed to DBCP and whether DBCP caused his alleged infertility and his wife's miscarriages.

Dow further asserted that DiBartolomeis's expert report and testimony failed to create a genuine dispute that DBCP caused Arias's alleged injuries. Dow opposed DiBartolomeis's reliance on the Kharrazi Study, noting that, unlike the fifty-six married banana workers, Arias admitted he had no direct contact with DBCP. Dow argued that DiBartolomeis's opinion rested on a study involving a population whose work history bore no resemblance to Arias's.

c. Dow's motion in limine

Dow concurrently filed a motion in limine to preclude DiBartolomeis's expert report and testimony. Del Monte filed a joinder. Dow argued that DiBartolomeis's opinions were speculative, unreliable, and unsupported by the facts because he improperly assumed that Arias spent four hours in the fields each afternoon, despite Arias's testimony that he visited only "once in a while," and that Arias was exposed to DBCP via inhalation on and immediately after application days, even though Arias admitted he never observed any applications. Dow also disputed DiBartolomeis's opinion that DBCP was a "substantial factor" in causing Mastiel's alleged miscarriages, arguing that the opinion was based solely on the Kharrazi Study, whose authors expressly stated could not prove causation.

d. Circuit court orders granting Dow's motions

Following a hearing, the circuit court granted Dow's motions for summary judgment and in limine and Del Monte's joinders. The circuit court concluded that Arias failed to establish a prima facie case of legal causation because the record contained no evidence of his exposure to DBCP, and that DiBartolomeis's opinions thus lacked an evidentiary basis for causation in fact.

3. ICA proceedings

The ICA vacated the circuit court's orders granting Dow's motions for summary judgment and in limine. Patrickson v. Dole Food Co., Inc., No. CAAP-22-0000687, 2025 WL 2693624, at *6 (Haw. App. Sept. 22, 2025) (mem. op.). The ICA concluded that Arias's deposition testimony raises genuine issues of material fact regarding his alleged exposure to DBCP and the adverse effects such exposure had on his and his wife's health. Id.

4. Certiorari proceedings

On certiorari, Defendants raise the following questions:

1. Toxic Tort Causation Standard. When the only evidence is that Plaintiff, a fruit inspector, worked away from the fields where the subject chemical (DBCP) was applied, never saw DBCP being applied, and never worked with it himself, is it sufficient for the plaintiff to proceed to trial when he merely "must have [had] some exposure because he was on the farm" where it was applied?

2. Appellate Standard of Review of the Trial Court's Gatekeeper Review of Expert Testimony. Did the ICA gravely err when it used a summary judgment standard in evaluating an expert's causation testimony instead of evaluating the testimony for reliability and relevancy, and when it

effectively applied a *de novo* review, rather than an abuse of discretion standard?

Defendants essentially urge this court to adopt the frequency, regularity, and proximity test applied in asbestos cases like Fowler v. Akzo Nobel Chemicals, Inc., 251 N.J. 300, 334 (N.J. 2022), as the standard governing causation in toxic tort cases and to require plaintiffs to prove dosage as part of that showing. They also ask this court to decide whether the ICA erred in applying the summary judgment standard to DiBartolomeis's causation testimony rather than evaluating the testimony for reliability and relevancy under an abuse of discretion standard.

II. Standard of Review

A. Motion for summary judgment

An appellate court reviews an award of summary judgment *de novo* under the same standard applied by the circuit court. Fujimoto v. Au, 95 Hawai'i 116, 136, 19 P.3d 699, 719 (2001) (citation omitted). This court articulated the standard as follows:

Summary judgment is appropriate if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.

Id. (citations omitted). We must review the evidence in the light most favorable to the party opposing the motion for

summary judgment. 95 Hawai'i at 137, 19 P.3d at 720 (citations omitted).

We have further explained the burdens of the moving and non-moving parties on summary judgment as follows:

The burden is on the party moving for summary judgment (moving party) to show the absence of any genuine issue as to all material facts, which, under applicable principles of substantive law, entitles the moving party to judgment as a matter of law. This burden has two components.

