

HERDING SHEEP-SHAPED CATS
(AND OTHER CREATURES): BELLWETHER
TRIAL SELECTION AS SAMPLING TO
ESTIMATE THE SETTLEMENT VALUE OF
MASS TORT MDLS

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The multidistrict litigation (MDL) process allows the nationwide consolidation of cases that share certain factual issues. Mass tort claims are often consolidated as MDLs and eventually resolved through mass settlement due to individual issues of causation and defenses that prevent class certification. Before settlement, courts and parties often select a small subset of cases to be tried in ‘bellwether trials’ that are intended to provide information about remaining claims in the MDL, including the circumstances of individual plaintiffs and the theories of liability and causation. However, due to practical limitations on the total number of cases that can be tried and the lack of common issues that predominate, bellwether trials cannot be used as a comprehensive overview of the MDL without exposing parties to the risk of inadequate settlement, which is exacerbated when cases are selected by parties. This Note proposes that the role of bellwether trials in a mass tort MDL should be limited to estimation of the settlement amount, and that the cases should be a representative sample selected through statistical methods. Through a scheme that combines simulation with random and stratified sampling, bellwether trials can provide litigants with a high-quality estimate of the total settlement value, which can in turn be allocated among plaintiffs according to extraneous information obtained outside the courts.

INTRODUCTION 1342

I. LOOKING OVER THE FLOCK: MASS TORT LITIGATION AS
ESTIMATION 1345

 A. *The Role of MDL in Mass Tort Litigation* 1345

 B. *The Legal Dilemma of MDL Courts and Its
 Implications* 1347

II. SELECTING THE BELL: WHAT BELLWETHERS DO AND
DON’T TELL YOU 1351

 A. *Approaching Mass Tort MDL Through a
 Quantitative Lens* 1352

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B. *Sample Size Imposes a Hard Limit on Quantity of Information* 1355

C. *Bellwether Trials Cannot Address Groupwide Liability or Causation* 1357

D. *Bellwether Trials May Be Used to Estimate the Lump-Sum Settlement Amount* 1360

III. SELECTING THE WETHER: ADVANTAGES OF RANDOM SAMPLING OVER SELECTION BY PARTY 1362

A. *Random Sampling Avoids Unrealistic Assumptions on Distribution of Claim Size* 1363

B. *Random Sampling Reduces the Stake in Each Trial* . . . 1367

C. *Selection by Party Does Not Provide More Information* 1368

IV. ATTACHING THE BELL: PRACTICAL CONSIDERATIONS IN USING BELLWETHER TRIALS AS SAMPLES 1370

A. *Identifying the Optimal Sample Size* 1370

B. *Minimizing the Impacts of Meritless Claims and Strategic Settlements* 1372

C. *Estimating and Allocating the Settlement Fund* 1375

CONCLUSION 1378

INTRODUCTION

A personal injury settlement based entirely on someone else’s case may sound like an elaborate lawyer joke, but such was the tale of the *General Motors Ignition Switch Litigation* plaintiffs.¹ *General Motors* involved a series of personal injury and wrongful death lawsuits against the car manufacturer for defective car parts that were installed in millions of vehicles across the United States; it would become one of the largest recalls in the country’s history.² Each claim, filed separately by 3,000 plaintiffs, was transferred to a district court for “consolidated pretrial proceedings.”³ The transferee court appointed one of the plaintiffs’ lawyers as “lead counsel . . . responsible for prosecuting . . . claims, as well as coordinating the pretrial proceedings,” and ordered

¹ *In re Gen. Motors LLC Ignition Switch Litig.*, No. 14-MD-2443, 2016 WL 1441804 (S.D.N.Y. Apr. 12, 2016).

² For a summary of the controversy surrounding the mass tort claim, see, for example, Brad Plumer, *The GM Recall Scandal of 2014*, Vox (May 11, 2015), <https://www.vox.com/2014/10/3/18073458/gm-car-recall> [<https://perma.cc/4QM3-Q2BM>].

³ *In re Gen. Motors LLC Ignition Switch Litig.*, No. 2:14-CV-04696, 2014 WL 5597269, at *2 (J.P.M.L. Oct. 22, 2014).

trials for six claims “to provide data points for settlement discussions.”⁴ After the first two claims failed due to perjury⁵ and failure to prove causation,⁶ the lead counsel settled a majority of the remaining claims based on these outcomes. A group of dissatisfied plaintiffs objected to the use of these trials to value their settlements, but the court ultimately overruled these objections despite the dispositive, idiosyncratic facts in both of the two failed claims.⁷

As frustrating as the outcome may have been to the *General Motors* plaintiffs, “one out of every two” claims filed in federal courts in 2020 was consolidated the same way: through multidistrict litigation, or MDL, a process designed to consolidate pretrial proceedings ranging from discovery to summary judgment for cases that share a common question of fact.⁸ For mass tort claims such as those of the *General Motors* plaintiffs, MDL allows for consolidation through the common fact of being injured by an allegedly tortious act by the defendant. The Judicial Panel on Multidistrict Litigation (JPML), a national committee of Article III judges,⁹ holds the power to transfer and consolidate claims based on common questions of fact, the convenience of parties and witnesses, and pretrial efficiency.¹⁰ Notwithstanding the requirement to remand the claims “at or before the conclusion of . . . pretrial proceedings” to their original courts,¹¹ transferee courts resolve most MDLs without remand, typically through an aggregate settlement of the consolidated claims.¹²

Global settlement after only two trials is no more of an anomaly. Individual decisions do not formally bind other litigants in the MDL,¹³

⁴ *In re Gen. Motors*, 2016 WL 1441804, at *2, *9.

⁵ *Id.* at *5 (describing the first plaintiff’s perjury and the subsequent voluntary dismissal of the related case).

⁶ *Id.* (describing the outcome of the trial).

⁷ *Id.* at *1–2; *see also id.* at *11 (accepting the treatment of the trials as “templates” for settlement).

⁸ Elizabeth Chamblee Burch & Abbe R. Gluck, *Plaintiffs’ Process: Civil Procedure, MDL, and a Day in Court*, 42 REV. LITIG. 225, 227 (2023). For a detailed account of the role of the MDL process as envisioned by the legislature, *see* Andrew D. Bradt, “A Radical Proposal”: *The Multidistrict Litigation Act of 1968*, 165 U. PA. L. REV. 831 (2017).

⁹ JPML is the body that creates an MDL and designates the district court to handle the proceedings. *See* Robert Klonoff, *The Judicial Panel on Multidistrict Litigation: The Virtues of Unfettered Discretion*, 89 UMKC L. REV. 1003, 1003 (2021).

¹⁰ 28 U.S.C. § 1407(a).

¹¹ *Id.*

¹² *See* ADMIN. OFF. OF THE U.S. CTS., 2023 ANNUAL REPORT OF THE DIRECTOR: JUDICIAL BUSINESS OF THE UNITED STATES COURTS (2023), <https://www.uscourts.gov/statistics-reports/judicial-panel-multidistrict-litigation-judicial-business-2023> [<https://perma.cc/EXD7-JHM6>] (2023) (showing that 2.2% of all resolved MDL claims had been remanded).

¹³ *See* *Cimino v. Raymark Indus. Inc.*, 151 F.3d 297, 319 (5th Cir. 1998) (holding that the Seventh Amendment right to jury trial requires individual adjudication of MDL claims instead of extrapolation from a sample of cases).

but courts often choose a small number of “bellwether trials,” so named in reference to the shepherding practice of attaching a bell to a sheep to lead the flock, to “lead similar cases to a resolution” by “exemplify[ing] the price of litigation and a potential settlement amount.”¹⁴ The court and parties may jointly select a handful of bellwether trials¹⁵ to provide parties with a sense of how the larger pool of cases may unfold, up to and including the jury verdict.¹⁶

However, as the *General Motors* plaintiffs discovered, no procedural safeguards ensure that bellwether trials provide reliable information. Neither the authorizing statute nor the Federal Rules of Civil Procedure includes guidelines for bellwether trials, and settlement negotiations are “private and unsupervised” without a hearing or appellate review.¹⁷ The small number of bellwether trials¹⁸ and limits on the scope of duty owed by MDL lead counsel¹⁹ further exacerbate the risk of inadequate settlements.

In order to minimize inadequate settlements from unrepresentative bellwether trials while retaining the economy of scale through aggregation, this Note proposes that the role of bellwether trials in a mass tort MDL should be limited to estimation of the settlement amount and that the cases should be a representative sample, selected through statistical methods. Part I discusses the central role of estimating the expected value of a claim in resolving a mass tort MDL. Part II argues that bellwether trials are inadequate for adjudicating multiple legal issues across the MDL but are particularly effective for the estimation of lump-sum settlement amounts. Part III proposes that random sampling by the court, with or without stratification, should replace party selection of bellwether cases for a more accurate estimation of the settlement amount. Finally, Part IV offers a general guideline for MDL courts in using bellwether trials to estimate the settlement amount, taking into account the practical concerns of litigation costs and litigant behavior.

¹⁴ Felipe Villalón, Note, *Different Bells for Different Wethers: Random Sampling and Other Bellwether Selection Trends in Products Liability MDLs*, 55 CONN. L. REV. 501, 507 (2023). The term is “derived from the ancient practice of placing a bell on a male sheep, also known as wether, that leads the rest of the flock.” *Id.*

¹⁵ See Eldon E. Fallon, *Bellwether Trials*, 89 UMKC L. REV. 951, 952–53 (2021) (describing the role of the transferee court and parties in selecting cases for bellwether trials).

¹⁶ *Id.* at 952.

¹⁷ Jonathan Steinberg, Note, *The False Promise of MDL Bellwether Reform: How Mandatory Bellwether Trial Consent Would Further Mire Multidistrict Litigation*, 96 N.Y.U. L. REV. 809, 822 (2021) (describing the lack of statutory guidance for bellwether trials).

¹⁸ See Fallon, *supra* note 15, at 953 (describing the number of bellwether trials).

¹⁹ See, e.g., *In re Gen. Motors*, 2016 WL 1441804, at *6 (questioning whether lead counsel owes fiduciary duties to MDL plaintiffs he did not represent).

I

LOOKING OVER THE FLOCK: MASS TORT LITIGATION AS ESTIMATION

Due to the difficulty of identifying common and predominant legal issues, mass tort actions cannot generally be addressed through class actions. MDLs provide an alternative device for mass resolution through relaxed requirements for aggregation and greater discretion for transferee judges with limited appellate review. However, the flexibility of the MDL procedure also makes it difficult for the transferee court to provide the parties with a fair and reasonable settlement. In Section I.A, I examine the advantages of MDL as an aggregation device for mass tort litigation to parties and to the transferee court. In Section I.B, I discuss the legal and practical concerns for MDL settlements that weaken and potentially destabilize mass resolution through MDL.

A. *The Role of MDL in Mass Tort Litigation*

Mass torts, or “tortious misconduct . . . that affect[s] large numbers of people nationwide by way of recurring patterns of injury,” produce numerous claims for damages.²⁰ Any tortious conduct ranging from defective children’s toys²¹ to a terrorist attack²² may lead to mass tort litigation. Just as the litigants in each mass tort litigation share common issues of facts and law, courts handling mass tort litigation share an overarching concern over the growing number of mass tort cases in the federal court system, as well as the downstream effects on other areas of a court’s docket.²³ Aggregation introduces the economy of scale to mass tort claims; parties may consolidate expensive pre-trial discovery and motion practices, and courts clear their dockets without individually adjudicating each claim.²⁴

²⁰ Richard A. Nagareda, *Autonomy, Peace, and Put Options in the Mass Tort Class Action*, 115 HARV. L. REV. 747, 750 (2002) (describing mass torts as “conceptual cousins of mass accidents . . . and toxic torts”).

²¹ See *In re Aqua Dots Prods. Liab. Litig.*, 654 F.3d 748, 750 (7th Cir. 2011) (describing the facts of the case and transfer through MDL).

²² See *In re Terrorist Attacks on Sept. 11, 2001*, 295 F. Supp. 2d 1377, 1378–79 (J.P.M.L. 2003) (transferring complaints against the “array of defendants who allegedly promoted, financed, sponsored or otherwise supported the acts of terrorists” due to the common questions of fact involved).

²³ In various landmark mass tort cases, judges have been motivated to use bellwether trials in part by the need to efficiently manage the federal courts’ dockets. See Alexandra D. Lahav, *Bellwether Trials*, 76 GEO. WASH. L. REV. 576, 580–89 (2008) (discussing various mass torts which utilized bellwether trials).

²⁴ See Bradt, *supra* note 8, at 835–36 (explaining the benefits of aggregation through MDL).

Despite these efficiency gains of aggregate resolution to mass tort action, classwide relief through a binding judgment is largely unavailable for mass tort litigants. Plaintiffs seeking money damages in a class action must show that their common questions predominate.²⁵ For mass tort actions, the requirement for proof of individual causation renders class action infeasible whenever plaintiffs may be exposed to different circumstances before or after exposure to the unlawful act.²⁶ Even without potential intervening causes, case law often categorically disqualifies mass tort actions from class treatment.²⁷

The legislative history of the MDL statute indicates that it was introduced at least partially in response to the proliferation of mass tort claims.²⁸ With the only requirement for consolidation being that the “actions involv[e] one or more common questions of fact,”²⁹ MDLs provide a “centralized forum . . . [as] a sort of waystation”³⁰ where class treatment is unavailable. MDLs are popular partly due to their flexibility; they can include any number of claims that involve any common questions of fact regardless of party consent,³¹ even if the claims cannot be joined or certified as a class.³² Similarly, the lack of clear statutory guidelines for transferee court authority³³ and limited availability of interlocutory appeals³⁴ provide transferee courts with

²⁵ FED. R. CIV. P. 23(b)(3). Individual variability in intervening causes and affirmative defenses often results in a finding that common questions do not predominate. *See, e.g., Yandle v. PPG Indus., Inc.*, 65 F.R.D. 566, 570–71 (E.D. Tex. 1974).

