

IN THE COURT OF APPEALS  
STATE OF ARIZONA  
DIVISION ONE



DIVISION ONE  
FILED: 03/30/2010  
PHILIP G. URRY, CLERK  
BY: GH

SCOTTSDALE MEMORIAL HEALTH SYSTEMS, ) 1 CA-CV 07-0150  
INC.; AIR EVAC SERVICES, INC.; ) 1 CA-CV 08-0241  
ARROWHEAD COMMUNITY HOSPITAL; CHANDLER ) 1 CA-CV 08-0344  
REGIONAL HOSPITAL; COBRE VALLEY ) (Consolidated)  
COMMUNITY HOSPITAL; CRITICAL AIR )  
MEDICINE; DESERT SAMARITAN MEDICAL ) DEPARTMENT D  
CENTER; GOOD SAMARITAN MEDICAL CENTER; )  
FLAGSTAFF MEDICAL CENTER; JOHN C. )  
LINCOLN HOSPITAL; LUTHERAN HEART )  
HOSPITAL; MESA GENERAL HOSPITAL; MESA )  
LUTHERAN HOSPITAL; NAVAPACHE REGIONAL )  
MEDICAL CENTER; NORTHWEST MEDICAL )  
CENTER; PAYSON REGIONAL MEDICAL )  
CENTER; PHOENIX BAPTIST HOSPITAL; )  
PHOENIX CHILDREN'S HOSPITAL; )  
SCOTTSDALE HEALTHCARE - OSBORN; )  
SCOTTSDALE HEALTHCARE - SHEA; ST. )  
JOSEPH'S HOSPITAL; ST. JOSEPH'S )  
TRAUMA; ST. LUKE'S BEHAVIORAL HEALTH; )  
ST. LUKE'S HOSPITAL; TEMPE ST. LUKE'S )  
HOSPITAL; THUNDERBIRD SAMARITAN )  
MEDICAL CENTER; VALLEY LUTHERAN )  
HOSPITAL; VERDE VALLEY MEDICAL CENTER; )  
WESTERN ARIZONA REGIONAL MEDICAL )  
CENTER, )

Plaintiffs-Appellees, )

v. )

MARICOPA COUNTY, a political )  
subdivision of the State of Arizona, )  
Defendant-Appellant. )

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SCOTTSDALE MEMORIAL HEALTH SYSTEMS, )  
INC.; AIR EVAC SERVICES, INC.; )  
ARROWHEAD COMMUNITY HOSPITAL; CHANDLER )  
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CENTER; GOOD SAMARITAN MEDICAL CENTER; )  
FLAGSTAFF MEDICAL CENTER; JOHN C. )  
LINCOLN HOSPITAL; LUTHERAN HEART )  
HOSPITAL; MESA GENERAL HOSPITAL; MESA )

O P I N I O N

LUTHERAN HOSPITAL; NAVAPACHE REGIONAL )  
MEDICAL CENTER; NORTHWEST MEDICAL )  
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CENTER; PHOENIX BAPTIST HOSPITAL; )  
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HOSPITAL; )  
THUNDERBIRD SAMARITAN MEDICAL CENTER; )  
VALLEY LUTHERAN HOSPITAL; VERDE VALLEY )  
MEDICAL CENTER; WESTERN ARIZONA )  
REGIONAL MEDICAL CENTER )  
Plaintiffs-Appellants/ )  
Cross-Appellees, )  
) )  
v. )  
) )  
MARICOPA COUNTY, a political )  
subdivision of the State of Arizona, )  
) )  
Defendant-Appellee/ )  
Cross-Appellant. )  
) )

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Appeal from the Superior Court in Maricopa County

Cause Nos. CV1997-021512, CV1998-000759,  
CV1998-002035, CV1998-008011, CV1998-010714,  
CV1998-011303, CV1998-013574, CV1998-016162,  
CV1998-022632, CV1999-008827 (Consolidated)

The Honorable F. Pendleton Gaines, III, Judge

**REVERSED AND REMANDED**

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**J O H N S E N**, Judge

¶1 At issue in these consolidated appeals are thousands of claims by hospitals against Maricopa County under statutes that provided for reimbursement of fees incurred in providing emergency treatment to indigents. Because of the large number of claims and the many reimbursement requirements that applied to each of them, these cases presented a huge case-management problem for the superior court. The court ultimately entered judgment in favor of the hospitals based on findings of a Special Master who employed a novel statistical sampling methodology to resolve most of the claims.<sup>1</sup>

¶2 We hold that while statistical sampling may be used as a means of fact-finding in some cases, the record in these cases does not contain evidence to support the use of the sampling methodology employed here. We also hold the Special Master did not make findings sufficient to permit adequate judicial review. Accordingly, we reverse and remand the judgments. In a separate

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<sup>1</sup> As explained *infra*, statistical sampling was employed in two of these three consolidated appeals. The claims in the third consolidated appeal (the "Post-Claims Resolution" claims) were resolved in traditional case-by-case fashion.

memorandum decision, we address several issues concerning the legal standards for evaluation of these claims.<sup>2</sup>

### **FACTUAL AND PROCEDURAL BACKGROUND**

#### **A. The "Cycles" Cases and the Legal Framework Governing the Hospitals' Claims.**

¶13 Since the creation in 1982 of the Arizona Health Care Cost Containment System ("AHCCCS"), the State has shouldered primary financial responsibility for indigent health care. See Ariz. Rev. Stat. ("A.R.S.") §§ 11-290 through 11-305 (1997) and 36-2901 through 36-2914 (2003 & Supp. 2009). Nevertheless, during the time at issue here, Arizona's counties were obligated to pay for health care services provided to indigent residents who were not enrolled in AHCCCS. *Walter O. Boswell Mem'l Hosp., Inc. v. Yavapai County*, 148 Ariz. 385, 386, 714 P.2d 878, 879 (App. 1986).<sup>3</sup> Although hospitals usually had settled their reimbursement claims against the County without litigation, that changed in May 2000 when "the County abandoned its general policy of seeking settlement resolution of contested claims, and instead adopted a posture of litigating all disputes." *John C. Lincoln Hosp. and Health Corp. v. Maricopa County*, 208 Ariz.

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<sup>2</sup> Only the issues regarding statistical sampling and the Special Master warrant publication. See ARCAP 28(g); Ariz. R. Sup. Ct. 111(h). The statutes at issue in our separate memorandum decision have been repealed. See 2001 Ariz. Sess. Laws, ch. 344, §§ 8, 12 (1st Reg. Sess.).

<sup>3</sup> The County no longer is required to provide for medical care of its indigent residents. See A.R.S. § 11-291 (2001).

532, 534, ¶ 4, 96 P.3d 530, 536 (App. 2004). In short order, thousands of unresolved claims piled up. The County and the various hospitals divided the pending claims into 28 groups, which they called "cycles," with the notion that several "cycles" of cases would be tried at a time. *John C. Lincoln* was an appeal from 461 claims in Cycles 2 and 3, covering services rendered in 1997-1999. *Id.*<sup>4</sup>

¶4 In October 2003, while the judgments in Cycles 2 and 3 were on appeal, the County and several hospitals (collectively, "Hospitals") filed a joint case management memorandum in which they urged appointment of a special master "to aid with the oversight and the mechanics of the substantial efforts to be required to resolve the some 30,000 counts pending in Cycles 4 through 27 within the next 18-24 months."<sup>5</sup> Although

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<sup>4</sup> This court in *John C. Lincoln* affirmed a judgment requiring the County to reimburse hospitals for \$1,119,677.16 in emergency medical services. 208 Ariz. at 534, ¶ 5, 96 P.3d at 536.