First, the moving party has the burden of producing support for its claim that: (1) no genuine issue of material fact exists with respect to the essential elements of the claim or defense which the motion seeks to establish or which the motion questions; and (2) based on the undisputed facts, it is entitled to summary judgment as a matter of law. Only when the moving party satisfies its initial burden of production does the burden shift to the non-moving party to respond to the motion for summary judgment and demonstrate specific facts, as opposed to general allegations, that present a genuine issue worthy of trial.

Second, the moving party bears the ultimate burden of persuasion. This burden always remains with the moving party and requires the moving party to convince the court that no genuine issue of material fact exists and that the moving part[y] is entitled to summary judgment as a matter of law.

French v. Hawaii Pizza Hut, Inc., 105 Hawai'i 462, 470, 99 P.3d 1046, 1054 (2004) (citation and emphasis omitted). This court has prescribed detailed guidance regarding how a moving party may satisfy its initial burden on a motion for summary judgment, providing that:

a summary judgment movant may satisfy [their] initial burden of production by either (1) producing admissible evidence to show there was no genuine issue of material fact, or (2) showing that the non-moving party cannot carry [their] burden of proof at trial.... [T]he movant generally cannot support its initial burden of production by pointing solely to the non-moving party's lack of evidence if discovery has not concluded.

Ralston v. Yim, 129 Hawai'i 46, 48, 292 P.3d 1276, 1278 (2013)
(citation omitted).

III. Discussion

A. Causation standard in toxic tort cases

This court first addressed the causation element in toxic tort cases in Smith, 72 Haw. 416, 823 P.2d 717. There, the appellant was a hemophiliac who tested HIV-positive with the AIDS virus and claimed that his exposure to the virus occurred through injections of the Antihemophilic Factor Concentrate (AHF). Smith, 72 Haw. at 421-22, 823 P.2d at 721. Appellant sued the four AHF manufacturers for negligence and strict liability, and the manufacturers moved for summary judgment. Smith, 72 Haw. at 422, 823 P.2d at 722. The United States District Court for the District of Hawai'i ("USDC-HI") granted summary judgment in favor of the manufacturers, "holding that appellant failed to prove specifically which manufacturer's product caused his infection." Smith, 72 Haw. at 422-23, 823 P.2d at 722.

The case came before this court through certified questions from the United States Court of Appeals for the Ninth Circuit, one of which concerned the causation factor in negligence cases:

3. Would Hawaii allow recovery in this case when the identity of the actual tortfeasor cannot be proven? If Hawaii would allow recovery, what theory (i.e. burden-shifting, enterprise liability, market share or other) would the Hawai'i Supreme Court adopt?

. . . . In considering our response to the questions, we note that the issue as to question[] . . . three concerns the causation factor in negligence. The instant problem is that the plaintiff cannot identify which particular defendant caused his injury.

Smith, 72 Haw. at 419-20, 823 P.2d at 720. We responded "yes" to question three and adopted "the alternative market share theory of recovery."⁵ Smith, 72 Haw. at 421, 823 P.2d at 721.

In considering the third question, we explained that we would need to "deviat[e] from the traditional proof in a negligence case, which . . . includes the factor of causation" because in mass tort cases, plaintiffs might not be able to identify the actual entity responsible for their injuries:

As discussed in the American Law Institute Enterprise Responsibility for Personal Injuries-Reporter's Study (1991) (ALI Study), the field of torts has now expanded to include personal injury actions described in three tiers of actions. . . . [T]he third tier includes "mass" torts where toxic exposure to many plaintiffs may, many years later, cause cancer or other illness. . . . It is this final tier with which this case deals. It necessitates considering how to fairly deal with the plight of plaintiffs unable to identify, for no fault of their own, the person or entity who should bear the liability for their injury.

Smith, 72 Haw. at 426, 428, 823 P.2d at 723, 724 (emphasis added).

We then more generally recognized that new rules of causation would need to be adopted for mass tort cases:

⁵ The alternative market share theory of recovery is defined as follows:

Where the conduct of two or more actors is tortious, and it is proved that harm has been caused to the plaintiff by only one of them, but there is uncertainty as to which one has caused it, the burden is upon each such actor to prove that he has not caused the harm.