²⁶ *See* FED. R. CIV. P. 23(b)(3) advisory committee’s note (indicating that class action is “ordinarily not appropriate” for mass torts); *see, e.g., Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 623–26 (1997) (explaining that the “diverse medical conditions” of parties exposed to asbestos render class certification inappropriate).

²⁷ *See* Alexandra D. Lahav, *Mass Tort Class Actions – Past, Present, and Future*, 92 N.Y.U. L. REV. 998, 1006–08 (2017) (summarizing case law surrounding class certification for mass tort actions).

²⁸ *See generally* Andrew D. Bradt, *Something Less and Something More: MDL’s Roots as a Class Action Alternative*, 165 U. PA. L. REV. 1711, 1716 (2017) (describing the background and legislative history of the MDL statute in the context of a contemporary product liability mass tort litigation).

²⁹ 28 U.S.C. § 1407(a); *see also* *Uber Techs., Inc. v. U.S. Jud. Panel on Multidistrict Litig.*, 131 F.4th 661, 669–70 (9th Cir. 2025) (explaining that the MDL statute has no predominance requirement and does not require a “common answer,” instead requiring only that one or more common questions of fact exist).

³⁰ Fallon, *supra* note 15, at 951 (describing the role of pretrial proceedings in an MDL transferee court).

³¹ *See* 28 U.S.C. § 1407(a).

³² *See id.*; *see also* FED. R. CIV. P. 20(a)(1)(A) (requiring the “same . . . transactions or occurrences” for joinder of multiple plaintiffs).

³³ *Cf.* Abbe R. Gluck, *Unorthodox Civil Procedure: Modern Multidistrict Litigation’s Place in the Textbook Understandings of Procedure*, 165 U. PA. L. REV. 1669, 1691–93 (2017) (describing the discretion exercised by MDL courts).

³⁴ While interlocutory appeal is available on a discretionary basis for class certification, *see* FED. R. CIV. P. 23(f), the MDL statute does not include an analogous provision. *See* 28 U.S.C. § 1407.

discretion analogized to “a cross between the Wild West . . . and the Godfather movies,”³⁵ one that they can no longer enjoy once the case is treated as a class action.³⁶

Pragmatically, MDL is useful as a less restrictive alternative to class actions, due to greater judicial control over pretrial proceedings and the lack of a mechanism for judicial review of settlements.³⁷ Settling parties avoid the need to individually try remanded MDL cases and enjoy greater flexibility in settlement terms compared to class action litigants, unfettered by the risk of judicial review of class settlements or subsequent disruption by objecting class members. Transferee court involvement in the selection and administration of bellwether trials as a device of aggregate resolution reflects these practical advantages of settlement without formal, binding adjudication.³⁸

B. The Legal Dilemma of MDL Courts and Its Implications

MDL settlement of mass tort claims is controversial for exactly those reasons that make it attractive: Claims are consolidated and resolved with minimal formal requirements or appellate review.³⁹ The relaxed procedural requirements achieve greater efficiency through limiting each litigant’s ability to control their claim.⁴⁰ Unlike 23(b)(3) class actions, where individual plaintiffs who expect to benefit from the ability to control their own cases may choose to opt out,⁴¹ consolidating a case into an MDL does not require the consent of any party,⁴² and plaintiffs cannot demand that transferee courts terminate pretrial

³⁵ Martin H. Redish & Julie M. Karaba, *One Size Doesn’t Fit All: Multidistrict Litigation, Due Process, and the Dangers of Procedural Collectivism*, 95 B.U. L. REV. 109, 111 (2015) (describing the ambiguity concerning transferee court authority in statute and case law).

³⁶ Compare *In re Nat’l Prescription Opiate Litig.*, 332 F.R.D. 532, 556 (N.D. Ohio 2019) (certifying a “negotiation class” as an MDL judge), with *In re Nat’l Prescription Opiate Litig.*, 976 F.3d 664, 677 (6th Cir. 2020) (reversing the decision as lacking support in the Federal Rules).

³⁷ See FED. R. CIV. P. 23(e)(2) (requiring that a class action settlement be approved by the court after a hearing when the court finds that it is fair, reasonable, and adequate); 28 U.S.C. § 1407 (allowing the transferee court to conduct all pretrial proceedings, without requiring judicial review of settlements). For a discussion of the practical advantages of MDL as an aggregation device, see, for example, Bradt, *supra* note 28, at 1739–40.

³⁸ See Eldon E. Fallon, Jeremy T. Grabill & Robert Pitard Wynne, *Bellwether Trials in Multidistrict Litigation*, 82 TUL. L. REV. 2323, 2340 (2008) (explaining the utility of bellwether trials to judges in resolving mass tort claims).

³⁹ Thomas H.L. Forster, Note, *Out of the “Black Hole”: Toward a New Approach to MDL Procedure*, 100 TEX. L. REV. 1227, 1237 (summarizing the disagreements among academics and practitioners over the role of MDL in aggregate settlement).

⁴⁰ See *id.* at 1240–42 (describing the loss of control as an efficiency-enhancing measure).

⁴¹ See FED. R. CIV. P. 23(e)(4).

⁴² Cf. Fallon, Grabill & Wynne, *supra* note 38, at 2327–28 (explaining the requirements for consolidation into MDL).

procedures for plaintiffs to exit.⁴³ Some litigants, however, benefit from scuttling settlements, such as when plaintiffs expect to benefit from individually litigating their claims, or when defendants expect that meritorious claims would have had negative value when brought individually. In such cases, constitutional questions on individual parties' rights in an MDL provide would-be scuttlers arguments against consolidation.

Fifth Amendment due process concerns are implicated in every part of MDL from consolidation to settlement. Individual plaintiffs, once involuntarily consolidated into an MDL by a decision reviewable only through an extraordinary writ,⁴⁴ are subject to the personal jurisdiction of a remote court,⁴⁵ and to court-selected MDL leadership—whom plaintiffs do not meaningfully control—that make “strategic and tactical decisions” over their cases throughout pretrial proceedings.⁴⁶ Even though the transferee court exercises personal jurisdiction only “[b]ecause of the fiction of remand,”⁴⁷ failure to remand a case for trial is only reviewable by an extraordinary writ.⁴⁸ Otherwise, litigants are left in a “captive settlement negotiation.”⁴⁹ Unlike 23(b)(3) class action settlements, MDL settlements receive little formal judicial oversight and no opportunity for appellate review when courts do not render a formal decision to approve them.⁵⁰ Critics have raised drastic claims

⁴³ See Charles Silver & Geoffrey P. Miller, *The Quasi-Class Action Method of Managing Multi-District Litigations: Problems and a Proposal*, 63 VAND. L. REV. 107, 124 (2010) (explaining the lack of an opt-out mechanism in MDLs and its potential implications).

⁴⁴ 28 U.S.C. § 1407(e). The JPML may choose to consolidate the cases where “plaintiffs’ positions on centralization vary considerably,” and connections between individual parties and the MDL courts are not required. *In re Nat’l Prescription Opiate Litig.*, 290 F. Supp. 3d 1375, 1376–78 (J.P.M.L. 2017).

⁴⁵ *But see* Abbe R. Gluck & Elizabeth Chamblee Burch, *MDL Revolution*, 96 N.Y.U. L. REV. 1, 72 (2021) (suggesting that an MDL transferee court has no independent basis for personal jurisdiction over plaintiffs); Zachary T. Nelson, Note, *Multidistrict Litigation and Personal Jurisdiction*, 24 LEWIS & CLARK L. REV. 709, 715 (2020) (arguing that plaintiffs must be adequately represented in aggregate litigation for a court to exercise personal jurisdiction).

⁴⁶ Redish & Karaba, *supra* note 35, at 133.

⁴⁷ Gluck & Burch, *supra* note 45, at 72.

⁴⁸ 28 U.S.C. § 1407(e).

⁴⁹ Samir D. Parikh, *The New Mass Torts Bargain*, 91 FORDHAM L. REV. 447, 476 (2022) (criticizing the lack of judicial review and plaintiff control, in addition to the transferee court’s aversion to resolution by trial, as factors that coerce plaintiffs into settlement).

⁵⁰ When MDL settlements are reviewed, the judicial review relies on novel mechanisms devised by individual transferee courts, rather than a “gradual growth of doctrine.” See Christopher B. Mueller, *Taking a Second Look at MDL Product Liability Settlements: Somebody Needs to Do It*, 65 U. KAN. L. REV. 531, 543 (2017); *In re Zyprexa Prods. Liab. Litig.*, 424 F. Supp. 2d 488, 491 (E.D.N.Y. 2006) (deriving judicial review power from treating a settlement as a “quasi-class action” subject to general equitable powers of the court).

that “MDL is unconstitutional,”⁵¹ citing a lack of protective mechanisms from coercive settlements,⁵² absence of a “meaningful choice of . . . forum, . . . representation, and . . . claim development,”⁵³ and the impact of meritless claims on distributive justice in MDL proceedings.⁵⁴ Meanwhile, mass tort MDL proponents have responded to these criticisms through propositions for national jurisdiction,⁵⁵ heightened judicial review,⁵⁶ and incorporation of administrative procedures into MDL.⁵⁷

Bellwether trials in the transferee court, especially when the court formally accords them binding effects on the consolidated cases, implicate further legal challenges. The most obvious challenge is the lack of statutory authority to try cases without remand to the transferor court.⁵⁸ While remand is “improbable if not impossible,”⁵⁹ leading to propositions for statutory amendments to allow trial in transferee courts,⁶⁰ transferee courts may only hold bellwether trials through party consent or remand to transferor courts.⁶¹

⁵¹ Redish & Karaba, *supra* note 35, at 115.

⁵² *See id.* at 114–15.

⁵³ Burch & Gluck, *supra* note 8, at 231.

⁵⁴ *See* D. Theodore Rave, *Multidistrict Litigation and the Field of Dreams*, 101 TEX. L. REV. 1595, 1617–18 (2023) (suggesting that compensation for weak claims “may come out of the pockets of the plaintiffs with the strongest claims”); Douglas G. Smith, *The Myth of Settlement in MDL Proceedings*, 107 KY. L.J. 467, 490 (2019) (arguing that MDLs include “a significant fraction [of claims] that should never have been filed”).

⁵⁵ *See* Nelson, *supra* note 45, at 722.

⁵⁶ *See, e.g.,* Mueller, *supra* note 50 (arguing for expansion of collateral attack upon MDL settlements); Andrew J. Trask, *Ten Principles for Legitimizing MDLs*, 44 AM. J. TRIAL ADVOC. 113, 126–28 (2020) (arguing that “interlocutory review is an excellent way to add certainty”); L. Elizabeth Chamblee, *Unsettling Efficiency: When Non-Class Aggregation of Mass Torts Creates Second-Class Settlements*, 65 LA. L. REV. 157 (2004) (arguing that judicial review of MDL settlements is necessary to prevent collusive settlements); Amy L. Saack, Note, *Global Settlements in Non-Class MDL Mass Torts*, 21 LEWIS & CLARK L. REV. 847, 877–79 (2007) (defending the review of MDL settlements as “quasi-class actions”); Linda S. Mullenix, *Policing MDL Non-Class Settlements: Empowering Judges Through the All Writs Act*, 37 REV. LITIG. 129 (2018) (proposing the use of the All Writs Act for judicial review of MDL settlements).

⁵⁷ *See* David L. Noll, *MDL as Public Administration*, 118 MICH. L. REV. 403 (2019).

⁵⁸ *See generally* Lexecon Inc. v. Milberg Weiss Bershad Hynes & Lerach, 523 U.S. 26, 28 (1998) (holding that MDL transferee courts do not have the authority to try consolidated cases).

⁵⁹ Gluck & Burch, *supra* note 45, at 72.

⁶⁰ *See, e.g.,* Noreen Dever Arralde, Comment, *A Catalyst for Reforming Self-Transfer in Multidistrict Litigation: Lexecon, Inc. v. Milberg Weiss*, 72 ST. JOHN’S L. REV. 623 (1998) (arguing in favor of a statutory amendment to allow trial in transferee courts).

⁶¹ This “hub-and-spoke model” for bellwether trials, D. Theodore Rave & Francis E. McGovern, *A Hub-and-Spoke Model of Multidistrict Litigation*, 84 L. & CONTEMP. PROBS. 21 (2021), was employed in the opioid litigation for a small number of claims and states. *See id.* at 39; Gluck & Burch, *supra* note 45, at 27–28.