<sup>5</sup> Hospitals making claims against the County were Arrowhead Community Hospital, Carondelet St. Joseph's, Carondelet St. Mary's, Chandler Regional Medical Center, Community Hospital, Desert Samaritan Medical Center, Emergency Professional Services, Good Samaritan Medical Center, John C. Lincoln Hospital, Maryvale Samaritan Medical Center, Mesa General Hospital, Mesa Lutheran Hospital, Navapache Regional Medical Center, Payson Regional Medical Center, Phoenix Baptist Hospital, Phoenix Regional Medical Center, Samaritan West Valley Emergency Center, Scottsdale Healthcare Osborn, Scottsdale Healthcare Shea, St. Joseph's Hospital, St. Joseph's Trauma, Thunderbird Samaritan Medical Center and Valley Lutheran Hospital. Also included in the consolidated litigation were claims made by Air Evac Services, Inc.

the Hospitals proposed that the court authorize the special master to "conduct a hearing or hearings" to resolve the claims, the County urged establishment of a multi-track plan in which the court would rule on dispositive legal issues, the parties would engage in mediation and a special master "trained in medical review issues" would "conduct a medical review" of claims that remained after mediation. The parties eventually agreed to the appointment of a former superior court judge as special master. In a stipulated order of reference entered by the superior court, the Special Master was "directed to investigate possible methods and procedures for managing and resolving these associated cases within 18 to 24 months, including those methods and procedures suggested by the parties, and to recommend and implement such methods and procedures as the Special Master deems appropriate."

¶15 Although proceedings before the Special Master unfortunately were not always conducted on the record, the record indicates that statistical sampling and extrapolation were on the table almost immediately. In a memorandum to the Special Master in February 2004, the County argued that sampling was not "appropriate for use in the courtroom" but might be useful in a series of mediation sessions in which the parties then were engaged. The County warned that even if sampling were used only for mediation, experts would need to determine which

of the many variables among the claims should be accounted for in the selected methodology. The County noted that the 30,000 claims at issue presented widely varying circumstances, including the location and type of services provided, dollar amount and reasons for denial.

¶16 The Special Master ruled on March 1, 2004, that with the assistance of his "own expert," he would "propose a sampling methodology for selecting a statistically valid sample" of the claims. The parties would be allowed to submit objections to the sampling methodology the Special Master devised. The Special Master added that his order "shall not be construed as a waiver of any parties' objections to the potential use of statistical sampling to resolve any pending claims."

¶17 In mid-April, both sides submitted memoranda about sampling methodologies the Special Master might adopt. The Hospitals proposed that their respective claims be sampled separately and suggested that claims be segregated for sampling purposes ("stratified") by dollar amount. For its part, the County urged analysis to determine whether claims should be further stratified by type, dollar amount, amounts already paid and the reasons for rejection. The County urged that any methodology employed be designed to achieve a confidence level of 95 percent with an error rate between 5 and 15 percent. The County also urged that before any sampling commence, the

Hospitals review each of the 30,000 claims and withdraw those that were plainly meritless.

¶18 In his March 1 order, the Special Master had directed the parties to jointly identify a "consulting expert" to advise him about statistical methodology. The parties eventually agreed on the Special Master's selection of Donald Ylvisaker, Ph.D, whom both sides acknowledged was a qualified statistician.<sup>6</sup> After several telephone conference calls with the Special Master and counsel, Dr. Ylvisaker proposed a sampling plan that the Master adopted with modifications based on comments from the parties.<sup>7</sup> Generally speaking, Dr. Ylvisaker proposed to sample each Hospital's claims separately. Outliers, meaning claims significantly higher in dollar value than the general population of a particular Hospital's claims, would be resolved

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<sup>6</sup> Dr. Ylvisaker, who holds a doctorate in statistics from Stanford University, has taught statistics for more than 40 years and at the time of the proceedings was an emeritus professor in statistics at the University of California at Los Angeles. Like many events in this long and complex matter, the parties' agreement to the selection of Dr. Ylvisaker does not appear in the record. On order of this court, counsel for the parties participated in a pre-argument conference with the court about critical non-record facts relevant to the issues on appeal. Counsel confirmed during this conference that the parties had agreed on Dr. Ylvisaker's selection. *Cf.* ARCAP 11(d) (use of agreed statements in lieu of certified transcript).

<sup>7</sup> The County began its written response to Dr. Ylvisaker's initial plan by "reserv[ing] its prior objections to the use of sampling as a means to resolve disputed issues or to obviate [the Hospitals'] burden of proving their claims."

individually on their merits. Each Hospital's remaining claims then would be segregated into two groups based on claim value, with higher-valued claims in one group and lower-valued claims in the other. Random samples of claims from each of the two groups would be selected for trial.<sup>8</sup> After the selected claims from each group were resolved individually, the percentage of "valid claim dollars" in each group would be extrapolated to the population of remaining claims and added to the amount due on the outlier claims to arrive at a total amount the County owed to each Hospital.<sup>9</sup>

¶19 The County filed formal objections to the Special Master's adoption of the Ylvisaker sampling plan. At the outset, the County "remind[ed] the Court, the Special Master, and Plaintiffs of its longstanding objection to the use of statistical sampling . . . to eliminate Plaintiffs' burden of proof at trial in this case." The County argued sampling would be appropriate only in "a form of alternative dispute

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<sup>8</sup> As Dr. Ylvisaker described the methodology to be followed for each Hospital: "From the remaining [after removal of the outlier claims] population of N claims totaling 2T dollars, draw a random sample of size n claims, totaling  $t_1$  dollars from its large claims; draw a random sample of size n claims, totaling  $t_2$  dollars, from its small claims."

<sup>9</sup> Sampling was not proposed with respect to a relative handful of Hospitals that had submitted substantially fewer claims than the others. These claims ultimately were resolved one-by-one at the trials discussed *infra*.

resolution." It also re-urged that before sample claims were selected for trial, the Hospitals "scrub" the global set of claims, that is, review each of them to eliminate duplicates, claims with mistakenly inflated dollar amounts, partially paid claims, refunded or settled claims and claims that were "facially invalid" for other reasons.<sup>10</sup> The County, however, raised no objections to the scientific merit of Dr. Ylvisaker's proposed sampling methodology.<sup>11</sup>

¶10 The court conducted a telephonic conference at which it offered to set an evidentiary hearing if either side requested it. The court explained, "If there is something wrong with the methodology, I want to find it out on the front end . . . ." The court went on to assure the County that its global objection to the use of sampling would be maintained:

I would want the County to be certain that they understand . . . [t]here is no

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<sup>10</sup> As noted *infra*, large numbers of the claims proved invalid. According to Dr. Ylvisaker's sampling plan, the Hospitals' view was that only "roughly 30%" of the claims would prove valid, while the County put the percentage of valid claims at only "5-15%."

<sup>11</sup> Our analysis does not hinge on the scientific merit of statistics as a discipline, Dr. Ylvisaker's qualifications as a statistician or even the bare admissibility of statistical evidence. Given Arizona's law governing the admissibility of scientific evidence, we have little doubt that Dr. Ylvisaker's analysis could be of help to the finder of fact. See *Logerquist v. McVey*, 196 Ariz. 470, 1 P.3d 113 (2000). The question presented is whether that analysis legally could be used to dictate rather than inform the result of the case.

concession or waiver now regarding the manner and method of proof at trial, if the case goes to trial. . . . [W]e're not now deciding the method or manner of proof of claims at trial. . . . So I wouldn't want the County to feel they are waiving a trial objection by how they want to handle the objections to the sampling methodology. We're engaged in a bold and interesting experiment here basically.