Restatement (Second) of Torts § 433B(3) (1965) ("Second Restatement").

No longer can we apply traditional rules of negligence, such as those used in individual and low level negligence to mass tort cases, especially here, where we are dealing with a pharmaceutical industry that dispenses drugs on a wide scale that could cause massive injuries to the public, and where fungibility makes the strict requirements difficult to meet. The problem calls for adopting new rules of causation, for otherwise innocent plaintiffs would be left without a remedy.

Smith, 72 Haw. at 428, 823 P.2d at 724 (emphasis added).

Ultimately, this court adopted the alternative market share theory of recovery but did not set forth a new rule of causation. But this court explicitly recognized the need for new approaches to causation in toxic tort cases.

More recently, in Feindt v. United States, CIV NO. 22-00397 LEK-KJM, 2025 WL 1348465, at *2 (D. Haw. May 7, 2025), the USDC-HI addressed a negligence action brought by seventeen plaintiffs who sustained personal injuries "from ingesting and being exposed to drinking water that was contaminated by jet fuel." Recognizing that we have not developed a test for causation in toxic tort cases, the Feindt court predicted how we would resolve the issue. First, it anticipated that we would require expert testimony on the causation factor:

There is no controlling Hawai'i law specifically addressing the test for legal causation in toxic tort cases. The Court must therefore predict how the Hawai'i Supreme Court will decide the issue. See Judd v. Weinstein, 967 F.3d 952, 955-56 (9th Cir. 2020). The Court predicts that the Hawai'i Supreme Court would hold that the same test applied in medical negligence cases would extend to toxic tort actions. Namely, that expert testimony is required to determine causation.

Feindt, 2025 WL 1348465, at *4 (emphasis added).⁶

Second, the Feindt court applied the causation test in Hanford, 292 F.3d at 1133, a toxic tort case involving thousands of plaintiffs who were allegedly exposed to radioactive emissions from a federal nuclear facility. In Hanford, the Ninth Circuit analyzed causation in terms of general and specific causation:

General, or "generic" causation has been defined by courts to mean whether the substance at issue had the capacity to cause the harm alleged, while [specific causation or] "individual causation" refers to whether a particular individual suffers from a particular ailment as a result of exposure to a substance.

Feindt, 2025 WL 1348465, at *4. Applying this bifurcated test, the Feindt court determined there was sufficient expert testimony evidence to support a finding "that the chemicals contained in the [jet fuel] had the capacity to cause the harm alleged by [p]laintiffs" (general causation) and that certain

⁶ The requirement of expert testimony is one component of the causation test in medical negligence cases, see Est. of Frey v. Mastroianni, 146 Hawai'i 540, 550-51, 463 P.3d 1197, 1207-08 (2020), and toxic tort cases, see In re Hanford Nuclear Rsrv. Litig., 292 F.3d 1124, 1133 (9th Cir. 2002).

In Exotics Hawaii-Kona, Inc. v. E.I. Du Pont De Nemours & Co., this court stated the rationale for requiring expert testimony to prove causation in medical negligence cases, reasoning that "'lay jurors are ill prepared to evaluate complicated technical data for the purpose of determining whether professional conduct conformed to a reasonable standard of care and whether there is a causal relationship between the violation of a duty and an injury to the patient.'" Exotics, 116 Hawai'i 277, 299-300, 172 P.3d 1021, 1043-44 (2007) (citation omitted); see Craft v. Peebles, 78 Hawai'i 287, 298, 893 P.2d 138, 149 (1995) (finding it well-settled in medical malpractice cases that "the question of negligence must be decided by reference to relevant medical standards of care for which the plaintiff carries the burden of proving through expert medical testimony," since "a jury generally lacks the requisite special knowledge, technical training, and background to be able to determine the applicable standard without the assistance of an expert").

plaintiffs sustained injuries from their "exposure to the chemicals contained in the [jet fuel]" (specific causation). Feindt, 2025 WL 1348465, at *5. Moreover, upon finding "that the actual and specific amount of jet fuel chemicals . . . released into the water supply . . . [wa]s not capable of being reliably calculated," it concluded that plaintiffs were not required to specify "the actual dose to which each individual . . . was exposed" to prove causation. Feindt, 2025 WL 1348465, at *6.