More importantly, statutory amendments are insufficient to address constitutional concerns against binding bellwether trials. When each case consolidated into MDL remains formally independent of one another for trial purposes, parties may successfully argue that they have the Seventh Amendment right to have the claim decided individually by a jury.⁶² Similarly, giving bellwether trials a preclusive effect⁶³ may raise due process concerns through virtual representation.⁶⁴ Furthermore, determination of common issues across multiple jurisdictions through binding bellwether trials has a “propensity to obfuscate and smooth over differences across state laws,” which leads to the impermissible development of federal common law over state tort claims.⁶⁵

Constitutional rights are neither absolute nor insurmountable; cost-benefit balancing is an integral part of Fifth Amendment case law, and litigants can and do waive their right to jury trial. When the defendant has no “cognizable . . . interest” in plaintiffs’ due process rights⁶⁶ and efficiency gains to the plaintiff outweigh the value of due process protections,⁶⁷ plaintiffs have little reason to choose their day in court instead of increased recovery. Defendants, likewise, are relieved of the prospect of repeatedly re-litigating identical issues.

For a transferee court, however, the balance is not theirs to strike; while some judges may think that “the notion of the individual plaintiff is totally anachronistic” when a single accident produces thousands

⁶² See *Cimino v. Raymark Indus. Inc.*, 151 F.3d 297, 311–12 (5th Cir. 1998) (holding that defendants in a mass tort action had the Seventh Amendment right to a jury trial for each tort claim). *Cimino* predates the heightened requirements for a class action imposed by *Wal-Mart Stores, Inc. v. Dukes*, 564 U.S. 338 (2011), and the tort claims were initially brought as a class action. *Cimino*, 151 F.3d at 299. Similar claims would now be consolidated in an MDL. Appellate courts are generally in agreement. See Fallon, Grabill & Wynne, *supra* note 38, at 2331.

⁶³ See Lahav, *Bellwether Trials*, *supra* note 23, at 624 (discussing the risk that plaintiffs with similar characteristics to those in bellwether cases might be subject to preclusion); see also Zachary B. Savage, Note, *Scaling Up: Implementing Issue Preclusion in Mass Tort Litigation Through Bellwether Trials*, 88 N.Y.U. L. REV. 439 (2013) (proposing issue preclusion after a set number of favorable judgments as an alternative to binding bellwethers that do not raise Seventh Amendment concerns).

⁶⁴ See Robert J. Pushaw, Jr. & Charles Silver, *The Unconstitutional Assertion of Inherent Powers in Multidistrict Litigations*, 48 BYU L. REV. 1869, 1940–43 (2023).

⁶⁵ Gluck & Burch, *supra* note 45, at 17–18.

⁶⁶ Lahav, *Bellwether Trials*, *supra* note 23, at 609.

⁶⁷ See *id.* at 610–15 (arguing that due process interests are a cost that should be balanced against the benefits of MDL); Lynn A. Baker & Andrew D. Bradt, *MDL Myths*, 101 TEX. L. REV. 1521, 1539–41 (2023) (arguing that the choice to remain in the MDL settlement is motivated by its advantages compared to individual adjudication); Forster, *supra* note 39, at 1249–50 (explaining that limited appellate review benefits the plaintiff through greater settlement speed).

of claims,⁶⁸ anachronism is an integral feature of contemporary constitutional litigation. Regardless of the MDL judge's conviction that "[p]eople aren't interested in depositions, and discovery, and trials,"⁶⁹ or in "how it happened, why it happened, who might be responsible,"⁶⁹ the court may only avoid costly appeals and reversals through the consent of all parties.⁷⁰ The consequence of relying upon party consent is that settlement decisions are made privately in a manner that resembles administrative proceedings but without the transparency or accountability of the executive branch,⁷¹ or "the development of . . . substantive tort law."⁷²

Mass tort MDLs allow the transferee court to aggregate and resolve entire sets of claims that vary widely in their components, governing law, and merits. However, the lack of a common, predominant legal issue and meaningful judicial review that allow for aggregation also render it impossible for the court to resolve MDLs through a binding judgment. As a result, any MDL settlements are vulnerable to attacks from dissatisfied parties through procedural and substantive criticisms that destabilize the settlement and reduce the benefits of aggregation to judicial economy. To reach an outcome that protects litigants from unfair settlements and the court from appeals, MDL courts must strive to improve the quality of the information they can gather through the process without sacrificing judicial economy.

II

SELECTING THE BELL: WHAT BELLWETHERS DO AND DON'T TELL YOU

Bellwether trials can help resolve MDLs through global settlements by providing a way to measure the overall value of the lump-sum settlement. In addition to determining this value, courts may use

⁶⁸ Gluck, *supra* note 33, at 1697 (quoting a federal judge's description of the significance of an individual MDL plaintiff).

⁶⁹ Transcript of Proceedings at 3–4, *In re Nat'l Prescription Opiate Litig.*, No. 17-cv-2804 (N.D. Ohio Jan. 9, 2018), ECF No. 71.

⁷⁰ Ultimately, it was the lack of consent of all parties and not the transferee judge's conviction that the Sixth Circuit determined relevant in its reversal of the transferee court. *See In re Nat'l Prescription Opiate Litig.*, 976 F.3d 664, 676–77 (6th Cir. 2020) (reversing the trial court's certification of a "negotiation class," notwithstanding the gravity of the opioid crisis).

⁷¹ *See generally* Noll, *supra* note 57, at 457–58 (arguing that MDL is better characterized as an administrative process that handles claims than as an adversarial adjudication).

⁷² Gluck & Burch, *supra* note 45, at 18.

bellwether trials to evaluate the strengths and weaknesses of arguments.⁷³ For instance, if an MDL court examines the question of individual causation through bellwether trials, it seeks to estimate whether, across the MDL, causation is supported by a preponderance of evidence.⁷⁴ As such, evaluation of any legal issue through bellwether trials is subject to the constraints applicable to anyone attempting to estimate an outcome through statistical methods. In Section II.A, I discuss how a court may treat the use of bellwether trials for mass tort MDL settlements as data collection and analysis. In Sections II.B and II.C, I discuss the limitations of bellwether trials as an information-gathering method due to numerical constraints that cannot be addressed through changes in the law. In Section II.D, I discuss how an MDL court may use bellwether trials while incorporating these constraints into their determination of the overall settlement value.

A. *Approaching Mass Tort MDL Through a Quantitative Lens*

Low barriers for MDL consolidation, combined with the lack of a mechanism to formally bind parties, often leave settlement as the only viable means of achieving global resolution. Parties typically negotiate settlements in lump-sum amounts for the entire inventory of claims represented by the plaintiffs' counsel.⁷⁵ Because the defendant does not benefit from determining how the fund may be allocated among different plaintiffs,⁷⁶ negotiation concludes with agreement upon an adequate lump-sum settlement amount without further allocation among individual plaintiffs,⁷⁷ and, unlike for class actions, without judicial review.⁷⁸

In the absence of significant disparity in bargaining power, "good settlements" use available information on the "inventories of claims [and] the law governing them" to approximate trial outcomes without

⁷³ See Fallon, Grabill & Wynne, *supra* note 38, at 2325.

⁷⁴ If the claims are sufficiently similar to one another, evidence supporting causation in an individual claim may be used to support causation for all the claims. See *Tyson Foods, Inc. v. Bouaphakeo*, 577 U.S. 442 (2016) (authorizing the use of a statistical sample to establish classwide determination of causation when predominance is satisfied).

⁷⁵ Lynn A. Baker, *Aggregate Settlements and Attorney Liability: The Evolving Landscape*, 44 *HOFSTRA L. REV.* 291, 296–97 (2015).

⁷⁶ See Lahav, *Bellwether Trials*, *supra* note 23, at 609 (arguing that "the defendant does not have a cognizable distributive justice interest").

⁷⁷ Baker, *supra* note 75, at 297 (describing the settlement agreement in *In re Vioxx Mktg., Sales Pracs. and Prods. Liab. Litig.*, 416 F. Supp. 2d 1354 (J.P.M.L. 2006) as an agreement between the parties to provide the plaintiff's counsel with a settlement that "total[s] no more than the specified dollar amount").

⁷⁸ See FED. R. CIV. P. 23(e)(2) (providing for judicial review of class action settlements).

“over- or under-valu[ing the] comprehensive settlement.”⁷⁹ In other words, good settlements represent an unbiased, reasonably precise estimate⁸⁰ of the value of all claims within the MDL. As the only cases actually tried within the MDL, bellwether trials function as samples for extrapolation on the rest of the cases; the use of bellwether trials to inform settlement, therefore, may be characterized as an exercise to obtain the expected value of a quantity that describes at least some cases within the MDL.⁸¹

Because identical tortious conduct may produce different outcomes at trial through uncertainties in both the tort itself and the fact-finding process, a court must first formalize these probabilistic processes to estimate the value of all MDL claims.⁸² The relevant evidentiary standards reflect this. Rather than deterministic findings of the defendant’s liability and the following chain of causation,⁸³ courts apply a preponderance of the evidence, or “more likely than not,” standard to describe the fact finder’s inference that they would find liability and causation in more than half of identical incidents.⁸⁴ Furthermore, when

⁷⁹ Trask, *supra* note 56, at 137 (describing the role of accurate information on settlement quality).

⁸⁰ Bias represents the degree to which an estimate systematically deviates from the true value in a specific direction, while precision represents the size of variation among successive estimates. See, e.g., JAMES H. STOCK & MARK W. WATSON, INTRODUCTION TO ECONOMETRICS 57–58 (2003).

⁸¹ An expected value is “the sum of the values of a random variable with each value multiplied by its probability of occurrence.” *Expected Value*, MERRIAM-WEBSTER.COM DICTIONARY, <https://www.merriam-webster.com/dictionary/expected%20value> [https://perma.cc/ZTM9-MNJM] (last visited May 28, 2025).

⁸² See, e.g., Byron G. Stier, *Jackpot Justice: Verdict Variability and the Mass Tort Class Action*, 80 TEMP. L. REV. 1013, 1033–43 (2007) (describing the variability in jury verdict on product liability claims for tobacco manufacturers).

⁸³ A value is deterministic if a given set of all relevant conditions produces a single outcome, while it is stochastic if the conditions produce a probability distribution of possible outcomes. See ENVIRONMENTAL MODELLING: FINDING SIMPLICITY IN COMPLEXITY 133–34 (John Wainwright & Mark Mulligan eds., 2d ed. 2013). For continuous variables, the probability distribution is described as the probability density function, where the area under the curve between two points on the function describes the probability of obtaining an outcome within a given range of values. See STOCK & WATSON, *supra* note 80, at 19. Liability is commonly described as an element that combines the duty of care and the defendant’s breach of duty, while causation is the connection between the defendant’s conduct and the plaintiff’s injury. See, e.g., Sergio J. Campos, *The Commonality of Causation*, 46 OHIO N.U. L. REV. 229, 236 (2020) (“Courts commonly group the ‘duty’ and ‘breach’ elements as a single ‘liability’ component . . .”). A plaintiff can only recover when the counsel is able to prove both liability and causation; in the context of mass tort MDLs, the need for individualized adjudication often arises from the role of individual facts in proving causation. See *id.* at 244–45 (describing examples of individualized evidence relevant for proving causation); Gluck, *supra* note 33, at 1684 (explaining that issues of causation and damages “typically require[] case-by-case evaluation”).

⁸⁴ For example, the model jury instruction for the Fifth Circuit asks the jury whether the evidence “prove[s] something is more likely so than not so.” KEVIN F. O’MALLEY, JAY E.

issues are resolved by jury trial rather than by motions for summary judgment or judgment as a matter of law from either party, the court implicitly accepts that different sets of jurors may disagree with each other and that the jury may also reasonably disagree with the court.⁸⁵ Due to this inherent variability, each individual trial would represent a single sample from a probability distribution of potential conclusions for that case.

When courts consolidate mass tort claims without predominance of common issues into an MDL, however, it is unrealistic to treat each case as if it is part of a separate probability distribution. Individual differences among plaintiffs for each mass tort claim produce consistent differences among jury findings that are more pronounced in less similar cases.⁸⁶ While some mass torts, such as industrial accidents, involve readily identifiable, discretized subgroups of cases, others involve claims and parties with similarities on a continuous scale without distinct categories.⁸⁷ Moreover, mass torts with discretized subgroups that “suffered the same injury” are more amenable to class actions and less likely to be litigated purely as an MDL.⁸⁸ In a larger number of MDLs, where individual differences among claims are described more appropriately as differences of scale rather than differences of category, each case is a sample from a probability distribution that only describes itself.⁸⁹ While multiple trials on a single case may provide independent

GRENIG, WILLIAM E. LEE & NADINE JEAN WICHERN, *FEDERAL JURY PRACTICE AND INSTRUCTIONS* 101:41 (7th ed. 2025).

⁸⁵ A “genuine dispute as to any material fact,” FED. R. CIV. P. 56(a), exists if “a reasonable jury could return a verdict for the nonmoving party.” *Anderson v. Liberty Lobby*, 477 U.S. 242, 248 (1986). Through the requirement that “all justifiable inferences are to be drawn in [the nonmovant’s] favor,” *id.* at 255, the Court implies the availability of opposing inferences. Similarly, to enter judgment as a matter of law, FED. R. CIV. P. 50(a)(1), the court must “find[] that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party.” *Id.* By limiting a directed verdict to the occasions when “there can be but one reasonable conclusion,” Rule 50 presumes that it is possible for multiple reasonable conclusions to be made from an identical set of evidence. *Anderson*, 477 U.S. at 250.

⁸⁶ For example, in a mass tort involving the potential effects of exposure to harmful substances, the underlying health conditions of each plaintiff influence the determination of a causal relationship between tortious conduct and damage to health. *See, e.g.,* Loren H. Brown, Matthew A. Holian & Arindam Ghosh, *Bellwether Trial Selection in Multi-District Litigation: Empirical Evidence in Favor of Random Selection*, 47 AKRON L. REV. 663, 686 (2014) (discussing examples of underlying health conditions that may influence potential recovery).