¶11 In their response to the County's objections to sampling, the Hospitals argued the County offered only conclusory statements rather than "reasons why sampling produces inherently-inadmissible evidence." As for the County's demand that the entire set of claims be "scrubbed" before sampling take place, the Hospitals argued that Dr. Ylvisaker had determined that "scrubbing" was not required to ensure a 95 percent confidence level.<sup>12</sup>

¶12 After neither side accepted the court's offer to set an evidentiary hearing, the court on October 15, 2004, overruled the County's objections to Dr. Ylvisaker's recommendation. It added, however, "The County is correct that its objections to statistical sampling for purposes of trial, if there is a trial, are preserved and are not waived by further proceedings before the special master on the consultant's recommendations." The court additionally referred to the Special Master the County's

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<sup>12</sup> As the Hospitals put it, "Dr. Ylvisaker recognizes that sampling, done right, ensures that everything comes out in the wash."

demand that the global set of claims be "scrubbed" before sampling commenced.

¶13 After consulting with Dr. Ylvisaker, the Special Master denied the County's request that the global set of claims be "scrubbed" prior to sampling. Dr. Ylvisaker then proceeded to identify the claims that would comprise the sample groups from each Hospital, and the parties completed discovery relating to the 2,195 selected claims (hereafter, "sample claims"). Although the record does not disclose the reason, at some point the Hospitals decided to "scrub" the sample claims before trial. After the Hospitals "scrubbed" them, only 1,150 of the 2,195 sample claims remained to be individually resolved.<sup>13</sup>

¶14 In due course, it came time to decide the nature of the proceeding in which the sample claims would be adjudicated. At a status conference on October 7, 2005, the court directed the parties to meet with the Special Master about the issue. After briefing, the Special Master recommended that the 1,150 remaining sample claims in the Cycles case be tried to him. Both sides would be allotted 40 hours of trial time. The

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<sup>13</sup> In other words, the Hospitals withdrew as meritless nearly half the claims that were to comprise the sample sets. Both sides agreed on appeal that Dr. Ylvisaker accounted for this dramatic change in the data by treating the "scrubbed" claims as having zero value when the sample results were extrapolated to the remaining universe of claims (which had not been "scrubbed").

Special Master proposed that after trial, he would determine the amounts the County owed on each of the sample claims, the results of which Dr. Ylvisaker would extrapolate to the other claims. The Special Master proposed then to compile the results and submit them, along with findings of fact and conclusions of law, in a report to the superior court. The parties would have 10 days in which to file any objections to the Special Master's report. In a joint status report, the parties urged the superior court to adopt the Special Master's trial management proposal, and it did.

**B. The "Claims Resolution" Case.**

¶15 Even as they prepared for trial before the Special Master in the Cycles case, the parties were conducting discovery on the next phase of cases to be tried, which they gave the name "Claims Resolution."

¶16 The claims in this case, which involved medical services rendered after October 1, 1999, were the product of a new claims resolution process enacted by the legislature and codified in A.R.S. § 11-297.03 (1999).<sup>14</sup> That statute required the County to establish a procedure for exchanging information related to any disputed claim denial and required good-faith

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<sup>14</sup> Repealed by 2001 Ariz. Sess. Laws, ch. 344, § 12 (1st Reg. Sess.).

efforts to resolve disputed claims. Former A.R.S. § 11-297.03(A).

¶17 The Hospitals submitted their claims in accordance with this statute, but progress toward resolving the claims was impracticably slow. On February 28, 2003, the Hospitals filed a mandamus action against the County seeking an order terminating the claims-resolution process. The lawsuit was settled by an agreement that the statutory claims-resolution process ended on June 23, 2004. Pursuant to the parties' agreement, the Hospitals dismissed the mandamus action with prejudice and filed an amended complaint seeking judicial resolution of the claims not resolved during the statutory process.

¶18 The Claims Resolution case included 19,114 claims pending at the conclusion of the statutory resolution process. The superior court consolidated the Claims Resolution case with the Cycles case and referred it to the same Special Master. Because the claims in the Claims Resolution case presented issues nearly identical to those in the Cycles case, the Claims Resolution litigation proceeded along virtually the same path as Cycles. The Special Master on September 14, 2005, filed recommendations by Dr. Ylvisaker to apply the same sampling protocol planned in the Cycles case. The County offered no specific objections to Dr. Ylvisaker's methodology, but stated simply that it reserved its previous objections "to the use of

sampling in these consolidated actions" and noted the court's acknowledgment on October 15, 2004, that the County's "objections to statistical sampling for purposes of trial" were preserved. The court approved the sampling plan on October 12, 2005.

**C. The "Post-Claims Resolution" Case.**

¶19 The final set of consolidated cases joined in this appeal contains claims filed after the conclusion of the statutory claims resolution period. The court referred these cases to the Special Master, who tried them separately from the Cycles and Claims Resolution cases. The parties labeled the claims in this final group the "Post-Claims Resolution" case.

**D. The Trials.**

**1. The Cycles trial.**

¶20 The 14-day trial in the Cycles case took place in April 2006. Because the County would be liable only for claims that met several statutory criteria, each of the 1,150 sample claims to be tried presented several issues. The Hospitals' primary witness was a certified public accountant, Julie Ferrell. Ferrell testified she led a nine-person team that spent several thousand hours sifting through hundreds of thousands of documents to assemble and analyze all relevant information pertaining to each of the 1,150 sample claims. Ferrell's conclusions as to each of the sample claims, along

with the relevant documents, were presented to the Special Master in 38 notebooks that consumed 11 linear feet of shelf-space. For each sample claim, Ferrell presented a worksheet containing facts relating to the claim and the County's rejection of it and showing the Hospital's calculation of the amount owed. When a patient's indigence was at issue, for example, the worksheet showed Ferrell's calculations of the patient's income or assets, as relevant, based on facts contained in documents taken from the Hospital's file or other official sources. Copies of the source material were attached to the calculations.

¶21 The 38 notebooks were admitted in evidence by stipulation. Ferrell testified for two full days. Rather than discuss each of the sample claims during her testimony, Ferrell described at some length how her team compiled the claims data and the methodologies she employed in determining eligibility for reimbursement, including assumptions she made when information was absent or incomplete.<sup>15</sup> She testified about a relative handful of specific claims to illustrate general

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<sup>15</sup> For example, Ferrell testified that she assumed each claim met the statutory "clean claim" documentation requirement, that Hospitals were not required to give the statutory notice in treating out-patients, and that if a claim file contained no information about the patient's assets, the value of the patient's assets was low enough to meet statutory indigence requirements.

principles she and her team applied in analyzing the larger set of sample claims.

¶122 The County presented its own analyses of the claims through its own witnesses. Also testifying at trial were witnesses who spoke about medical review (what portion of the expenses incurred were payable) and emergent care (whether the claims represented services that legally constituted emergency care).