Finally, in addition to applying general and specific causation, the Feindt court also applied the substantial factor test that this court adopted in Mitchell v. Branch, 45 Haw. 128, 132, 363 P.2d 969, 973 (1961) to ascertain "whether [the] defendant's conduct was 'a substantial factor in bringing about the [plaintiffs'] harm[s].'" Feindt, 2025 WL 1348465, at *8 (citing O'Grady v. State, 140 Hawai'i 36, 44, 398 P.3d 625, 633 (2017)), *7-30.

In Mitchell, 45 Haw. at 132, 363 P.2d at 973, we adopted the Restatement (First) of Torts' ("First Restatement") test for legal cause, which reads:

The actor's negligent conduct is a legal cause of harm to another if

- (a) his conduct is a substantial factor in bringing about the harm, and
- (b) there is no rule of law relieving the actor from liability because of the manner in which his negligence has resulted in the harm.

Restatement (First) of Torts § 431 (1934) (emphasis added)
("Mitchell test").

However, in Smith, this court recognized that toxic tort cases require new rules of causation and thus rejected the substantial factor test in favor of the alternative market share theory of recovery. Smith, 72 Haw. at 421, 428, 823 P.2d at 721, 724. But although Smith did not cite Mitchell directly, it did reference Knodle v. Waikiki Gateway Hotel, Inc., which reaffirmed the Mitchell test as "[t]he best definition and the most workable test of proximate or legal cause." Knodle, 69 Haw. 376, 390, 742 P.2d 377, 386 (1987) (citing Mitchell, 45 Haw. at 132, 363 P.2d at 973); see Smith, 72 Haw. at 426, 823 P.2d at 723. Therefore, it is understandable why the Feindt court predicted that this court would continue to rely on the substantial factor test.

Smith established that the substantial factor test was unworkable in mass toxic tort cases because it could leave innocent plaintiffs without a remedy. Smith, 72 Haw. at 428, 823 P.2d at 724. In fact, the Feindt court determined that plaintiffs failed to meet this causation standard with respect to at least some of the injuries alleged. Feindt, 2025 WL 1348465, at *8.

And recognizing this court's statement in Smith that mass toxic tort cases require new rules of causation, Defendants urge this court to adopt the frequency, regularity, and proximity test used in asbestos litigation, citing Fowler, 251 N.J. 300, as an example. But as the New Jersey Supreme Court clarified in Fowler, 251 N.J. at 336, "[t]he frequency, regularity, and proximity test is merely an articulation of what constitutes a substantial factor for purposes of determining proximate cause in an occupational exposure setting." In other words, the two tests are functionally equivalent. Federal caselaw cited by Defendants supports this conclusion. See Menne v. Celotex Corp., 861 F.2d 1453, 1464 (10th Cir. 1988); Lohrmann v. Pittsburgh Corning Corp., 782 F.2d 1156, 1162 (4th Cir. 1986).

It is therefore time for this court to determine how causation should be addressed in mass toxic tort cases.

In this regard, this court has turned to the Restatement of Torts on various occasions to determine how we should address developing areas of tort law. See Bynum v. Mango, 106 Hawai'i 81, 86 n.12, 101 P.3d 1149, 1154 n.12 (2004) (noting this court has relied on the American Law Institute's restatements of torts as persuasive authority); Guieb v. Guieb, 156 Hawai'i 162, 170-71, 571 P.3d 382, 390-91 (2025) (adopting new punitive damages standard from Third Restatement of Torts: Phys. & Emot. Harm §

39) Indeed, the Mitchell test was based on the First Restatement of Torts.