⁸⁷ *See id.* at 671 (discussing the variation in homogeneity among different mass tort cases).

⁸⁸ *Wal-Mart Stores, Inc. v. Dukes*, 564 U.S. 338, 349 (2011). When clearly homogeneous subgroups can be identified, issue classes are available for the resolution of the relevant issues. FED. R. CIV. P. 23(c)(4).

⁸⁹ Generally, one observation cannot be used to estimate more than one parameter, because more than one set of multiple parameters can produce the observation. For an

replicates, the cost upon litigants and the judiciary makes this unrealistic and inefficient.⁹⁰

If each claim is instead treated as deterministic, two different, unknown, underlying distributions give rise to the set of bellwether cases in an MDL: the probability that the plaintiff could recover and the amount of damages awarded if the plaintiff recovers.⁹¹ The probability of recovery, or “recoverability,” is only observable as the number of judgments for the plaintiff. The amount of damages awarded, or the monetary value of MDL claims, is the product of recoverability and the damage that the defendant will owe; the mean and variance of this distribution corresponds to the expected value of a claim within the MDL and the precision of the estimate.⁹² If bellwether trials are used to determine the overall settlement value, selected cases must provide reliable estimates of this value.

B. Sample Size Imposes a Hard Limit on Quantity of Information

An MDL court plans few bellwether trials and typically tries even fewer cases. A larger number of bellwether trials increases costs,⁹³ and the selection of cases for bellwether trials involves substantial deliberation and negotiation.⁹⁴ The “objective” is to select a “manageable number of cases,” sometimes up to thirty,⁹⁵ and the resulting pool of bellwether cases may be as small as one or two.⁹⁶ The pool of cases actually subjected to bellwether trials is even smaller because, after bellwether trials are scheduled, often under restrictive requirements

overview of this concept, see, for example, Joseph H. A. Guillaume et al., *Introductory Overview of Identifiability Analysis: A Guide to Evaluating Whether You Have the Right Type of Data for Your Modeling Purpose*, 119 ENV'T MODELLING & SOFTWARE 418 (2019).

⁹⁰ Hillel Bavli argues that the Seventh Amendment’s Reexamination Clause requires the legal fiction that different verdicts on similar claims are due to a finding of actual difference between the claims, rather than judgment variability, in other words, that the outcome of a case is deterministic. See Hillel J. Bavli, *Aggregating for Accuracy: A Closer Look at Sampling and Accuracy in Class Action Litigation*, 14 L., PROBABILITY & RISK 67, 79–80 (2015). While the Seventh Amendment probably did not anticipate aggregate litigation, constitutional implications may render the evaluation of uncertainty in jury behavior even more unrealistic.

⁹¹ Similar legal issues may describe different parts of this formulation; contributory negligence influences the probability of recovery, while comparative negligence influences the amount.

⁹² Precision is the expected variability in estimates between samples. See ISO 5725-1:2023(en), INT’L ORG. FOR STANDARDIZATION (2023), <https://www.iso.org/obp/ui/en/#iso:std:iso:5725:-1:ed-2:v1:en> [<https://perma.cc/2HX4-ZKC3>].

⁹³ See Fallon, *supra* note 15, at 955.

⁹⁴ See Brown, Holian & Ghosh, *supra* note 86, at 672–80 (describing the bellwether trial selection process by parties and the court).

⁹⁵ Fallon, *supra* note 15, at 952.

⁹⁶ See Brown, Holian & Ghosh, *supra* note 86, at 679 (summarizing the designation of a single bellwether case through pretrial order in a product liability MDL).

concerning trial logistics,⁹⁷ parties may settle their claims before all, or any, cases are tried.⁹⁸

This implicit upper limit of the number of triable cases imposes two distinct costs on information quality. The more obvious cost is that of representativeness: When there are more distinct subsets of claims than there are bellwether cases, some claims cannot be represented in bellwether trials.⁹⁹ Another constraint, however, is frequently overlooked: The number of bellwether trials limits the number of quantities that may be simultaneously estimated without sacrificing the quality of the estimate.

Statistical estimation and prediction are closely connected; estimates may be used to produce predictions, which are hypothetical observations represented by the dataset used to generate a model.¹⁰⁰ When more predictors are added, the resulting model may capture a greater amount of noise, making it less useful as a description of the dataset.¹⁰¹ This trade-off between model complexity and precision is exacerbated by a small sample size.¹⁰² The sample size imposes a ceiling on model complexity, as it is impossible to simultaneously estimate a greater number of variables than the number of observations

⁹⁷ See Fallon, *supra* note 15, at 953–54 (explaining the logistical requirements imposed by MDL courts to streamline bellwether trials).

⁹⁸ Alexandra D. Lahav, *The Case for “Trial by Formula”*, 90 TEX. L. REV. 571, 610–11 (2012) (describing settlement before bellwether trials).

⁹⁹ See, e.g., Brown, Holian & Ghosh, *supra* note 86, at 671 (acknowledging that a greater number of bellwether cases are needed for more variable claim subsets).

¹⁰⁰ Estimation is a process of choosing a function of a sample of data to describe the population from which the sample arises. STOCK & WATSON, *supra* note 80, at 66–67. For example, estimation generates a model that describes the relationship between the height and the weight of a person, which can then be used to predict the average weight of a person when their height is known. See, e.g., GERRY P. QUINN & MICHAEL J. KEOUGH, EXPERIMENTAL DESIGN AND DATA ANALYSIS FOR BIOLOGISTS 80–84 (2002).

¹⁰¹ Parameters are quantities used to describe the population for which a model is produced, see PATRICK HONNER, PAINLESS STATISTICS 179–80 (2022), while predictors are variables for which correlation to a dependent variable is evaluated in a model. QUINN & KEOUGH, *supra* note 100, at 77. A model describes the hypothetical relationship between predictors and responses, and linear models describe a response variable as the linear combination of all predictors. *Id.* A model is more complex when more predictors are included. Because superfluous complexity in a model captures the characteristics of a sample dataset that it does not share with its unobserved analogs, estimates are sensitive to minor changes in the sample and may change drastically if the model is re-run on a new sample. See KENNETH P. BURNHAM & DAVID R. ANDERSON, MODEL SELECTION AND MULTIMODEL INFERENCE 31–33 (2d ed. 2002).

¹⁰² A model for the mean of numbers obtained by rolling a twenty-sided die illustrates this. When the sample size is one, substituting one observation with another can change the estimate by as much as nineteen; when the sample size is two, the estimate can only change by 9.5.

available.¹⁰³ Furthermore, the number of observations must generally be at least ten times that of the variables to estimate.¹⁰⁴ As a result, using bellwether trials to determine the effects of specific legal issues on the value of a claim requires a drastic increase in the number of bellwether trials to be conducted. A comprehensive set of questions asked at the bellwether trial, therefore, cannot produce comprehensive knowledge about the MDL. Because the value of a claim is a function of the factual and legal conclusions implicated in the case, an estimate of the lump-sum settlement value depends upon groupwide legal or factual conclusions. This non-independence subjects MDL courts to the constraints imposed by sample size; fewer than a dozen bellwether trials are barely sufficient to reliably estimate the lump-sum settlement value, and additional issues cannot be resolved on an aggregate basis without rendering the estimated settlement value highly imprecise. An effective MDL judge, therefore, should ask themselves before bellwether trials: Which information should they seek?

C. Bellwether Trials Cannot Address Groupwide Liability or Causation

MDL settlements resolve claims on a groupwide basis without formal adjudication over substantive issues and without judicial review of their terms. However, global adjudication of legal issues through bellwether trials requires both that there are global issues and that the trials provide sufficient information to describe the MDL. The lack of a process for formal aggregate adjudication or judicial review limits the development of case law to addressing each claim at an individual level,¹⁰⁵ and the Fifth and Seventh Amendments are the primary legal barriers between bellwether trials and the development of mass tort case law. Even when those constitutional barriers are removed, an additional empirical barrier remains, insurmountable by any hypothetical Twenty-Eighth Amendment.

¹⁰³ For linear models, this result can be illustrated through matrix operations. For a relatively non-technical discussion of the linear algebra behind model estimation, see, for example, QUINN & KEOUGH, *supra* note 100, at 120.

¹⁰⁴ Simulation-based methods are available to determine the sample size necessary to detect a given effect size at a given confidence level. See *infra* Section IV.A. The “10 events per variable rule of thumb,” which states that at least ten observations must be given for each coefficient value estimated, is derived from some of these simulations and has been widely adopted due to its simplicity. See Richard D. Riley et al., *Calculating the Sample Size Required for Developing a Clinical Prediction Model*, 368 BMJ 441, 442 (2020) (describing the “10 events per variable rule of thumb,” its origin, and some alternative formulations).

¹⁰⁵ See *supra* Section I.B.

The lack of a coherent body of law, in addition to judicial efficiency, motivates transferee courts to seek global adjudication on common factual or legal issues. Especially when the court emphasizes the need to screen out “patently worthless claims”¹⁰⁶ in advance, they explore methods for evaluating legal issues and theories applicable across all cases.¹⁰⁷ Even without formal binding effects, the court’s attitude toward specific legal theories in bellwether cases may effectively function as a signal on the court’s future disposition.¹⁰⁸

Appellate courts have generally held that transferee courts may not give binding effects to bellwether trials, referring to the due process rights of individual litigants.¹⁰⁹ However, binding bellwether trials, even with consent of parties,¹¹⁰ are costly; they raise the stakes of bellwether trials and incentivize greater expenses than trials on remand, with the cost of reliance on inaccurate information imposed upon absent parties.¹¹¹ Even more importantly, bellwether trials in an MDL cannot provide the necessary information to achieve the “herculean task”¹¹² of resolving groupwide liability and causation.

In class actions where the factfinder determines that the evidence obtained through statistical sampling supports an identical claim filed individually, they may determine whether the information is relevant to an individual class member and then extrapolate the determination to the class through predominance of common issues.¹¹³ As far as the courts are concerned, the verdict is for a single claim for all plaintiffs.

¹⁰⁶ Trask, *supra* note 56, at 120.

¹⁰⁷ See, e.g., *McManaway v. KBR, Inc.*, 265 F.R.D. 384, 385 (S.D. Ind. 2009) (using a case management order for plaintiffs to provide a set of basic relevant facts); *In re Fosamax Prods. Liab. Litig.*, No. 06 MD 1789, 2012 WL 5877418, at *2 (S.D.N.Y. Nov. 20, 2012) (describing the factors relevant for issuing case management orders); Nora F. Engstrom, *The Lessons of Lone Pine*, 129 YALE L.J. 2, 53–54 (2019) (summarizing the case law for such case management orders); Gluck, *supra* note 33, at 1689 (quoting a transferee judge’s description of fact sheets as an example of procedures for judicial efficiency); Gluck & Burch, *supra* note 45, at 238–39 (describing selective remand to resolve legal issues as a case management device).

¹⁰⁸ See Fallon, Grabill & Wynne, *supra* note 38, at 2325 (explaining the value of bellwether trials in “evaluating the strengths and weaknesses of [parties’] arguments”).

¹⁰⁹ See *supra* Section I.B.; *Cimino v. Raymark Indus. Inc.*, 151 F.3d 297, 318–19 (5th Cir. 1998) (holding that parties in a mass tort action have a Seventh Amendment right to individually determine causation through jury trial); Fallon, Grabill & Wynne, *supra* note 38, at 2331 n.27 (summarizing the case law on binding bellwether trials).

¹¹⁰ See *Silivanch v. Celebrity Cruises, Inc.*, 333 F.3d 355, 359 (2d Cir. 2003) (describing an agreement to give binding effect to bellwether trials for specific issues).

¹¹¹ See *infra* Section III.B; Fallon, *supra* note 15, at 955 (explaining the role of bellwether trial costs).

¹¹² Jay Tidmarsh, *Resurrecting Trial by Statistics*, 99 MINN. L. REV. 1459, 1459 (2015).

¹¹³ See *Tyson Foods, Inc. v. Bouaphakeo*, 577 U.S. 442, 442 (2016) (upholding the use of statistical evidence when “each class member could have relied on that sample to establish liability . . . [in] an individual suit”).

While preference for specific “substantive policies” may have a role,¹¹⁴ the distinctive feature of such a claim is that the plaintiffs are “similarly situated,” and eligible for a class treatment absent a statutory bar.¹¹⁵

The adjudication of individual liability or causation through bellwether trials follows a fundamentally different scenario from “statistical adjudication” in class actions. In mass tort MDLs that do not meet the predominance requirement for class actions, shared issues concerning the defendant’s liability or causation for each claim do not predominate, and it is not possible to adjudicate across all claims by a single verdict on a single case.

When an evidentiary standard is understood as the conditional probability threshold that the defendant is liable given the available evidence,¹¹⁶ this distinction between an MDL and a class action renders bellwether trials entirely uninformative for determining the defendant’s liability or causation to an average litigant. The jury verdict collapses the underlying conditional probability into a binary; whenever this conditional probability is above 0.5, the jury determines that the defendant is liable. If the claim for each plaintiff is sufficiently similar, having a single jury verdict supporting liability also supports the conclusion that every other jury verdict will find the defendant liable. For MDL plaintiffs, however, it is possible that the defendant will not be liable on average despite a majority of bellwether trials delivering a verdict in favor of liability, and vice versa.¹¹⁷ Bellwether trials, as a result, simply do not provide any information to produce a finding of liability across the MDL as a whole.