¶123 The Special Master's Findings of Fact and Conclusions of Law, issued on July 19, 2006, contained only 11 separately numbered paragraphs. Among the Special Master's findings were:

1. The County's liability on each account depends on various fact issues including, without limitation, the patient's household income, assets and prior medical expenses, the patient's residence, and whether necessary emergency medical services were provided to the patient. The County's liability thus depends on literally thousands of individual factual issues.

2. The resolution of factual issues depended heavily on the credibility of witnesses, meaning their relative thoroughness, accuracy, objectivity, and candor. The Special Master finds that Plaintiffs' witnesses were much more credible than the County's witnesses, and that their reports and account summaries were accurate and supported by the evidence.

3. The preponderance of the evidence showed that Plaintiffs rendered services to patients who were in fact indigent and otherwise eligible to receive medical care at County expense. Most of Plaintiffs'

claims were submitted in accordance with Arizona law, and should have been paid. Plaintiff hospitals have carried their burden of proof on those cases in which the Special Master has determined an amount owing to each Plaintiff and [have] failed to carry their burden of proof on those accounts on which the Special Master has found no amount owing.

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8. It is difficult to even contemplate the effort and expense that would have been required to try every one of the more than 20,000 accounts in the universe from which the statistical sample in this case was drawn. The statistical sampling methodology reduced the sheer bulk of this dispute by roughly 90%, and thus greatly promoted the just, speedy and economical resolution of this litigation.

¶24 Attached to the four-page findings and conclusions was an exhibit that listed, for each outlier claim and for each sample claim, the amount, if any, the Special Master found the County owed. A second exhibit totaled the amount owed to each of the Hospitals on the outlier and sample claims, plus prejudgment interest. A third exhibit was a document prepared by Dr. Ylvisaker that, through extrapolation from the outcomes of the sample claims reflected in the second exhibit, calculated the total amount the County owed each Hospital on all of the claims.<sup>16</sup>

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<sup>16</sup> Dr. Ylvisaker's report explained that by extrapolating from the results of the sample claims, he derived what he termed a "total estimated award" due each Hospital. He said that for

¶125 The Special Master found in favor of the Hospitals in more than 95 percent of the sample claims that were tried and awarded 97 percent of the amount sought in those claims. But when the Special Master took into account that the Hospitals recovered nothing on the many sample claims they had withdrawn prior to trial, after extrapolation the Hospitals were awarded only about 17 percent of the amount they originally had claimed. See *supra* note 13. In total, the Special Master awarded the Hospitals \$12,999,814.57, plus pre-judgment interest.

¶126 The County asked the superior court to set a hearing on the Special Master's findings and conclusions and asked to depose Dr. Ylvisaker before the hearing to determine "whether the findings and conclusions proposed by the Special Master permit a valid extrapolation by [Dr. Ylvisaker] of the sample results to the universe of Cycles claims."

¶127 The County also filed detailed objections to the Special Master's findings and conclusions. In its filing, the County generally reiterated its objection "to sampling as a method to resolve and try these claims" and argued that the

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claims by each individual Hospital, "the ratio of total estimated award to total claim for unsampled cases is set to the ratio of total award to total claim for the sampled cases." Dr. Ylvisaker provided the error rate and confidence level for his analysis of each Hospital's claims. The stated error rates ranged between 2 and 3.5 percent at a confidence level of 95 percent.

claims raised individual fact issues that did not lend themselves to random grouping. It raised no specific objection, however, to the mathematical methodology that Dr. Ylvisaker employed and the Special Master accepted. The parties deposed Dr. Ylvisaker on August 25, 2006, after the County had filed its objections but before it filed its reply memorandum in support of its objections. The County did not raise any issue relating to Dr. Ylvisaker or his work in its reply memorandum.

¶128 After oral argument, the superior court overruled the County's objections, adopted the Special Master's findings and conclusions and entered judgment for the Hospitals in the amounts determined by the Special Master. Noting that the Special Master's factual findings were to be set aside only if clearly erroneous, see Ariz. R. Civ. P. 53(h)(2), the court concluded, "While the County attacks the methodology of the Special Master's fact-finding, the Court finds that the Plaintiffs' analysis of the standards, the evidence and the methodology used is far the more persuasive."

¶129 The County filed a motion for new trial in which it argued the Special Master erred by adopting the Hospitals' analysis of the sample claims and that the error was compounded when the sample results were extrapolated to the global set of claims. To their response to the County's motion, the Hospitals attached excerpts from a deposition in which the County's

statistical expert acknowledged that, with certain small exceptions not relevant to this appeal, she had no objection to the Dr. Ylvisaker's methodology. In its reply memorandum, the County conceded that point, stating, "To make the County's position clear once again, it objects not to the methodology used by Dr. Ylvisaker but to any sampling of these claims." After the court denied its motion for new trial, the County timely appealed.

## **2. The Claims Resolution trial.**

¶30 Trial in the Claims Resolution case commenced as post-trial briefing in the Cycles case was drawing to a close. The Claims Resolution case originally contained approximately 19,100 claims. Before Dr. Ylvisaker selected his samples, the Hospitals withdrew more than 2,700 claims. After about 2,180 sample claims were selected for trial, the Hospitals withdrew others, leaving 1,281 claims to be tried.<sup>17</sup> Over 17 days in November and December 2006, the Special Master heard evidence, as in the Cycles trial, regarding the validity of the sample claims, outliers and other claims not selected for sampling. The key witnesses for both sides were those who had testified in the Cycles trial. Ferrell testified for three full days and portions of two other days.

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<sup>17</sup> We cannot ascertain from the record the precise number of claims involved in each step of this process.

¶131 In relevant part, the Special Master's Findings of Fact and Conclusions of Law were nearly identical to those he entered after the Cycles trial. The Special Master added, however, "The Special Master is sufficiently acquainted with the evidentiary record to make these findings of fact with complete confidence. The Special Master reviewed the evidence during trial and also after conclusion of the presentation of evidence."

¶132 The Special Master found in favor of the Hospitals in 84.3 percent of the sample claims that were tried. As in the Cycle case, however, because each of the sample claims the Hospitals had "scrubbed" were counted as "zero" for purposes of the subsequent extrapolation, in all the Special Master awarded the Hospitals only about 13 percent of the total dollars originally claimed in the Claims Resolution case. After determining the amount to be awarded on each sample claim and adopting Dr. Ylvisaker's extrapolations to the universe of claims, the Special Master awarded the Hospitals a total of \$11,763,787.06, plus pre-judgment interest.

¶133 The County objected to the Special Master's report, arguing in part that the disparity between the proportion of sample claims denied in the Claims Resolution case and the proportion denied in the Cycles case (15.7 percent and 2.6 percent, respectively) called into question the validity of the

sampling process. Citing *In Re Chevron U.S.A., Inc.*, 109 F.3d 1016, 1023 (5th Cir. 1997), the County also argued that the use of sampling to resolve the claims deprived it of due process. After hearing argument, the superior court overruled the County's objections and entered judgment for the Hospitals. The court recounted in its order an exchange with the County's counsel at the hearing:

The County's argument that the five-year process engaged in by the parties, the special master and the Court has resulted in "excessive delegation and displacement of the trial court," a denial of due process and "rubber-stamped" approval by the Court of the special master's actions appears not to be seriously urged. When asked at argument whether the County requests that the matters heard by the special master be tried de novo by the court (an available option), the County's counsel said he was not.

When asked whether the County seeks a rehearing before the special master of the eighteen days of hearing devoted to the claims resolution cases, counsel said, "No."