We now adopt the causation test for toxic tort cases set out in comment g to section 26 of the Third Restatement. See Restatement (Third) of Torts: Phys. & Emot. Harm § 26, cmt. g. In these types of cases, the Third Restatement defines causation in terms of (1) general causation, (2) specific causation, and (3) exposure to the agent:

In toxic-substances cases, the causal inquiry is modified by the limits of and available forms of scientific evidence. That inquiry often must address whether the agent for which the actor is responsible is capable of causing the disease from which another suffers (known as general causation). In addition, the question whether the agent caused the specific plaintiff's disease (known as specific causation) is confronted. See [Restatement (Third) of Torts] § 28, [cmt.] c(3) and c(4). In addition, a person's exposure to the actor's agent is another necessary aspect for factual cause to exist. See [Restatement (Third) of Torts] § 28, [cmt.] c(2). Each of these distinct inquiries is a component of the factual-cause inquiry.

Restatement (Third) of Torts: Phys. & Emot. Harm § 26, cmt. g.

We reorder this causation test to (1) exposure to the agent, (2) general causation, and (3) specific causation. If there has been no exposure, there is no need to reach general or specific causation.

We also adopt the Third Restatement's explanations of exposure, general causation, and specific causation:

(2). Exposure to the agent. In evaluating factual causation, one issue that may arise is whether the plaintiff was exposed to the substance.

.

(3). General causation. "General causation" exists when a substance is capable of causing a given disease.

.

(4). Specific causation. "Specific causation" exists when exposure to an agent caused a particular plaintiff's disease.

Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmts.

c(2)-(4) (emphasis omitted). General and specific causation are generally explained by the above, which are the first sentences of comments (c)(3) and (4); these comments provide additional information on issues relating to general and specific causation. The first sentence of comment (c)(2) quoted above merely states that questions of exposure arise; the first paragraph of the comment generally explains how exposure might occur:

(2). *Exposure to the agent.* In evaluating factual causation, one issue that may arise is whether the plaintiff was exposed to the substance. Three primary means of exposure to toxic substances include inhalation, absorption, and ingestion, but others exist, such as injection or a fetus's transplacental exposure to agents in the mother's body. Often the method of exposure is critical to the type or extent of risk.

Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(2) (emphasis added).

We also note that the Third Restatement says these categories "are not 'elements' of a plaintiff's cause of action, and in some cases may not require separate proof." Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(1) (2010). According to the Third Restatement, they are merely meant to "function as devices to organize a court's analysis."

Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(1) (2010). We agree that, in some cases, separate proof might not be required for all three factors of causation. But to the extent this comment suggests that plaintiffs need not establish but-for causation by a preponderance of the evidence, we disagree. In fact, as discussed in the following section, the Third Restatement actually recognizes that plaintiffs continue to carry the burden of establishing but-for causation by a preponderance of the evidence.

B. Expert testimony is required in toxic tort cases

To provide further guidance, we agree with the Feindt court's prediction that expert testimony should be required to establish causation in toxic tort cases, just as in medical negligence cases, given the special difficulty these cases present in proving a connection between a toxic substance and the development of a specific disease with a potentially significant latency period. See Feindt, 2025 WL 1348465, at *4; Exotics Hawaii-Kona, Inc., 116 Hawai'i at 300, 172 P.3d at 1044. The Third Restatement concurs. See Reporter's Note to Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(1) ("Proof of causation often involves the admissibility of expert-witness opinions.").

That said, Defendants ask this court to require plaintiffs like Arias to provide expert testimony quantifying the exposure

level or dosage to meet their burden of production. We decline to adopt such an approach.

The Third Restatement explains that the burden of production in toxic tort cases is the same as in all civil negligence actions: "[t]he plaintiff must prove by a preponderance of the evidence that, but for the defendant's tortious conduct with respect to the toxic substance, the plaintiff would not have suffered harm." Restatement (Third) of Torts § 28, cmt. c(1). Eschewing a substantial factor analysis, it also notes that "evidence about the causal connection between toxic agents and disease is [often] derived from group-based studies in which the incidence of disease for different groups is compared to determine whether there is an increased incidence of disease among those exposed to some dose of the [toxic] agent." Reporter's Note to Restatement (Third) of Torts: Phys. & Emot. Harm § 27, cmt. g; see also Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt c(1).