This understanding of the evidentiary standard as a probability threshold is controversial due to a number of anomalous outcomes associated with it. One such outcome, known as the “conjunction paradox,” postulates that a claim with multiple elements cannot be supported by a proof of all its elements by the same evidentiary standard.¹¹⁸ Although

¹¹⁴ See Robert G. Bone, *Tyson Foods and the Future of Statistical Adjudication*, 95 N.C. L. REV. 607, 639–43 (2017) (arguing that the Supreme Court authorized statistical adjudication where substantive policy concerns support the collective redress of negative-value suits).

¹¹⁵ See *Tyson Foods*, 577 U.S. at 458.

¹¹⁶ The language of model jury instructions that direct the jury to determine whether “what [plaintiff] claims is more likely so than not so,” or “more probably true than not true,” O’MALLEY, GREINIG & LEE, *supra* note 84, suggests that courts tend to understand the preponderance of evidence standard as a conditional probability threshold of 0.5.

¹¹⁷ A straightforward example is of a group of ten plaintiffs facing individual trials. If the jury determines that the probability of the defendant being liable is 0.501 for six plaintiffs and 0.001 for four plaintiffs, a majority of jury verdicts will support liability, while the defendant is, on average, not liable.

¹¹⁸ This is because the probability for the truth of the claim, as a conjunction of all elements, is the product of the corresponding probability for each element. See Michael S. Pardo, *The Paradoxes of Legal Proof: A Critical Guide*, 99 B.U. L. REV. 233, 267–69 (2019).

criticized as “clever hypotheticals that . . . bear virtually no relationship to any extant legal system,”¹¹⁹ a few alternative formulations have been proposed. The standard of proof may be interpreted as an “explanatory” threshold where the factfinder “compar[es] explanations as a whole . . . without the need to calculate individual probabilities.”¹²⁰ Another formulation argues that evidentiary standards cannot be described in terms of probabilities because the factfinder may not be strongly convinced by any particular explanation.¹²¹

Nonetheless, alternative conceptualization of the evidentiary standard does little to support the use of binding bellwether trials to determine liability. If, following the “explanatory account,”¹²² the factfinder is required to compare the entire scenarios presented by the plaintiff and the defendant for each particular case, MDL mass tort claims without similarly situated plaintiffs would not be comparable, rendering the exercise meaningless. Similarly, adding a third component of “uncommitted belief” to the possibilities that the defendant may or may not be liable¹²³ does little to inform the court on whether, across all the claims, the jury’s “belief” in liability would be greater than that in the lack thereof.

D. Bellwether Trials May be Used to Estimate the Lump-Sum Settlement Amount

Despite the doctrinal objections to bellwether trials,¹²⁴ and in addition to their limited utility in deciding common questions of fact across the board,¹²⁵ bellwether trials “provid[e] information on the value of the cases as reflected by the jury verdicts.”¹²⁶ Tort claims may be valued as property rights; monetary values can be averaged across

¹¹⁹ Ronald J. Allen & Christopher K. Smiciklas, *The Law's Aversion to Naked Statistics and Other Mistakes*, 28 *LEGAL THEORY* 179, 183 (2022).

¹²⁰ Pardo, *supra* note 118, at 280.

¹²¹ Kevin M. Clermont, *Staying Faithful to the Standards of Proof*, 104 *CORNELL L. REV.* 1457, 1461 (2019).

¹²² Pardo, *supra* note 118, at 280.

¹²³ See Clermont, *supra* note 121, at 1475–79 (describing the “belief function” as a formulation that allows for “multivalent logic,” postulating that some parts of a person’s belief may be uncommitted to any possibility).

¹²⁴ See *supra* Section I.B.

¹²⁵ Any “common issues,” Alexandra D. Lahav, *A Primer on Bellwether Trials*, 37 *REV. LITIG.* 185, 187 (2018), may potentially be given non-mutual preclusive effect. See *Parklane Hosiery Co. v. Shore*, 439 U.S. 322 (1979); Lahav, *supra* note 23, at 624. Practically, however, the questions relevant and dispositive across the MDL are likely to qualify for certification as an issue class.

¹²⁶ Fallon, Grabill & Wynne, *supra* note 38, at 2337 (arguing in favor of non-binding bellwether trials as a source of information).

the board, even when they arise from highly dissimilar circumstances.¹²⁷ Every plaintiff in an MDL may be just as unique as every MDL,¹²⁸ but a dollar recovered by one plaintiff is interchangeable with that by any other plaintiff.

Mass tort MDLs cannot be settled by first identifying a typical claim and then evaluating its likely outcome. Settlement negotiations for individual tort claims occur around party expectations of their “going rates,” obtained by comparison with other similar, previously resolved claims.¹²⁹ To achieve this, parties must translate the factual and legal issues of the claim into an expected outcome.¹³⁰ When the certification of a settlement class does not occur at this stage, shared factual and legal issues do not predominate. Without a set of shared issues against which mass tort claims can be assessed, there is no typical claim for the parties to evaluate.

When aggregate settlements are negotiated between the parties, however, parties do not negotiate to settle any individual claimant’s case.¹³¹ To the defendant, aggregate settlement offers provide only the maximum settlement amount, and the option for the defendant to “walk away” if the plaintiff’s counsel fails to convince a given proportion of their clients to opt in to the settlement.¹³² Because entirely different claims may still have an identical monetary value, it is immaterial that common issues do not predominate. As long as the bellwether cases are chosen to estimate the average monetary value of an MDL plaintiff’s claim, the parties can estimate this value without addressing or identifying common issues.

Because individual cases are not settled when bellwether trials are used as samples to estimate the overall size of a settlement fund, bellwether trials used in this manner do not formally bind any parties. For the hypothetical plaintiff with an average claim, the fairness of a settlement relies on accurate evaluation of the settlement fund, to which a high-quality estimate directly contributes. For plaintiffs with high-value claims, discontinuing the use of bellwether trials to evaluate

¹²⁷ See D. Theodore Rave, *Tort Claims as Property Rights*, 69 DEPAUL L. REV. 587, 587–88 (2020) (arguing that tort claims treated as property facilitate their aggregation and settlement through private ordering).

¹²⁸ See Trask, *supra* note 56, at 115 (criticizing the “firm conviction that every MDL is unique”).

¹²⁹ Nora Freeman Engstrom, *Run-of-the-Mill Justice*, 22 GEO. J. LEGAL ETHICS 1485, 1532–33 (2009) (describing the heuristics used by parties for claim valuation in settlement).

¹³⁰ See Lahav, *supra* note 98, at 589–90 (describing a lawyer’s valuation of settlements as comparison between a set of similar claims).

¹³¹ See Baker, *supra* note 75, at 297 (describing the process of a typical aggregate settlement negotiation).

¹³² *Id.* (describing the terms of a typical aggregate settlement agreement).

common issues—and, in turn, to create an allocation formula for a settlement fund—reduces the risk of their individual claims being dictated by imprecise estimation. Even when the large volume of claims aggregated through an MDL, in addition to the “culture of transferee courts,”¹³³ incentivizes transferee courts to prioritize judicial efficiency in favor of settlement, the possibility of global settlement may outweigh distributive justice concerns for plaintiffs with high-value claims. Despite the criticism that MDL judges tend to “bully the [plaintiffs] into settlement,”¹³⁴ the potential to recover for a greater volume of claims enhances the deterrence function of mass tort litigation. It may even be the case that this tendency does not, as a whole, compromise high-value claimants; reduced litigation costs and delay may be sufficient to “mitigate[] discrepancies between a claim’s true value and the claimant’s net settlement amount.”¹³⁵

A lump-sum settlement in a mass tort MDL aggregates the claims by treating each claim as a dollar value that is added to all other such numbers to arrive at the final settlement amount. Through this treatment, the claims become a population of interchangeable values, and the quality of the population may be estimated through statistical methods. When bellwether trials are treated as samples from which inference on the population may be drawn, it becomes clear that bellwether trials are most useful for estimating the lump sum settlement amount, while the utility of bellwether trials in other contexts is limited. Taking this into consideration, MDL courts should use a sampling procedure that generates more accurate settlement values.

III

SELECTING THE WETHER: ADVANTAGES OF RANDOM SAMPLING OVER SELECTION BY PARTY

Input from counsel in selecting cases for bellwether trial is standard practice for transferee judges; courts communicate with parties in all “sequential steps” for case selection: the categorization of cases into subgroups; selection of cases to be subjected to discovery; and the

¹³³ Gluck, *supra* note 33, at 1673 (quoting a federal judge’s perception of a tendency in transferee courts to avoid remand).

¹³⁴ Gluck & Burch, *supra* note 45, at 6.

¹³⁵ See, e.g., Baker & Bradt, *supra* note 67, at 1545.

trial selection process.¹³⁶ Even in larger MDLs with more than 10,000 claims, transferee courts routinely receive input from the parties after an initial stage of random sampling.¹³⁷ While this practice is partly motivated by the desire to enhance perceived legitimacy by increased party involvement,¹³⁸ it also incorporates the notion of representative sampling to enhance the efficiency of the sampling procedure. However, as I discuss in Section III.A, the assumption that claim sizes are symmetrically distributed and that party behavior will not bias the outcomes is unrealistic, as existing empirical research on tort claims reveals. This practice therefore produces inaccurate estimates of the aggregate settlement. Furthermore, as I discuss in Section III.B, allowing litigants to select bellwether cases results in outsized litigation costs and strategic behavior that creates even greater bias in the estimate. Additionally, as I discuss in Section III.C, this method does not provide the court with any countervailing benefits on data quality. As a result, random sampling protects litigants from an unfair settlement procedure that, depending on the underlying set of claims, disproportionately favors either party when replicated over multiple MDLs.

A. *Random Sampling Avoids Unrealistic Assumptions on Distribution of Claim Size*

When parties select non-representative samples for bellwether trials, they are incentivized to select the cases most favorable to their position.¹³⁹ In a normally distributed population, a sampling scheme that selects extreme values is more efficient than pure random sampling.¹⁴⁰ Similarly, when “the outcome distribution does not have values that are too extreme,” a sampling scheme that maximizes variability

¹³⁶ Fallon, *supra* note 15, at 952–53; *see also* Villalón, *supra* note 14, at 514–20 (describing the involvement of counsel in selecting bellwether trials across different sizes of MDLs).

¹³⁷ *Id.*

¹³⁸ Brown, Holian & Ghosh, *supra* note 86, at 678.

¹³⁹ *Id.* at 687 (describing the discrepancy between randomly selected claims and claims selected by the plaintiffs’ counsel in a mass tort MDL). While such an inventory of all claims in an MDL is seldom available, this incentive has been recognized both in arguments supporting, *see* Edward K. Cheng, *When 10 Trials Are Better than 1000: An Evidentiary Perspective on Trial Sampling*, 160 U. PA. L. REV. 955, 963–64 (2012) (defending case selection by parties as “extreme value sampling”), and opposing, *see* Villalón, *supra* note 14, at 517 (describing the opposition to selection by parties raised in a mass tort MDL), selection by parties, as well as by an appellate court. *In re Chevron U.S.A. Inc.*, 109 F.3d 1016, 1019 (5th Cir. 1997) (noting that selection by parties produces a “trial of [] the ‘best’ and [] the ‘worst’ cases contained in the universe of claims”).

¹⁴⁰ *See* Harry Zvi Davis, Hershey H. Friedman & Jianming Ye, *An Ancient Sampling Technique: Flawed, Surprisingly Good, or Optimal?*, 24 CHANCE 19, 20 (2021) (illustrating the benefits of a sampling scheme that maximizes variability within the sample).

outperforms pure random sampling.¹⁴¹ An MDL court that allows the parties to select bellwether trials, thus, relies on the “assum[ption] that the parties have an idea of the scope of all the plaintiffs’ cases prior to selection,”¹⁴² that the parties are reasonably capable of identifying the strongest and weakest cases, and that the underlying population distribution is relatively symmetrical with few extreme values.

However, selecting the strongest and weakest cases among thousands of unresolved claims is not analogous to choosing the largest and smallest among 20, 50, or 1,000 eggs. When the sampling strategy is based on assumptions that do not match the characteristics of the population distribution, non-random sampling produces imprecise and inaccurate results.¹⁴³ At least two of the requisite assumptions for extreme value sampling are inappropriate in the context of a mass tort MDL: Identifying the strongest and weakest cases is likely to be complicated and prone to error, and the underlying population distribution is almost certain to be highly asymmetrical.

When bellwether cases are selected after extensive discovery,¹⁴⁴ parties can typically assess the distribution of potentially relevant variables.¹⁴⁵ However, although these variables may be correlated to the claim’s expected value, the actual value of a claim is unknown until judgment is rendered for the bellwether trial. Parties can only predict which claims are likely to be valuable, based on a speculative model that incorporates the variables expected to be associated with the outcome.¹⁴⁶ The actual outcomes may instead be overwhelmingly in favor of either party.¹⁴⁷ Even if parties succeed in predicting the

¹⁴¹ Loan R. van Hoeven, Mart P. Janssen, Kit C.B. Roes & Hendrik Koffijberg, *Aiming for a Representative Sample: Simulating Random Versus Purposive Strategies for Hospital Selection*, 15 BMC MED. RSCH. METHODOLOGY Art. 90, at 7 (2015).