The Court is at something of a loss as to the County's criticisms of the process in which the parties have engaged and the statistical sampling methodology used to attempt to resolve their dispute, which involves an overwhelming mass of detail. The County's objections to the sampling methodology were presented to and dealt with by the special master. No serious attack is presented here. The process appears fair on its face.

The transcript of the oral argument bears out the court's recitation of events during the hearing. Asked whether the County sought to have the sample claims retried by the court, perhaps with a jury, the County demurred.<sup>18</sup>

¶134 The County moved for a new trial, again pressing its argument that the differing results reached in the two trials cast doubt on the sampling protocol.<sup>19</sup> Citing *Cimino v. Raymark Indus.*, 151 F.3d 297, 320 (5th Cir. 1998), the County argued the sampling methodology the Special Master employed deprived it of its rights under the relevant statutes. The court denied the County's motion for new trial. The Hospitals timely appealed a

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<sup>18</sup> Counsel for the County responded, "Well obviously, that, as one extreme alternative, might be considered. It's not what I'm recommending, it's not what I would hope that you would do. What I candidly would like to see happen just as an individual is to have this thing sent back to [the Special Master] just for further elaboration of his thinking so we'd know how we got to the result in this case." We do not take this statement as a waiver of the County's objections to the use of sampling and extrapolation, but rather as a request that the case be sent back to the Special Master for additional findings. See ¶ 62 *infra*.

<sup>19</sup> For example, the County asserted the Special Master denied 90 of the 155 claims the County challenged in the Claims Resolution trial as not involving emergency services, but did not deny a single claim challenged on that ground in the Cycles case. In response, the Hospitals argued the two trials could not be compared in that manner because the parties' strategies in the first trial were not the same as in the second. For example, said the Hospitals, the County disputed residency in only 4.5 percent of the claims in the Cycles trial but disputed residency in 29.5 percent of the claims in the Claims Resolution trial.

ruling by the court on prejudgment interest and the County timely cross-appealed the judgment against it.

### **3. The Post-Claims Resolution trial.**

¶35 In November 2007, the Special Master conducted a six-day trial of the 808 claims in the "Post-Claims Resolution" case. Unlike the other cases in this appeal, statistical sampling was not employed in this trial.<sup>20</sup> The Special Master entered written findings of fact and conclusions of law and awarded the Hospitals \$1,692,179.36. As in the other two trials, the Special Master's findings and conclusions were brief; there were eight paragraphs of findings of fact and three paragraphs of conclusions of law. The superior court overruled the County's objections, adopted the Special Master's findings and conclusions and entered judgment for the Hospitals. The County timely appealed.

¶36 These matters were consolidated on appeal. We have jurisdiction pursuant to A.R.S. § 12-2101(B) (2003).

## **DISCUSSION**

### **A. Statistical Sampling as a Fact-Finding Mechanism.**

#### **1. The County's right to object to the use of statistical sampling.**

¶37 As an initial matter, the Hospitals argue the County may not object on due process grounds to the superior court's

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<sup>20</sup> The trial followed the same format as the others. Ferrell's testimony consumed three days of the trial.

use of statistical sampling because as a governmental entity, the County enjoys no due process rights under the Arizona or United States constitutions.

¶38 The Hospitals cite *John C. Lincoln*, 208 Ariz. at 544 n.9, ¶ 31, 96 P.3d at 541 n.9, in which this court rejected the County's argument that if medical benefits varied from one county to another, indigents seeking medical attention would be denied equal protection. We rejected the County's argument, concluding the County could not assert an equal protection claim "[b]ecause it is not a 'citizen' under Article 2, Section 13 of the Arizona constitution." *Id.*; see also *South Carolina v. Katzenbach*, 383 U.S. 301, 323-24 (1966) (rejecting state's due process challenge to Voting Rights Act: "The word 'person' in the context of the Due Process Clause of the Fifth Amendment cannot, by any reasonable mode of interpretation, be expanded to encompass the States of the Union, and to our knowledge, this has never been done by any court."); *Trust v. County of Yuma*, 205 Ariz. 272, 277-78, ¶ 27, 69 P.3d 510, 515-16 (App. 2003) (county has no equal protection rights under Arizona constitution because it is not a "citizen" and no equal protection rights under the United States constitution because it is not a "person" under the Fourteenth Amendment).

¶39 We need not decide whether the County ever may assert an affirmative due process claim because in this case the County

seeks only the protections Arizona law affords to any civil litigant. The Arizona Rules of Civil Procedure ensure that fundamental principles of justice and fairness govern the manner in which our courts resolve civil lawsuits. Taken together, the Rules guarantee that civil cases will be decided on the merits in accordance with principles of regularity and justice.

¶140 Rule 1 of the Arizona Rules of Civil Procedure provides that the Rules "shall be construed to secure the just, speedy, and inexpensive determination of every action." Ariz. R. Civ. Proc. 1. Another requirement that civil proceedings will be fair and just is found in Rule 59, which provides that at the conclusion of the litigation process -- after the filing of pleadings, discovery, motions and a full trial based on the evidence before the trier of fact -- the outcome may be vacated on a showing of "irregularity in the proceedings of the court . . . or any order or abuse of discretion, whereby the moving party was deprived of a fair trial." Ariz. R. Civ. P. 59(a)(1).

¶141 The Rules thus require what all litigants have a right to expect -- that civil litigation will be conducted in accordance with procedures that are just and fair. These protections apply in all civil lawsuits and to all parties to those lawsuits. The Hospitals may not argue that the County lacks the right to insist that the Rules or their underlying principles be enforced in a proceeding to which it is a party.

To the contrary, just as the County is not exempt from the burdens of the Rules when it comes to court, it surely is not deprived of their protections when it is summoned there by an opposing party. See *Mattingly v. United States*, 939 F.2d 816, 818 (9th Cir. 1991) ("when the United States comes into court as a party in a civil suit, it is subject to the Federal Rules of Civil Procedure as any other litigant"); *Levine v. United States District Court*, 764 F.2d 590, 596-97 (9th Cir. 1985) (government and public share a "fundamental interest . . . in insuring the integrity of the judicial process" and in a "right to a fair trial before an unbiased [fact finder]"); *State v. De Nistor*, 143 Ariz. 407, 412, 694 P.2d 237, 242 (1985) (in criminal case, government has a "right to a fair trial conducted in a judicious, orderly fashion") (citation omitted).

¶42 We proceed, therefore, to determine whether the statistical sampling methodology employed in the Cycles and Claims Resolution cases breached the County's rights under the Rules of Civil Procedure to procedures that are just, fair and regular.

**2. Whether the use of statistical sampling violated the County's procedural rights.**

¶43 The 40,000-plus claims in these consolidated cases presented the superior court with a management problem of staggering proportion. Trying the claims one-by-one would have

taken years, and repeated efforts at settlement had ended without success. Under these circumstances, we commend the superior court's decision to seek a creative means of resolving the claims. The key to the case management plan the court ultimately adopted was a statistical sampling methodology by which selected claims were tried individually and the results extrapolated for each of the Hospitals. Though this allowed the court to resolve the claims in a fraction of the time that traditional trials would have consumed, with concomitant savings in legal expenses and judicial resources, statistical sampling may be employed as a civil litigation case-management tool only if the particular methodology selected is consistent with the principles of justice and fairness embodied in our Rules of Civil Procedure.