Some courts have embraced "the idea that a doubling of the incidence of disease in group studies is sufficient [and required] to support proof of specific causation."⁷ See Bostic

⁷ The Third Restatement cautions that epidemiologists "do not seek to understand causation at the individual level and do not use incidence rates in group studies to determine the cause of an individual's disease." Reporter's Note to Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(4). Indeed, the authors of the Kharrazi Study included a disclaimer that "although the design of this type of epidemiologic study can only point to associations and cannot prove a causal relationship, it is possible that (continued . . .)

v. Georgia-Pac. Corp., 439 S.W.3d 332, 340, 350 (Tex. 2014) (requiring reliable expert testimony that plaintiff's exposure "more than doubled" his risk of disease, as a less demanding standard would result in "industry-wide liability" and negate plaintiff's burden to prove causation by a preponderance of the evidence); Allison v. McGhan Med. Corp., 184 F.3d 1300, 1315 n.16 (11th Cir. 1999) (applying Georgia law) (breast-implant case; relative risk of 2.0 is the threshold for an inference of specific causation; relative risk of 1.24 is insufficient); but see In re Joint E. & S. Dist. Asbestos Litig., 52 F.3d 1124 (2d Cir. 1995) (applying New York law) (holding that plaintiff could provide sufficient evidence of causation without proving a doubling in the incidence of disease); Miller v. Pfizer, Inc., 196 F.Supp.2d 1062, 1079 (D. Kan. 2002) (rejecting a threshold of 2.0 for the relative risk and recognizing that even a relative risk greater than 2.0 may be insufficient); see also Reporter's Note to Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(4) (collecting cases either accepting or rejecting the doubling of risk requirement).

Some courts require plaintiffs who cannot submit direct proof of specific causation to rule out other possible causes of

(. . . continued)

DBCP is causing an increased rate of spontaneous abortion in the exposed population through its effect on spermatogenesis." Reproductive Effects of Dibromochloropropane, 16 Israel J. Med. Sci., at 405.

their disease to increase the probability that the toxic agent at issue was responsible (also known as differential diagnosis). See Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(4) (collecting cases).

Other cases indicate that circumstantial evidence may be independently sufficient to establish specific causation where there is no direct proof or group-based studies. See Norris v. Baxter Healthcare Corp., 397 F.3d 878, 882-883 (10th Cir. 2005) (applying Colorado law) (acknowledging that epidemiology is not required to prove causation but that when a substantial body of exonerative epidemiologic evidence exists, it cannot be ignored, and other evidence proffered to prove causation); Rider v. Sandoz Pharms. Corp., 295 F.3d 1194, 1198 (11th Cir. 2002) (applying Georgia law) ("It is well-settled that while epidemiological studies may be powerful evidence of causation, the lack thereof is not fatal to a plaintiff's case.")

We decline to adopt any rigid test and instead hold that a plaintiff should offer some evidence "that he or she was exposed to the toxin at issue, including the estimated amount and duration of exposure." Lowery v. Enbridge Energy Ltd. P'ship, 500 Mich. 1034, 898 N.W.2d 906, 914-15 (Mich. 2017) (concurrency, Markman, C.J.). Such circumstantial proof must facilitate reasonable inferences of causation, not mere speculation. See Restatement (Third) of Torts: Phys. & Emot.

Harm § 28, cmt. b ("[A]ll causal determinations require inferential reasoning."). As we are unable to anticipate factual circumstances of future cases, we refuse to set hard and fast rules regarding the level of exposure required. But trial courts should exercise their gatekeeping function to ascertain whether proposed expert testimony meets the touchstones of relevance and reliability. State v. Vliet, 95 Hawai'i 94, 106, 19 P.3d 42, 54 (2001).

C. DiBartolomeis's expert report and testimony is admissible under State v. Kim

Turning to the admissibility of DiBartolomeis's expert testimony, Defendants argue that the ICA improperly applied a de novo summary judgment standard rather than the requisite abuse of discretion standard.

The circuit court excluded DiBartolomeis's expert report and testimony, saying:

His opinions are not based on any evidence of causation in fact. And causation in fact is predicate evidence that Dr. Di Bartolomeis cannot provide. That has to be provided through witnesses in the case, and there is simply no evidence that Mr. Arias was exposed.