¹⁴² Villalón, *supra* note 14, at 519.

¹⁴³ See, e.g., Cécile H. Albert, Nigel G. Yoccoz, Thomas C. Edwards Jr., Catherine H. Graham, Niklaus E. Zimmermann and Wilfried Thuiller, *Sampling in Ecology and Evolution – Bridging the Gap Between Theory and Practice*, 33(6) ECOGRAPHY 1028, 1030 (2010) (describing common forms of inaccurate assumptions and how they produce imprecise and inaccurate results).

¹⁴⁴ Fallon, *supra* note 15, at 952–53 (describing the information that can be gathered through discovery prior to selection of bellwether cases).

¹⁴⁵ Such information may be provided by each plaintiff in the form of fact sheets. See, e.g., Engstrom, *supra* note 107, at 57–60; Villalón, *supra* note 14, at 523.

¹⁴⁶ For example, the lead counsel for a product liability claim for drugs may select bellwether plaintiffs without underlying health problems. See Brown, Holian & Ghosh, *supra* note 86, at 687–89 (describing the group of bellwether plaintiffs selected by lead counsel in two mass tort MDLs involving drugs).

¹⁴⁷ See *supra* note 6 and accompanying text (describing the unfavorable outcome of bellwether trials selected by plaintiffs’ counsel); *In re Roundup Prods. Liab. Litig.*, 544 F. Supp. 3d 950, 956 (N.D. Cal. 2021) (describing the decision to halt further bellwether trials after the plaintiff prevailed in two initial bellwether trials).

disposition of bellwether trials, they may not be capable of predicting the value of a claim in a reasonably consistent manner. Most notably, a claim may fail due to a determination of no liability, or no individual causation; if a party predicts that some claims simultaneously have high expected monetary values and high prediction errors, choosing the claims with highest overall expected values may result in imprecise estimates.

Additionally, symmetry of the underlying population distribution is a highly unrealistic assumption. In tort litigation, the minimum judgment value for a tort claim is zero, where a plaintiff suffers injuries but fails to recover damages; “negative value” claims only occur due to litigation costs. At the same time, there is no clear upper boundary of the value of the potential tort claim.¹⁴⁸ It is therefore likely that the distribution of claim values will be right-skewed, with the mean value of a claim larger than the median.¹⁴⁹ This effect is even greater when the possibility of the jury finding no liability or causation is taken into account; any such verdict produces a zero-dollar judgment and further inflates the proportion of zero-dollar judgments. The interaction of multiple tort claims that are not independent of each other further complicates the determination of whether the necessary distributional assumptions had been met.¹⁵⁰ Especially for MDLs that address novel

¹⁴⁸ For a given magnitude of injury, the Supreme Court imposes an upper limit on the maximum amount of recoverable damages. See *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 416 (2003) (imposing a due process limit on punitive damages). However, in a mass tort litigation, the degrees of injury suffered by each plaintiff differ from one another.

¹⁴⁹ Because mass tort claims are generally not tried or settled individually, it is not feasible to examine the distribution of judgment values. However, studies on individual tort claims indicate that log transformation is often necessary to obtain approximate normality of claim values. See generally Brian Ostrom, David Rottman & Roger Hanson, *What Are Tort Awards Really Like? The Untold Story from the State Courts*, 14 L. & POL’Y 77, 88 (1992); Theodore Eisenberg, Neil LaFountain, Brian Ostrom, David Rottman & Martin T. Wells, *Juries, Judges, and Punitive Damages: An Empirical Study*, 87 CORNELL L. REV. 743, 752–54 (2002); Joni Hersch & W. Kip Viscusi, *Punitive Damages: How Judges and Juries Perform*, 33 J. LEGAL STUD. 1, 4 (2004); Theodore Eisenberg, Thomas Eisenberg, Martin T. Wells & Min Zhang, *Addressing the Zeros Problem: Regression Models for Outcomes with a Large Proportion of Zeros, with an Application to Trial Outcomes*, 12 J. EMPIRICAL LEGAL STUD. 161, 163 (2015); Yun-chien Chang, Theodore Eisenberg, Tsung Hsien Li & Martin T. Wells, *Pain and Suffering Damages in Personal Injury Cases: An Empirical Study*, 14 J. EMPIRICAL LEGAL STUD. 199, 210–11, 211 n.25 (2017). See also Deborah Jones Merritt & Kathryn Ann Barry, *Is the Tort System in Crisis? New Empirical Evidence*, 60 OHIO ST. L. J. 315, 334–35, 353 (1999) (showing right-skewed distributions for product liability and medical malpractice claims). Histograms for at least two datasets demonstrate that claim values are right-skewed even when log-transformed. Eisenberg, Eisenberg, Wells & Zhang, *supra* at 173 fig.1, 175 fig.2.

¹⁵⁰ Two variables are not independent if the value of one variable changes when that of the other variable increases or decreases. QUINN & KEOUGH, *supra* note 100, at 93–94. If the plaintiff must prove the same element for two different tort claims, both claims fail if the plaintiff cannot prove the shared element, resulting in non-independence.

claims and theories without well-developed case law, selection by parties may introduce biases in the outcome that are difficult to predict.¹⁵¹

When the underlying distribution of claim values is unknown, and when the parties cannot be expected to identify the relevant variables for a more complicated sampling scheme, random sampling should be used to select bellwether cases. Although random sampling is less efficient than alternative schemes that reflect the population distribution,¹⁵² its behavior is mathematically well-understood. The Central Limit Theorem, applicable to any sufficiently large set of random samples from a distribution with independent elements,¹⁵³ allows the court to predict the performance of its sampling scheme from the variability within, and size of, the sample without relying on untested assumptions.

This is not to say that random sampling will yield the highest-quality information in all circumstances. For mass tort cases involving the kinds of tortious conduct and injuries that have been extensively studied and litigated, the court and the parties are more likely to have a greater understanding of the underlying distribution of claim values.¹⁵⁴ This information can, in turn, be used to identify a more efficient sampling scheme. Similarly, if the court and the parties are able to support multiple rounds of discovery and bellwether trials, they may use the information from previous rounds of bellwether trials to design non-random sampling schemes for subsequent rounds.¹⁵⁵ However, even in these cases, the court should randomly select bellwether cases from each

¹⁵¹ For examples of MDLs brought to address unprecedented mass tort claims, see, for example, Gluck & Burch, *supra* note 45, at 25–29 (describing public nuisance claims for the health impacts of opioid painkillers); Lahav, *supra* note 98, at 610–11 (describing toxic tort claims for exposure to harmful chemicals following the 9/11 terrorist attack).

¹⁵² See Davis, Friedman & Ye, *supra* note 140, at 20.

¹⁵³ This condition holds when the sample is collected with replacement. The court selects cases for bellwether trial without replacement, resulting in underestimation of the standard error of the sample mean. While a large volume of literature on probability theory delineates the conditions in which the sample mean is approximately normally distributed despite the independence assumption being violated, a comprehensive review is beyond the scope of this Note. Meanwhile, the simplest solution to this problem in a relatively small MDL is for the court to sample with replacement; that is, try one fewer case if an identical random number is selected twice. For a more detailed account of the Central Limit Theorem, see *infra* Section IV.A.

¹⁵⁴ See Brown, Holian & Ghosh, *supra* note 86, at 686 (using information derived in a previous MDL to examine the sampling scheme for two MDLs involving similar tort claims).

¹⁵⁵ Non-random sampling designs divide the population into subgroups according to distinctive features, and sample randomly from each subgroup. QUINN & KEOUGH, *supra* note 100, at 156. For examples of MDL courts employing a similar principle, see, for example, *Abrams v. Ciba Specialty Chems. Corp.*, No. 1:2008cv00068, 2008 WL 4710724, at *5 (S.D. Ala. Oct. 23, 2008) (subgroups based on levels of exposure); *In re Yasmin & Yaz (Drospirenone) Mktg., Sales Prac. & Prods. Liab. Litig.*, MDL No. 2100, 2010 WL 4024778, at *2 (S.D. Ill. Oct. 13, 2010) (subgroups based on types of injury).

subgroup; sampling from extreme values will only be representative if the judgment values of each subgroup are symmetrically distributed with relatively few outliers.¹⁵⁶ As no formal appellate review process exists for case management orders selecting bellwether cases, it is unlikely that this will result in prolonged litigation.

B. *Random Sampling Reduces the Stake in Each Trial*

When bellwether trials “effectively order [the] cases from best to worst,”¹⁵⁷ each party selects the cases corresponding to the upper and lower bounds of the potential settlement. This choice inflates the stakes for each bellwether trial, which results both in outsized litigation costs for the parties and in reduced value of bellwether trials as a device “to understand the costs and burdens that will ensue as a result of the litigation.”¹⁵⁸

More importantly, the high stakes for each bellwether case incentivize strategic behavior to avoid unfavorable jury verdicts. When defendants identify cases that are especially favorable toward the plaintiff, they may completely circumvent bellwether trials through confidential settlements at a higher value than the expected judgment.¹⁵⁹ The effect of strategic confidential settlements is exacerbated by the uncertainty in the law around the MDL leadership.¹⁶⁰ When an MDL leader also represents the bellwether plaintiff, they may be compelled to accept a confidential settlement offer, even if the settlement harms MDL plaintiffs as a whole; although MDL leadership owes some duty to all plaintiffs, their primary duty is to the clients they represent, and the leadership appointment orders do not provide any further clarification.¹⁶¹

MDL courts do not currently have an effective mechanism to restrict voluntary dismissals or settlements; while the transferee judge may be able to invoke “inherent judicial authority” to require all parties

¹⁵⁶ See van Hoeven, Janssen, Roes & Koffijberg, *supra* note 141, at 7 (describing the conditions in which a sampling scheme maximizing the variance within the sample is more efficient than the alternatives).

¹⁵⁷ Cheng, *supra* note 139, at 965.

¹⁵⁸ Brown, Holian & Ghosh, *supra* note 86, at 669.

¹⁵⁹ See Thomas Sekula, Note, *Selective Settlement and the Integrity of the Bellwether Process*, 97 TEX. L. REV. 859, 863–66 (2019) (describing two examples of strategic, confidential settlements by defendants to avoid jury verdicts on unfavorable cases); see also Robert Adams, Brent Dwerlkotte, Patrick Stueve & Abby McClellan, *Bellwether Trials*, 89 UMKC L. REV. 937, 941–42 (2021) (explaining the possibility of “manipulation of the bellwether process” through settlement).

¹⁶⁰ This was a major issue raised by the GM Ignition Switch plaintiffs. See *supra* note 4 and accompanying text.

¹⁶¹ See Noll, *supra* note 57, at 461–62.

to try the bellwether cases,¹⁶² aggressive management by transferee courts has been widely criticized.¹⁶³ It is also unlikely that an amendment in the Federal Rules of Civil Procedure would empower the transferee court to require trial for bellwether plaintiffs; a requirement to waive the opportunity for voluntary dismissal will almost certainly “abridge, enlarge, or modify” a substantive right, and is not likely to be available in a federal court sitting in diversity.¹⁶⁴

When a party believes that a bellwether case is anomalous, it will attempt to avoid jury verdicts through voluntary dismissal; randomly selected bellwether trials will not on their own be sufficient to eliminate this problem. However, to the extent that this problem will continue to exist, randomly selected bellwether trials are more likely to fulfill their informational purposes without excessive cost to the parties and the court, either from outsized investments for trial or the need to select additional cases after initial settlements and voluntary dismissals.

C. *Selection by Party Does Not Provide More Information*

While the defendant does not have a stake in the allocation of the settlement fund once it is paid, individual plaintiffs have an interest in recovery that approximates the value of their claim. To distribute the settlement fund among claimants, plaintiffs must determine which facts of each claim are relevant to the value of the claim. The settlement grid allocates funds according to specific facts likely to affect the expected value of a claim and can be described as a sum of monetary values attributed to each of those facts. Such a grid reflects the litigants’ model of claim value,¹⁶⁵ with the judgment value as a dependent variable and relevant facts as independent variables.¹⁶⁶

If the court intends to estimate the weights given to each disputed fact of the case through bellwether trials, party participation may contribute to devising a more efficient scheme than pure random sampling; their experience as “repeat players” can inform non-random

¹⁶² Sekula, *supra* note 159, at 869.

¹⁶³ See *supra* Section I.B.

¹⁶⁴ See Rules Enabling Act, 28 U.S.C. § 2072(b) (setting forth limitations on the Federal Rules of Civil Procedure); Redish & Karaba, *supra* note 35, at 132–33 (arguing that losing control of the claim implicates the plaintiff’s substantive property rights).

¹⁶⁵ See Paul D. Rheingold, *Mass Torts—Maturation of Law and Practice*, 37 PACE L. REV. 617, 632 (2017) (describing the typical components of a settlement grid).