¶44 The parties have not cited and we have not located any case like this one from any jurisdiction, in which, outside the context of a class action, numerous statutory claims against a single payer were resolved using statistical sampling methods. Although there is no Arizona case authority concerning the use of statistical evidence, several courts in other jurisdictions have examined whether the use of statistical sampling in other contexts violates due process; we consider those authorities in determining whether the sampling and extrapolation employed in

this case breached the County's right to fair treatment under the Rules of Civil Procedure.

¶145 In *Hilao v. Estate of Marcos*, 103 F.3d 767 (9th Cir. 1996), for example, sampling was used to determine damages owed to a class of 9,541 individuals who alleged human-rights abuses. After a jury first found the defendant liable, a special master was appointed to supervise the damages phase of the trial. *Id.* at 772. The special master reviewed deposition testimony and verified claims forms, determined that 131 of 137 sample claims were valid and recommended separate damage awards for each of the prevailing claimants. *Id.* at 782-83.<sup>21</sup> Those awards were extrapolated to the remainder of the claims, categorized by type of claim, to arrive at a total recommended award of \$767,491,493. *Id.* at 783-84. A jury trial then ensued in which the special master presented his conclusions and testified that the sampling "met the standards of inferential statistics." *Id.* at 784. The jury modified the special master's recommendations as to a few of the sample claimants, but adopted the recommended

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<sup>21</sup> The issues for the special master were whether the claimants suffered torture or their decedents suffered summary execution or disappearance, whether the military was involved in such abuse and whether the abuse occurred during the relevant time period. *Id.*

awards for the other class members whose cases were not individually tried. *Id.*<sup>22</sup>

¶46 The issue before the Ninth Circuit was whether the use of sampling to determine the percentage of claims that were valid violated the defendant's due process rights. *Id.* at 784-85. In a 2-1 decision, the court rejected the defendant's challenge. Citing *Connecticut v. Doehr*, 501 U.S. 1 (1991), the court applied a balancing test to determine whether the defendant's due process rights had been violated.<sup>23</sup> It concluded the defendant was not concerned with whether any particular claimant received an award as long as in the end, the defendant was not held liable for more than the total amount of damages actually incurred. 103 F.3d at 786.<sup>24</sup> On the other hand, the

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<sup>22</sup> The court entered judgment for the class members whose cases were not separately litigated in the amounts awarded by the jury, to be divided pro rata. *Id.* at 784.

<sup>23</sup> The Supreme Court in *Doehr* described its test as: "[F]irst, consideration of the private interest that will be affected by the [measure at issue]; second, an examination of the risk of erroneous deprivation through the procedures under attack and the probable value of additional or alternative safeguards; and third, . . . principal attention to the interest of the party seeking [to implement the measure], with, nonetheless, due regard for any ancillary interest the government may have in providing greater protections." 501 U.S. at 11.

<sup>24</sup> The Ninth Circuit stated that as to any particular claim in the class, statistical sampling presented "a somewhat greater risk of error in comparison to an adversarial adjudication of each claim." *Id.* at 786. *But see* ¶ 60 *infra* and authorities cited therein.

claimants' interest in employing sampling was "enormous, since adversarial resolution of each class member's claim would pose insurmountable practical hurdles." *Id.* And the "'ancillary' interest of the judiciary" was "obviously . . . substantial" in that if individual trials were required, they would "clog the docket of the district court for years." *Id.* at 786-87.

¶147 The Ninth Circuit's approval of the sampling employed in *Hilao* was based on the testimony of a statistical expert that the sample claims "would achieve 'a 95 percent statistical probability that the same percentage determined to be valid among the examined claims would be applicable to the totality of claims filed.'" *Id.* at 782. Although the defendant argued that sampling was inappropriate because class members presented numerous subsets of claims, the court held the special master's methodology satisfied that concern because it grouped the sampled claims into three categories based on the nature of the claim alleged (i.e. torture, execution, disappearance). *Id.* at 784-85.

¶148 Another court approved the use of sampling to calculate aggregate damages payable to a class in *Bell v. Farmers Insurance Exchange*, 9 Cal. Rptr. 3d 544 (App. 2004). The class in that case was composed of 2,500 employees seeking overtime pay. After an initial ruling by the trial court eliminated the employer's only substantive defense, the issue

became the total amount of back pay owed. *Id.* at 550. To determine the aggregate damages owed to the class, the court first took testimony from statistical experts for both sides, then approved a plan by which 286 randomly selected class members were deposed about the amount of overtime they worked. *Id.* at 552. At trial, a statistical expert testified on behalf of the plaintiffs that the sample size adequately represented the entire class and that the margin of error in extrapolating the sample results to the global set was 0.9 hours per week, with a 95 percent level of confidence. *Id.* at 552-53.

¶149 On appeal, the employer challenged neither the qualifications of the plaintiffs' expert nor the scientific methodology he employed. *Id.* at 572. Instead, the employer argued that the "use of statistical inference" violated its due process rights by relieving class members of the burden of proving they worked overtime. *Id.* at 572, 574. The court rejected this argument:

[S]tatistical sampling does not dispense with proof of damages but rather offers a different method of proof, substituting inference from membership in a class for an individual employee's testimony of hours worked for inadequate compensation. It calls for a particular form of expert testimony to carry the initial burden of proof, not a change in substantive law.

*Id.* at 574.

¶150 The court performed a *Doehr* balancing and, as in *Hilao*, found the defendant's only interest was in properly determining its overall liability, not the amount of damages awarded to any particular class member. *Id.* at 575-76. As in *Hilao*, the plaintiffs had a strong interest in using statistical inference to resolve their claims efficiently. *Id.* at 576. After an extensive survey of the case authorities and learned writings, the court observed that although a due process attack on the accuracy of statistical inference assumes sampling is a less reliable means of reaching a correct result, claim-by-claim adjudications also may involve "estimates, inferences and other sources of error." *Id.* at 577.<sup>25</sup> Moreover, the court noted that the employer's arguments were "at odds with the growing acceptance of scientific statistical methodology in judicial decisions and scholarship" and concluded, "We find little basis in the decisional law for a skepticism regarding the appropriateness of the scientific methodology of inferential statistics as a technique for determining damages in an appropriate case." *Id.* at 577-78. The court affirmed the portion of the damage award as to which the evidence showed the

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<sup>25</sup> The court noted, "The proof of damages by statistical inference chiefly differs in that it openly acknowledges the possibility of error and offers a quantitative measure of possible inaccuracy. In other words, it is overtly probabilistic." *Id.*

sampling resulted in a margin of error of 9.5 percent at a 95 percent confidence level, but rejected on due process grounds another damage component for which the margin of error was 32 percent. *Id.* at 576.<sup>26</sup>

¶151 Other courts have approved the use of sampling in mass tort cases. *See, e.g., Blue Cross & Blue Shield of N.J., Inc. v. Philip Morris, Inc.*, 133 F. Supp. 2d 162, 172 (E.D.N.Y. 2001) ("Statistical proof is available for every element of a claim in a mass tort action."); *In re "Agent Orange" Prod. Liab. Litig.*, 597 F. Supp. 740, 839 (E.D.N.Y. 1984) (defendant cannot complain if it is held liable for no more than "the aggregate loss fairly attributable to its tortious conduct").