The circuit court was requiring a certain level of exposure when it so ruled. But we conclude that DiBartolomeis's expert testimony met the touchstone of relevance and reliability, and that the ICA correctly held that the circuit court abused its discretion by excluding that evidence.

In State v. Kim, 64 Haw. 598, 604-05, 645 P.2d 1330, 1336 (1982), this court set out the rule governing the admissibility of expert testimony:

The critical inquiry with respect to expert testimony . . . is whether such testimony 'will assist the trier of fact to understand the evidence or determine a fact in issue" [HRE 702.] Generally, in order to so assist the jury an expert must base his testimony upon a sound factual foundation; any inferences or opinions must be the product of an explicable and reliable system of analysis; and such opinions must add to the common understanding of the jury. See [HRE 703.]

[(Footnotes and citations omitted).] "Therefore, the reliability prong of Kim could include the Frye test, but Kim is not necessarily limited to general acceptance in the scientific community. Under the reliability prong of Kim, it is possible that a court could also consider the scientific procedure itself, as well as other evidence of the procedure's reliability."

See State v. Montalbo, 73 Haw. 130, 138, 828 P.2d 1274, 1280 (1992) (affirming the Kim test).

Here, the issue is not whether DiBartolomeis relied on a novel methodology for which we must determine its general acceptance. Rather, the issue is whether DiBartolomeis based his opinions upon a sound factual foundation. In preparing his expert report, DiBartolomeis relied, in part, on Arias's deposition testimony and the Kharrazi Study to reach his conclusion that, to "a reasonable degree of scientific probability," Arias's exposure to DBCP was "a substantial factor in causing" his infertility and his wife's miscarriages. Because Arias's deposition testimony and the Kharrazi Study do provide circumstantial proof to facilitate a reasonable

inference as to exposure and specific causation, both pieces of evidence provide a reliable factual foundation for DiBartolomeis's expert opinion.

In addition, in summary judgment, we review the record de novo to ascertain whether there were genuine issues of material fact. See Fujimoto, 95 Hawai'i at 136, 19 P.3d at 719. DiBartolomeis's expert report notes that inhalation and potential dermal contact with DBCP likely caused the infertility issues alleged here. There was also ample evidence of inhalation and potential dermal contact that the jury could consider. Therefore, the circuit court exceeded its discretion in refusing DiBartolomeis's testimony.

D. Arias raises genuine disputes of material fact as to whether he was exposed to DBCP and whether such exposure adversely affected his health

In the proceedings below, Plaintiffs' counsel did address causation in terms of general and specific causation, stating at the summary judgment and in limine hearing that the disputed issue was specific causation, not general causation ("I don't think there's any dispute that generally speaking on a general causation level DBCP is capable of causing this kind of harm. So we're not arguing about general causation. We're arguing about specific causation."). Dow did not refute Plaintiffs' counsel's terminology and used similar language in its cert application ("In establishing specific causation, which is

whether the plaintiff was exposed to the toxic substance at a level sufficient to cause the complained-of medical condition, these courts require proof of dose." (Citation omitted)).

In its oral and written rulings, the circuit court focused on whether Arias established a prima facie case of legal causation and determined "there [wa]s no substantial evidence of [Dow's] negligence causing harm to [Arias]." It appears to have determined any exposure was not a "substantial factor."

The parties agree that the remaining issues in dispute are exposure and specific causation: that is, whether Arias was exposed to DBCP and whether such exposure caused his infertility and his wife's miscarriages. Arias must have presented reliable expert testimony, grounded in scientific literature, to establish specific causation by a preponderance of the evidence. But we have ruled in the past that,

[w]hen causation of the injury is a medical issue, as it is here, '[the] matter does not turn on the use of a particular form of words by the physicians in giving their testimony,' since it is for the trier of facts, not the medical witnesses, to make a legal determination of the question of causation. Hence, the failure of a medical witness to testify positively as to what was the cause of the injury, or his statement that the accident 'might' be or 'probably' was the cause of the injury, is merely a circumstance to be taken into consideration by the trier of facts.