¹⁶⁶ See Brown, Holian & Ghosh, *supra* note 86, at 686–87 (describing a settlement grid as a function of independent variables). When the settlement grid is described as a linear function, the weight assigned to each disputed fact of the case becomes the coefficient for each independent variable. *Id.* at 689.

sampling.¹⁶⁷ However, a single set of bellwether trials cannot typically provide sufficient information to create an adequate settlement grid. Increasing the number of coefficient values makes each estimate less precise.¹⁶⁸ Although it is mathematically possible to fit a linear model with as few as two observations per coefficient value,¹⁶⁹ smaller samples increase sensitivity to outliers and produce estimates that do not adequately describe the remaining data.¹⁷⁰ When the number of bellwether trials is as small as four,¹⁷¹ estimating additional coefficient values renders the resulting settlement grid highly imprecise. Due to the lack of a formal review mechanism for MDL settlements,¹⁷² imprecise estimates may over- or under-compensate plaintiffs.¹⁷³

Even when claims are divided into subgroups with party involvement, parties should not select bellwether cases. To estimate the weight of each independent variable, the variables must be *identifiable*: A change in the dependent variable must be attributable to a corresponding change in a specific independent variable,¹⁷⁴ which cannot be achieved if the dataset selected for bellwether trials includes only the cases with certain combinations of independent variables.¹⁷⁵ This is likely to occur if each party is given the opportunity to select the most favorable cases for themselves.¹⁷⁶ Such bellwether trials will

¹⁶⁷ See generally Andrew D. Bradt & D. Theodore Rave, *It's Good to Have the "Haves" on Your Side: A Defense of Repeat Players in Multidistrict Litigation*, 108 GEO. L.J. 73 (2019) (describing the role of specialized practitioners as lead counsel in MDL proceedings).

¹⁶⁸ A more complex model describes the data more comprehensively, reducing the bias in estimation, but it also makes each estimate less precise. This problem, referred to as the bias-variance trade-off, introduces a de facto limit to model complexity when the dataset is small. See TREVOR HASTIE, ROBERT TIBSHIRANI & JEROME FRIEDMAN, *THE ELEMENTS OF STATISTICAL LEARNING* 37–38 (2017).

¹⁶⁹ See Peter C. Austin & Ewout W. Steyerberg, *The Number of Subjects Per Variable Required in Linear Regression Analyses*, 68 J. CLINICAL EPIDEMIOLOGY 627, 634–36 (2015) (arguing that unbiased estimates can be obtained from two observations per independent variable).

¹⁷⁰ See Richard D. Riley, Kym Ie Snell, Joie Ensor, Danielle L. Burke, Frank E. Harrell Jr., Karel Gm Moons and Gary S. Collins, *Minimum Sample Size for Developing a Multivariate Prediction Model: Part II – Binary and Time-to-Event Outcomes*, 38 STAT. MED. 1276, 1277 (2019) (describing the increased possibility and consequences of overfitting when sample sizes are small).

¹⁷¹ Villalón, *supra* note 14, at 517–18 (describing the process of an MDL court selecting four cases for bellwether trial).

¹⁷² See generally Burch & Gluck, *supra* note 8 (describing the absence of a “meaningful choice” of forum, representation, and claim development in MDLs).

¹⁷³ See *infra* Section IV.B.

¹⁷⁴ This condition is not satisfied if more than one set of independent variables can explain the data. For a more formal discussion, see, for example, Thomas J. Rothenberg, *Identification in Parametric Models*, 39 ECONOMETRICA 577, 578 (1971).

¹⁷⁵ QUINN & KEOUGH, *supra* note 100, at 127–29.

¹⁷⁶ Plaintiffs are likely to select cases without facts that are likely to influence the jury’s determination of causation, while defendants are likely to select cases with highly attenuated

only be informative in estimating the overall effects of the most and the least favorable sets of predictor values. To prevent this, bellwether cases should be randomly selected in each subgroup.

Although MDL transferee courts often involve parties in the selection of bellwether cases, this practice ignores the asymmetry in the distribution of claim values and the increased incentives for strategic litigant behavior, thus resulting in a higher probability that a settlement amount does not accurately reflect the value of the plaintiffs' claims. Instead, courts should strive to make the process more robust against these biases through random selection of bellwether cases. In doing so, courts should employ a more in-depth understanding of quantitative methods in sampling techniques.

IV

ATTACHING THE BELL: PRACTICAL CONSIDERATIONS IN USING BELLWETHER TRIALS AS SAMPLES

Random sampling for bellwether cases results in a predictable sample, in that the court will be able to predict the improvements to information quality according to the number of cases tried. However, when there is a finite number of cases available for trial, only a small number of which can be selected for bellwether trials due to practical considerations, it is necessary to incorporate judicial economy and litigant behavior into consideration, as I discuss in Sections IV.A and IV.B. Only then is it possible to arrive at a guideline for the tasks that an MDL court should accomplish through bellwether trials, which I lay out in Section IV.C.

A. Identifying the Optimal Sample Size

The sample size, or the number of bellwether trials held by an MDL court, determines both the quality of the estimate and the cost of estimation. A greater number of bellwether trials produces a more precise estimate, but increases the cost of bellwether trials and potentially reduces the accuracy of estimation.

Whenever independent samples are randomly collected from a population, the Central Limit Theorem predicts that the sample mean follows a normal distribution with an expected value identical to the

causation. See, e.g., Brown, Holian & Ghosh, *supra* note 86, at 686–87 (describing the high proportion of bellwether plaintiffs with no underlying health conditions when selected by plaintiffs' lead counsel).

population mean, and a standard deviation inversely proportional to the square root of the sample size.¹⁷⁷ In other words, the means of the samples follow a bell curve. If a sufficiently large number of samples is collected, the mean of all sample means will be identical to the population mean; the bell curve has a higher peak when the sample size is larger. The only assumption is that the samples are independent and identically distributed; the values of previous samples from which the sample mean is calculated cannot influence the value of the next sample. When this assumption is met, increased sample size improves precision of the estimate without compromising accuracy. In the context of a hypothetical mass tort MDL, selecting a larger number of bellwether trials produces a more precise estimate of the settlement value.

Sampling bellwether cases deviates from the Central Limit Theorem due to the finite number of cases. Selecting one case as a sample removes the case from the pool of the remaining cases for sampling, making each sample no longer independent. Further, bellwether judgments do not contribute to the settlement fund. The claims sent to bellwether trial, therefore, comprise a different population than that of the remaining cases to be settled.¹⁷⁸

This discrepancy is less influential when the samples are more independent of one another, and when the sample is similar to the remaining population. In larger MDLs, sampling has negligible influence on the distribution of the remaining population, and the court can use the Central Limit Theorem to balance increased trial costs with increased precision of the estimated settlement value. For smaller MDLs, however, the number of bellwether trials should generally be smaller than that derived from the Central Limit Theorem. Because each case is weighed more heavily in the population of claims in smaller populations, larger numbers of bellwether trials reduce independence and produce greater deviation from the Central Limit Theorem.¹⁷⁹

While it is beyond the scope of this Note to produce a generalized equation to correct for small population sizes, it is possible to examine the behavior of sample means through simulation. First, a population of claims can be simulated from the size of the MDL and assumptions on the expected distribution of judgment values. Random numbers from

¹⁷⁷ For such a random sample, the population mean can be estimated by the sample mean, and the estimate will be more precise in larger samples. See QUINN & KEOUGH, *supra* note 100, at 17–18.

¹⁷⁸ For a more formal description of these deviations, in addition to a closed-form solution for the optimal sample size for a simple case with a normally distributed population, see Bavli, *supra* note 90, at 80–81.

¹⁷⁹ See *id.*

a given distribution may be generated through statistical software.¹⁸⁰ For personal injury or medical malpractice claims, the court may use a lognormal distribution with relevant independent variables to simulate judgment values.¹⁸¹ Then, from the simulated population of claims, the court can randomly select the desired number of samples, calculate their means, and estimate the mean and standard error from these. The mean values can be compared with the population mean for bias, and the precision of the estimate is represented by the standard error. Through comparing these predictions across sample sizes, the court may identify the optimal sample size in a smaller MDL.

B. Minimizing the Impacts of Meritless Claims and Strategic Settlements

Defense-side practitioners often argue that MDLs are a “field of dreams” that attract weak or frivolous claims.¹⁸² The proliferation of claims that would individually be negative-value prevents the underdeterrence of tortious conduct.¹⁸³ However, frivolous claims, combined with strategic settlement of unfavorable cases by either party, undercompensate meritorious claims and delay aggregate settlement when unaddressed by the court. Through combining random sampling with stratification, this risk can be greatly reduced.

Claims in an MDL may vary widely in their likelihood of success. Defendants allege that they “felt pressured to settle claims of dubious merit,” and that “there is an incentive for plaintiffs’ counsel to include more . . . claims that are not meritorious.”¹⁸⁴ In addition to

¹⁸⁰ See, e.g., The R Foundation, *The R Project for Statistical Computing* (2025), <https://www.r-project.org> [<https://perma.cc/U7JF-M2UD>]. The lognormal distribution is called through the function *rlnorm*.

¹⁸¹ When the distribution of a dependent variable is best described as lognormal, the data can usually be described by a model that assumes a linear relationship between the independent variables and the logarithm of the dependent variable. Accordingly, lognormally distributed judgment values can be simulated through identifying the independent variables likely to be associated with the outcome and assuming a linear relationship between these independent variables and the logarithm of judgment values. The court may rely on pre-existing research on the distribution of tort claims, see *supra* note 149, or values for independent variables, see *supra* Section III.C, to identify such variables. The computational cost for these simulations is low; multiple simulations may be run to compare different assumptions and independent variables.

¹⁸² Rave, *supra* note 54, at 1596–97.

¹⁸³ See David Rosenberg, *Mandatory-Litigation Class Action: The Only Option for Mass Tort Cases*, 115 HARV. L. REV. 831, 831–33 (2002) (arguing that the objective of mass tort litigation should be the minimization of overall social cost of tortious behavior when administrative regulation is unavailable).

¹⁸⁴ Douglas G. Smith, *Resolution of Common Questions in MDL Proceedings*, 66 U. KAN. L. REV. 219, 219 (2017).

the concern that awarding frivolous claims from a global settlement will undercompensate plaintiffs with stronger claims,¹⁸⁵ meritless claims may also compromise settlement by reducing the credibility of plaintiffs and incentivizing defendants to “litigate more often to deter frivolous filings.”¹⁸⁶

When bellwether trials are used to estimate aggregate settlement values, the effect of claim dilution becomes even more extreme. When a sufficiently large majority of claims are meritless, there is a meaningful probability of only selecting meritless claims for bellwether trials.¹⁸⁷ Other than as a general indicator that a large proportion of the claims are meritless, these judgments are uninformative for determining the settlement value; the parties are left in a worse position than they were before bellwether trials, and the court cannot obtain a more accurate settlement value without additional bellwether trials.

A simple but cost-intensive scheme is to conduct bellwether trials until a certain number of nonzero verdicts have been reached. The court can determine this number by balancing cost considerations with expected gains in precision. To minimize additional trials, the court should introduce a stratified sampling scheme if possible; potential predictors for claim size can be identified, and subsequent bellwether trials can be selected from previously underrepresented ranges of predictor values.¹⁸⁸ Additionally, the court may use bellwether trials to identify common dispositive issues for pending claims, after which it may adjudicate on these issues through pretrial motions¹⁸⁹ or certify issue classes.¹⁹⁰ If the number of remaining meritorious claims is small, the court may remand them.

¹⁸⁵ See Barbara J. Rothstein, Francis E. McGovern & Sarah Jael Dion, *A Model Mass Tort: The PPA Experience*, 54 *DRAKE L. REV.* 621, 622 (2006) (suggesting that global settlements overcompensate weak claims and undercompensate stronger claims).

¹⁸⁶ Rave, *supra* note 54, at 1617.

¹⁸⁷ This is analogous to taking a given number of balls out of a basket. If there are N total balls in a basket, of which k are red, the probability of the first n balls pulled out of the basket all being red is $\frac{k!(N-n)!}{(k-n)!N!}$. When ten claims are selected for trial in a small MDL of 100 cases

where only 20% of the claims are meritorious, this translates to a 9.5% probability that all bellwether cases will be meritless. When the proportion of meritless claims and the number of bellwether trials are held constant, this probability increases in larger MDLs.

¹⁸⁸ For example, if eight of the first ten bellwether trials involved plaintiffs over the age of sixty-five and the court suspects that age influenced individual causation, it may select the next five bellwether trials from the group of plaintiffs under sixty-five.

¹⁸⁹ See Trask, *supra* note 56, at 123–24 (explaining the role of pretrial motions in efficiently resolving shared issues).

¹⁹⁰ Courts can certify issue classes when “appropriate” to treat the case as a “class action with respect to particular issues.” FED. R. CIV. P. 23(c)(4). Despite the criticism against “reinvent[ing] 23(c)(4) as a workaround to evade the onerous demands of (b)(3)

All these solutions require additional trials, either as bellwethers or on an individual basis.¹⁹¹ However, a court seeking to minimize litigation costs may be unwilling to order more trials. In this case, the parties will be forced to settle based on their prior knowledge of similar claims. In addition to potentially diluting the value of meritorious claims, settlement proceedings will be based on speculation rather than estimation, undermining both the accuracy of settlement value and fairness of resolution through MDL.

To minimize these risks, courts should filter out clearly meritless claims and address common legal issues on an aggregate basis before bellwether trials. Transferee courts can collect information through fact sheets, with questions on “the circumstances of [] exposures and the severity of [] injuries,”¹⁹² to identify commonalities and eliminate clearly meritless claims.¹⁹³ These fact sheets may also be used to provide a basis for stratified sampling and potentially for issue class certification of certain subsets of the pending claims.