¶152 On the other hand, some courts have refused to approve sampling in mass-tort class actions. For example, in *Cimino*, the Fifth Circuit Court of Appeals disallowed a district court's use of statistical sampling to resolve a class of 2,300 wrongful death and injury claims against several asbestos manufacturers. The district court had identified five disease categories presented by the claimants, then "randomly selected 160 sample cases, some from each disease category." 151 F.3d at 303. A

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<sup>26</sup> In approving the statistical sampling plan that was employed, the California court noted that in employment cases, liability for back pay is "consistently" imposed based on pattern-or-practice evidence and also observed that non-testifying employees frequently are granted back pay based on the testimony of a small percentage of other employees who fairly represent the others. *Id.* at 572-73.

jury was instructed to assume that each of the sample claimants was sufficiently exposed to asbestos to cause injury, then was directed to decide whether each sample claimant was entitled to damages, and, if so, how much. *Id.* at 305. In a subsequent hearing, the court heard evidence from plaintiffs' expert statistician that the sample cases adequately represented a mix of a dozen variables found in the global set of claimants. *Id.* at 309. The statistician, however, testified he did not select the variables, nor did he determine what the variables were in any particular claim. *Id.* Accepting that testimony, the court then extrapolated the results among the entire class and awarded damages to each of the other claimants in an amount equal to the average of the awards in the sample claims involving the same disease. *Id.* at 304.<sup>27</sup>

¶153 The Fifth Circuit reversed, concluding the district court's use of sampling was inconsistent with applicable state law, which required each claimant to prove causation and damages, and with the Seventh Amendment, which in turn required those issues to be tried to a jury. *Id.* at 314, 319. The court observed, *inter alia*, that there was an absence of evidence that damages suffered by the 160 sample claimants "were to any extent representative of the damages suffered by the extrapolation

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<sup>27</sup> Thus, class members whose claims were not tried separately were awarded damages without individual proof of causation.

plaintiffs in the same disease category.” *Id.* at 320. Moreover, “under Texas law causation must be determined as to ‘individuals, not groups.’ And, the Seventh Amendment gives the right to a jury trial to make that determination.” *Id.* at 319.<sup>28</sup> See also *McLaughlin v. American Tobacco Co.*, 522 F.3d 215, 223, 234 (2d Cir. 2008) (decertifying class action of smokers who alleged civil racketeering claims; rejecting plan to prove reliance and other elements by statistical methods).

¶154 In addition to these authorities, we gain insight from a line of cases in which medical providers challenged recoupment claims derived from statistical sampling. A clear majority dismisses those challenges, holding that statistical sampling, when properly performed, is a valid audit tool in that context. In *Ratanasen v. Cal. Dep’t of Health Serv.*, 11 F.3d 1467 (9th Cir. 1993), for example, the court approved a claim by California’s Medicaid program to recoup \$125,789 paid to a doctor. The court rejected the doctor’s argument that the audit on which the claim was based was invalid because it relied on sampling and extrapolation. *Id.* at 1471. “We now join other circuits in approving the use of sampling and extrapolation as part of audits in connection with Medicare and other similar programs, provided the aggrieved party has an opportunity to

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<sup>28</sup> Our cases present no Seventh Amendment issues because the County stipulated that the court would resolve the claims after receiving the Special Master’s recommendations.

rebut such evidence." *Id.*; see also *Yorktown Medical Lab., Inc. v. Perales*, 948 F.2d 84, 90 (2d Cir. 1991) (affirming dismissal of claim that government's withholding of payments based on sampling violated due process); *Chaves County Home Health Serv., Inc. v. Sullivan*, 931 F.2d 914, 916 (D.C. Cir. 1991) (audit of payments under Medicare Act); *Mich. Dep't of Educ. v. U.S. Dep't of Educ.*, 875 F.2d 1196, 1205-06 (6th Cir. 1989) (audit of payments under the Rehabilitation Act of 1973, 29 U.S.C. § 701 *et seq.*); *Ill. Physicians Union v. Miller*, 675 F.2d 151, 156 (7th Cir. 1982) (Medicaid payments); see also *United States v. Freitag*, 230 F.3d 1019, 1025 (7th Cir. 2000) (approving use of sampling and extrapolation to calculate loss in Medicare criminal fraud case); but see *Daytona Beach Gen. Hosp., Inc. v. Weinberger*, 435 F. Supp. 891, 900 (M.D. Fla. 1977) (recoupment claim based on 10 percent sample denied due process).

¶155 Unlike the claims at issue in these cases, the claims in the recoupment cases were based on audits performed using sampling. We do not find the distinction significant, however, because the issue in those cases, as here, was whether a large set of medical claims appropriately could be determined by statistical sampling.<sup>29</sup>

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<sup>29</sup> In certain of the recoupment cases, applicable rules permitted the medical provider to insist on a review of 100 percent of the claims. See, e.g., *Miller*, 675 F.2d at 153. Although the case management orders in our cases did not on

¶156 Guided by the foregoing authorities, we apply the balancing test the Supreme Court established in *Doehr* to assess whether the sampling methodology employed in these cases violated the County's rights under the Arizona Rules of Civil Procedure to fair and just proceedings. As in *Hilao* and *Bell*, the Hospitals' interests weigh in favor of resolving the thousands of claims in an expedient manner, and the County has no economic interest in whether any particular claim is resolved properly, only that in the end, it not be held liable for more than the relevant statutes required. At the same time, the public has an interest in resolving the claims fairly but efficiently without consuming undue amounts of judicial resources.

¶157 Under these circumstances, the critical factor in balancing the respective interests under *Doehr* is an "examination of the risk of erroneous deprivation" threatened by the sampling methodology the court employed. Put differently, did the court's adoption of Dr. Ylvisaker's sampling and extrapolation plan unduly threaten the County's interest that it be compelled to reimburse the Hospitals no more than the sum of all valid claims? See *Bell*, 9 Cal. Rptr. 3d at 575 (defendant

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their face likewise allow for the possibility of abandoning statistical sampling in favor of trying each claim separately, the recoupment cases generally illustrate other courts' approval of statistical sampling and extrapolation as a means of determining the validity of claims for medical services.

"may object to statistical sampling on due process grounds only to the extent that the procedure affected its overall liability for damages").

¶158 We reject the contention that statistical sampling never may be used to determine the liability of a single payer in a case such as this. Instead, based on the authorities cited above, we conclude the Rules of Civil Procedure permit the superior court to employ statistical sampling and extrapolation in such a case if the court finds, based on competent scientific evidence, that the methodology to be employed appropriately takes into account the variables in the claims, addresses the relationships among those variables and uses "a sample of sufficient size so as to permit a finding that there is a sufficient level of confidence that the results obtained reflect results that would be obtained from trials of the whole." *Chevron*, 109 F.3d at 1020 (citing Michael J. Saks & Peter David Blanck, *Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in Mass Torts*, 44 *Stan. L. Rev.* 815 (1992)).<sup>30</sup>

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<sup>30</sup> As the Fifth Circuit further explained in *Chevron*, "Without a sufficient level of confidence in the sample results, no inferences may be drawn from such results that would form the basis for applying such results to cases or claims that have not been actually tried." 109 F.3d at 1020.

¶159 The County urges us to adopt the reasoning of *Cimino*, which concluded that using statistical sampling to determine liability contravened state law requiring proof of causation and damage. The County argues that under the relevant Arizona statutes, it was liable only for the costs of emergency services rendered to indigent residents of the County. Under the reasoning of *Cimino*, the County argues, the trial management plans employed in the Cycles and Claims Resolution cases were fatally flawed because they permitted the Hospitals to sidestep their obligation to prove that each patient who received the medical services at issue was indigent and a resident of the County and that the services each received were emergent. We are not persuaded that use of statistical sampling to establish the County's liability in these cases necessarily violated the County's rights under the relevant payment statutes.<sup>31</sup> To the contrary, we conclude that statistical inferences, when properly derived and applied, may be used to prove entitlement to payment under those statutes. See also *Blue Cross & Blue Shield*, 133 F. Supp. 2d at 172.