Dzurik v. Tamura, 44 Haw. 327, 330, 359 P.2d 164, 165-66 (1960).

We hold that Dzurik applies to expert testimony in toxic tort cases as well. No "particular form of words" regarding causation is required. Id. An expert's statement that a toxic

substance "'might' be or 'probably' was the cause of the injury, is merely a circumstance to be taken into consideration by the trier of facts" to determine whether causation has been established. Id.

Reviewing the evidence presented at summary judgment, Plaintiffs offered sufficient evidence of exposure and adequate expert testimony on specific causation to overcome summary judgment and proceed to trial.

During his deposition, Arias testified that he rotated through eighteen farms, worked up to seven days a week over a three-year period, took little to no vacation days, and often accompanied the administrator into the fields to discuss farm operations and management, where Plaintiffs argued he potentially inhaled toxic fumes of DBCP. He also slept in warehouses, where circumstantial evidence indicates DBCP was stored. Equally significant are Del Monte's admissions that Bandeco injected a "50 [percent] diluted solution of DBCP" into each plant, covering approximately 1,400 to 1,800 banana plants per acre during two application cycles, each lasting two months. The evidence therefore also indicates possible dermal exposure and contact.

Because this appeal concerns a motion for summary judgment, where all evidence must be construed and all reasonable inferences drawn in favor of the non-moving party, Arias's

deposition testimony and Del Monte's admissions present enough circumstantial evidence to raise a genuine dispute that Arias was exposed to DBCP. A juror could reasonably infer that, since Arias worked up to seven days a week with little to no vacation days, it is more likely than not that he was present in the fields when DBCP was applied during the four-month period and inhaled the toxic fumes. See French, 105 Hawai'i at 466, 99 P.3d at 1050; Durette v. Aloha Plastic Recycling, Inc., 105 Hawai'i 490, 501, 100 P.3d 60, 71 (2004). In addition, as noted above, DiBartolomeis's expert report mentions that dermatological or skin exposure causes the infertility issues alleged here.

As for specific causation, Plaintiffs' counsel explained at the summary judgment and in limine hearing that DiBartolomeis would not offer "an ultimate finding of fact" on specific causation. Instead, Plaintiffs' counsel stated DiBartolomeis would testify that, if Arias was exposed "to DBCP at excessive levels" while in the fields, such exposure would "increase the risk of injury and be sufficient to cause the kind[s] of injur[ries]" Arias sustained, without testifying that it actually caused them.

In preparing his expert report, DiBartolomeis relied, in part, on the Kharrazi Study. While acknowledging that the Kharrazi Study was not "particularly robust," DiBartolomeis stated the presence of "a strongly significant correlation

between paternal DBCP exposure and spontaneous abortion in a small group of agricultural workers exposed for relatively short time periods is important evidence that the toxic effects of DBCP on the male reproductive system can be transferred to conception and the viability of the fetus."

What is significant about the Kharrazi Study is its finding that the husbands' exposure to DBCP more than doubled the risk of spontaneous abortions among their wives (6.6 percent pre-DBCP exposure versus 25.6 percent post-DBCP exposure). See Reproductive Effects of Dibromochloropropane, 16 Israel J. Med. Sci., at 404; Bostic, 439 S.W.3d at 349-50; Restatement (Third) of Torts: Phys. & Emot. Harm § 28, cmt. c(4).

While we decline to adopt a categorical rule requiring plaintiffs in toxic tort cases to present group-based studies demonstrating a doubling of the risk attributable to toxic exposure in the absence of direct proof of specific causation, in this case, both the Kharrazi Study and Arias's deposition testimony provided a sufficient factual and scientific basis to support DiBartolomeis's expert opinion to survive summary judgment. Both pieces of evidence would aid the jury to understand the evidence or determine a fact in issue, that is, whether Arias' exposure to DBCP more likely than not caused his infertility and his wife's miscarriages, such that there was

specific causation. Finally, pursuant to Dzurik, no particular form of words is required for causation.

IV. Conclusion

For all of these reasons, we affirm the ICA's November 6, 2025 judgment on appeal and remand to the circuit court for further proceedings consistent with this opinion.

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