Strategic settlements further contribute to potential undercompensation and underdeterrence. Cases selected for bellwether trials can be settled or voluntarily dismissed before a jury verdict is reached.¹⁹⁴ Because the distribution of judgment values is generally expected to be right-skewed,¹⁹⁵ a defendant successfully settling strong cases benefits disproportionately from settlement even if settlements of strong claims and voluntary dismissals of weak claims occur at similar frequencies.¹⁹⁶ To address this, courts should proactively account for

predominance,” Laura J. Hines, *Codifying the Issue Class Action*, 16 NEV. L.J. 625, 631 (2016), some courts adopted issue classes for “judicial declaration[s] establishing particular facts or elements of a claim.” Myriam Gilles & Gary Friedman, *The Issue Class Revolution*, 101 B.U. L. REV. 133, 139 (2021) (summarizing case law on issue classes and proposing their potential applications).

¹⁹¹ Some regression models explicitly take zero-value claims into account. See Eisenberg, Eisenberg, Wells & Zhang, *supra* note 149. Although these models do not require covariates to evaluate, they remain more complex and data-intensive than a model that only evaluates the population mean. See *id.* A Bayesian model can address the possibility for zeros from a distribution that includes non-zero values. See QUINN & KEOUGH, *supra* note 100, at 27–28. However, the accuracy of this model depends heavily on specification of the prior probability distribution.

¹⁹² MANUAL FOR COMPLEX LITIGATION (FOURTH) § 22.91 (2004).

¹⁹³ See Engstrom, *supra* note 107, at 57–60 (describing the content of fact sheets and providing four examples of mass tort MDLs in which the court used fact sheets to eliminate meritless claims).

¹⁹⁴ See *supra* note 159.

¹⁹⁵ See *supra* note 149.

¹⁹⁶ Bellwether plaintiffs with low-quality claims have no incentive to voluntarily dismiss their claims; such plaintiffs cannot recover from the settlement fund, while the possibility of recovery through trial is above zero. See Sekula, *supra* note 159, at 863 n.19 (describing the potential reasons why a bellwether plaintiff may want to try an unfavorable case).

the impacts of strategic settlements and dismissals. Random selection reduces the likelihood that extreme claim values will be selected.¹⁹⁷ If only a small number of the scheduled bellwether trials are actually conducted, courts should consider the possibility that strong cases are settled out of trial and review the global settlement more closely for fairness.

While replacing these cases with another randomly selected bellwether trial,¹⁹⁸ or allowing the opposing party to select a replacement,¹⁹⁹ may reduce the incentive to settle by increasing litigation costs of settlement, it does not remove the downward bias created by settlements. The impact of strategic settlements may also be incorporated *a priori* into simulation schemes by introducing a probability that a case selected for trial is excluded from the sample mean.²⁰⁰ Alternatively, courts may address strategic settlements by an agreement to try all the cases selected for bellwether trials,²⁰¹ although no case law confirms its enforceability. A requirement to disclose the settlement amount may allow the court to use the information from settlements to assess the perceived value of each case.

C. *Estimating and Allocating the Settlement Fund*

After identifying and accounting for biases associated with sample size, claim dilution, and litigant behavior, the MDL court must conduct bellwether trials to estimate the size of the settlement fund and allocate it to plaintiffs. These bellwether trials may be conducted by remand to

¹⁹⁷ See *supra* Section III.B.

¹⁹⁸ See Fallon, *supra* note 15, at 954 (recommending the transferee court to notify the counsel that any settled cases will be replaced by another for a bellwether trial).

¹⁹⁹ See *In re Fosamax Prods. Liab. Litig.*, No. 1:06-MD-1789, at 3 (S.D.N.Y. Jan. 31, 2007) (case management order requiring the opposing counsel to select a replacement if a party withdrew or voluntarily dismissed a bellwether case).

²⁰⁰ Strategic settlements of high-value claims produce right-censored data, the methods of addressing which have been comprehensively examined in literature. See, e.g., Hira L. Koul, Vyaghreswarudu Susarla & John Van Ryzin, *Regression Analysis with Randomly Right-Censored Data*, 9 ANN. STAT. 1276, 1276–88 (1981) (arguing that randomly right-centered data should be analyzed with a novel estimator of a parameter vector); Shulamith T. Gross & Tze Leung Lai, *Nonparametric Estimation and Regression Analysis with Left-Truncated and Right-Censored Data*, 91 J. AM. STAT. ASS'N 1166, 1166–80 (1996) (applying nonparametric estimation from left truncation to right-censoring data). Depending on the information available to the court, this probability can be modeled as a quantity positively correlated to the settlement value, or to predictors expected to be associated with settlement value. Alternatively, courts may use models of litigant behavior. See, e.g., Keith N. Hylton & Sanghoon Kim, *Trial Selection and Estimating Damages Equations*, 20 REV. OF L. & ECON. 1, <https://doi.org/10.1515/rle-2023-0020> [<https://perma.cc/AMY8-YXNZ>] (2024) (providing a model to describe the decision to settle or appeal when outcomes are expected to be unfavorable).

²⁰¹ See Sekula, *supra* note 159, at 859.

the transferor court²⁰² through “strategic disaggregation,”²⁰³ or in the transferee court with consent of parties.²⁰⁴ With the information obtained through fact sheets and discovery, courts should determine whether to divide the MDL into subgroups, use bellwether trial judgment values to estimate the settlement fund amount, and then divide the fund among plaintiffs.

Although MDLs do not require predominance, the court may be able to identify common legal issues across subsets of claims.²⁰⁵ If so, courts should divide the MDL into subsets and select random samples among each subset. Pretrial proceedings such as motion practice can be used to reduce the overall volume of litigation and eliminate meritless claims.²⁰⁶ When the effect of increased homogeneity within the subgroup is sufficient to offset the effect of reduced sample size, courts should sample from each subset regardless of differences in law or fact.²⁰⁷ More specifically, if low within-group variability and high between-group variability in claim value among subsets are expected, separate samples require fewer trials.²⁰⁸

Then, the court should estimate the average settlement amount for each subgroup. The distribution of claims within each group is generated by multiple processes: the determination of binary legal issues; calculation of damages; and the variability in verdict among trials for identical claims. The court, however, should collapse these processes into a single population distribution for each group.

²⁰² See Lahav, *supra* note 125, at 200–01; Eduardo C. Robreno, *The Federal Asbestos Product Liability Multidistrict Litigation (MDL-875): Black Hole or New Paradigm?*, 23 WIDENER L.J. 97, 146–47 (2013) (describing an agreement with the transferor court to identify judges “ready, willing, and able to try the case”).

²⁰³ Rave & McGovern, *supra* note 61, at 41 (describing the measures taken by the *In re Nat’l Prescription Opiate Litig.* transferee court).

²⁰⁴ 28 U.S.C. § 1404(a).

²⁰⁵ For example, only some state laws may be amenable to theories such as market share liability that allow for relaxed standards of causation. See *In re Methyl Tertiary Butyl Ether Prods. Liab. Litig.*, 379 F. Supp. 2d 348, 377–441 (S.D.N.Y. 2005) (analyzing the substantive tort law of each state to determine the applicability of alternative theories of liability to the claims). Alternatively, some claims may be more similar to others due to the legal arguments or circumstances of individual litigants. See Gluck & Burch, *supra* note 45, at 26–29 (describing the creation of several “tracks” of claims in a mass tort MDL by common legal issues).

²⁰⁶ See *supra* Section IV.B.

²⁰⁷ For example, if the total number of bellwether trials stays equal, bellwether trials from two subgroups only increases precision if the expected standard deviation of the new subgroup is smaller than that of the entire group divided by $\sqrt{2}$. See *supra* note 177 and accompanying text (describing the relationship between the sample size and the standard deviation).

²⁰⁸ If each subset is sufficiently large, the Central Limit Theorem applies, and the estimated standard error is proportional to the variance of the subset, divided by the square root of sample size. See *supra* Section III.A.

Separately estimating the probability of recovery and the amount of damages does not produce better inference, because the possibility of recovery across all claims does not separately inform either the settlement amount or the settlement grid. Some studies have suggested that multiple juries could be used in a trial to minimize the effect of jury behavior,²⁰⁹ or that repeated jury trials of an identical claim²¹⁰ or a larger number of similar claims²¹¹ may inform the “true” expected value of a claim.²¹² However, this approach increases litigation cost and model misspecification risk; the court must provide assumptions about the shape of the distribution of observed verdicts and about the relationship between its parameters and the expected value of verdicts.²¹³ This is only an efficient use of resources if the court has reason to believe that inconsistent verdicts among similar claims is a more important source of variability than inconsistent sets of factual and legal issues.²¹⁴

After the settlement fund is calculated and tendered,²¹⁵ a settlement grid must be established to divide it among plaintiffs. For “mature” torts, where a relatively large number of comparable cases are available outside of the MDL, and factual or legal issues unique to the MDL at hand are less influential,²¹⁶ prior claims may be available as additional sources of data to inform a complex model. Systematic review of epidemiological and ecological research can further

²⁰⁹ Stier, *supra* note 82, at 1043–56.

²¹⁰ Bavli, *supra* note 90, at 84.

²¹¹ Byron G. Stier, *Another Jackpot (In)Justice: Verdict Variability and Issue Preclusion in Mass Torts*, 36 PEPP. L. REV. 715, 752 (2009) (arguing that “mature” torts that have been litigated repeatedly “will over time provide more reliable inferences”).

²¹² See Bavli, *supra* note 90, at 76–78 (describing differences among litigants and inconsistent judgments as two separate sources of variability).

²¹³ The observed verdict of each claim can be modeled as a statistical distribution with the expected verdict of the claim as its mean. See *id.* at 82–83 (modeling observed verdicts as a normal distribution around an expected verdict). To evaluate the model for observed verdicts, courts must specify parameters for this statistical distribution. For example, verdicts may follow a lognormal, chi-square, or gamma distribution instead of the normal distribution, whose parameters may covary with the expected verdict.

²¹⁴ On the other hand, the court can and should attempt to minimize known sources of inaccuracy from different jury compositions. The “hub-and-spoke model” of remand to transferor courts, Rave & McGovern, *supra* note 61, at 34–35, may be effective in improving accuracy and limiting docket congestion.

²¹⁵ Tendering the settlement fund prior to establishing a grid prevents the “opt-out problem” of optimistic plaintiffs choosing individual litigation. See Lahav, *supra* note 98, at 622–23 (describing the disruptive effects of plaintiffs opting out of a settlement).

²¹⁶ See Francis E. McGovern, *Resolving Mature Mass Tort Litigation*, 69 B.U. L. REV. 659, 659 (1989) (defining a “mature” mass tort in terms of the availability of jury verdicts and the resolution of factual and legal issues).

contribute to a predictive model that describes potential predictors of injury.²¹⁷

Once mass tort MDL settlements are treated as an exercise in estimating the average value of a claim within the MDL, well-established quantitative methods for analyzing highly skewed populations of limited size can be combined with simulations to provide courts with a set of bellwether cases that contribute most effectively toward this goal. A more precise and accurate estimate of the average value of a claim, in addition to incorporating extraneous information and protections for the allocation of the settlement fund, will contribute to a more fair and reasonable settlement for MDLs.

CONCLUSION

The analogy of attaching bells on sheep that lead the herd closely tracks the rationales for allowing parties to select bellwether cases in a mass tort MDL. Just as shepherds justifiably expect that sheep would follow their known leader to pasture, courts expect that parties can and will identify the cases most relevant for the resolution of the MDL. Just as the shepherd would be interested in learning about the behavior and temperament of the wether to predict how their flock will behave, courts expect a small number of bellwether trials to provide information on multiple aspects of the MDL.

Claims in an MDL, however, are more analogous to a group of vaguely sheep-shaped creatures, gathered across the country from Hawaii to Maine. While some animals in the herd may indeed be sheep as the shepherd expected, others may be goats, cattle, or a pack of deceptively convincing dogs. As the sheep follow their wether to their pasture, the dogs may develop an interest in a surprise squirrel in the barn. The farmer seeking to locate their animals would be much better served by attaching bells to a number of randomly selected animals, knowing that their locations are only a few of the many places where animals may be found.

²¹⁷ A systematic review identifies, collects, and aggregates information from pre-existing academic literature to answer a set of questions. For an overview of systematic methods, see, for example, Gary S. Bilotta, Alice M. Milner & Ian Boyd, *On the Use of Systematic Reviews to Inform Environmental Policies*, 42 ENV'T SCI. & POL'Y 67 (2014) (describing systematic review in environmental science); Khalid S. Khan, Regina Kunz, Jos Kleijnen & Gerd Antes, *Five Steps to Conducting a Systematic Review*, 96 J. ROYAL SOC'Y OF MED. 118 (2003) (describing systematic review in healthcare).

By using a small number of bellwether trials to answer questions about multiple aspects of the MDL, the court and parties inadvertently produce costly bellwether trials that result in inaccurate and imprecise settlements. Through an awareness that bellwether trials can realistically inform only the settlement amount and an emphasis on a procedure that provides a better estimate of this amount, MDL transferee courts can design and implement a much more robust and informative process. After all, despite the obvious benefits of legal education to both,²¹⁸ the practice of law is distinct from shepherding.

²¹⁸ See Stacy Zaretsky, *Now That's Transparency: 'Most Honest Law School' Admits a Graduate Is Employed as a 'Sheep Farmer'*, ABOVE THE LAW (Apr. 16, 2012, 12:16 PM), <https://abovethelaw.com/2012/04/now-thats-transparency-most-honest-law-school-admits-a-graduate-is-employed-as-a-sheep-farmer> [<https://perma.cc/V5TN-X4Y2>].