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<sup>31</sup> While we acknowledge the *Cimino* court's wholesale rejection of sampling and extrapolation as a method of fact-finding, we note that the fact-finder in that case was told to *assume* the existence of evidence sufficient to support causation in the sample cases. By contrast, the case management plans in the Cycles and Claims Resolution cases obligated the Special Master to find each fact required to prove liability under the applicable statutes in each of the sample claims.

¶160 In sum, we accept the proposition that use of appropriate sampling methods to derive a probabilistic estimate of a single payer's liability for a global set of claims does not necessarily abridge the defendant's rights to a just and fair trial under the Rules of Civil Procedure. We do not agree that under the Rules, liability only may be established by way of "particularistic" evidence, meaning evidence pertaining to a particular claim. To the contrary, the emerging view, which we adopt in the abstract, is that when properly structured, statistical inferences may yield conclusions in multi-claim/single-payer cases that are as fair and just as claim-by-claim determinations. Indeed, some authorities teach that a probabilistic result reached by statistical sampling may be more accurate than the results of a claim-by-claim approach to a large set of claims. See, e.g., *Int'l Bhd. of Teamsters, Local 734 v. Philip Morris, Inc.*, 196 F.3d 818, 823 (7th Cir. 1999) ("Statistical methods could provide a decent answer - likely a more accurate answer than is possible when addressing the equivalent causation question in a single person's suit."); *Blue Cross & Blue Shield*, 133 F. Supp. 2d at 169-70 (citing authorities); Robert G. Bone, *Statistical Adjudication: Rights, Justice, and Utility in a World of Process Scarcity*, 46 Vand. L. Rev. 561, 600 (1993) ("The sample average when multiplied by the number of cases in the aggregation produces an aggregate

liability very close to total damages for the whole population, closer in fact than the total of individual verdicts had all the cases been tried separately."); David Rosenberg, *The Causal Connection in Mass Exposure Cases: A 'Public Law' Vision of the Tort System*, 97 Harv. L. Rev. 849, 870 (1984).<sup>32</sup>

¶61 We hold, however, that under the principles of fairness and justice that underlie our Rules of Civil Procedure, the superior court may adopt statistical sampling and extrapolation as a case management tool only when the specific methodology to be used is tailored to produce a result at least as fair and accurate as would be produced by traditional particularistic fact-finding methods. In making this determination, the court must at a minimum consider the number of claims in the relevant universe, the number and nature of the variables present in those claims, the sample size and whether the sample is truly representative of the universe of claims.<sup>33</sup>

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<sup>32</sup> Although the decisions that have closely analyzed the question typically do so in the context of mass torts, the County does not argue persuasively that the principles of those cases do not apply in other situations involving thousands of claims that share significant factual and legal similarities.

<sup>33</sup> As noted, Dr. Ylvisaker segregated outlier claims to be resolved separately, then divided the global set of remaining claims (1) by hospital and then (2) for each hospital, into sets of large claims and small claims. The County argues on appeal that Dr. Ylvisaker's methodology failed to accommodate adequately the asserted fact that the thousands of claims presented many other variables that made sampling inappropriate. Although Dr. Ylvisaker considered but rejected further claim

The court also must make detailed findings that permit the reviewing court a clear understanding of the entire methodology and its application.

¶62 The County argues that because neither the Special Master nor the court gave substantial consideration to these factors, we must reverse the judgments against it in the Cycles and Claims-Resolution cases. For their part, the Hospitals contend the County acquiesced to the Special Master's use of Dr. Ylvisaker's sampling plan and did not object to his methodology when the results were presented to the superior court. We reject the Hospitals' argument that the County waived its right to raise this issue on appeal because we conclude the County timely made known its generalized objections to the use of sampling and preserved those objections as the proceedings continued. In these circumstances, moreover, it was not the County's burden to show that the proposed sampling methodology was an inappropriate means of fact-finding under the authorities cited above. The Hospitals proposed statistical sampling as a

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stratification, this issue was not developed below. Accordingly, we do not decide whether additional stratified sampling should have been employed in this case. See Michael O. Finkelstein & Bruce Levin, *Statistics for Lawyers* 258 (2d ed. 2001) (use of stratified random sampling may be "imperative" when "the sampling units within a stratum may be more homogeneous in terms of the properties being measured than they are across strata"; in such a situation, "more precise estimates are obtained from a weighted average of stratum-specific estimates than from a simple random sample").

method of satisfying their burden of proof as to each of the elements of their statutory claims. As the side urging use of statistical fact-finding, the Hospitals bore the burden to show the proposed methodology was just and fair.

¶163 Neither the court nor the Special Master took evidence on the record of the viability of the Ylvisaker sampling methodology, of the appropriateness of the manner in which Dr. Ylvisaker proposed to stratify the claims for sampling or of Dr. Ylvisaker's apparent rejection of the need to further stratify the claims. Moreover, there was no evidence presented that Dr. Ylvisaker's methodology was properly implemented. For example, although Dr. Ylvisaker opined it was not necessary to "scrub" the claims, there was no finding that the Hospitals' decision to "scrub" the sample claims (and not "scrub" most of the other claims in the global set) was consistent with sound statistical practice. Further, there was no finding that explains the apparent discrepancy between the Hospitals' high rate of success among sample claims that were tried and the overall small percentage of claimed dollars that were awarded.

¶164 By way of example, the Special Master found in favor of Arrowhead Community Hospital on 100 percent of its sample claims tried in the Cycles case and awarded every dollar sought in those claims. The Special Master also found in favor of Arrowhead on 100 percent of its outlier claims. Yet of a total

of \$1,096,296.65 that Arrowhead asserted it was due on all of the claims it originally asserted in the Cycles case, Dr. Ylvisaker extrapolated a "total estimated award" to Arrowhead of only \$134,236.11, or 12.2 percent. The Special Master's findings nowhere explain the process by which 100 percent success on a trial of sample claims could be extrapolated to an overall 12.2 percent recovery. Though we might speculate that the reduction (with which Arrowhead apparently is satisfied) results from the "zeroing" of "scrubbed" claims or some other implied mathematical process, the record does not permit us to assess with any confidence whether the ultimate result of the extrapolation reflects the merits of the various claims.

¶165 We therefore conclude that neither the court nor the Special Master made the findings of fact that the Rules of Civil Procedure require before statistical sampling may be employed as a fact-finding tool. On remand, the court may approve the use of statistical sampling only if it determines that the methodology to be employed satisfies the principles stated above.

**B. The Special Master's Fact-Finding Process.**

¶166 Arizona Rule of Civil Procedure 53(a) sets forth the general purposes for which special masters may be appointed and the roles they may perform. Rule 53(a) provides that, absent consent of the parties and unless a statute otherwise allows, a

special master may "hold trial proceedings and make or recommend findings of fact and conclusions of law" only "if appointment is warranted by" an "exceptional condition" or "the need to perform an accounting or resolve a difficult computation of damages." Ariz. R. Civ. P. 53(a)(1).<sup>34</sup>

¶167 Even when, as here, the reference is by consent of the parties, the special master's role must be defined and conducted with due regard for the continuing responsibility of the judiciary for the outcome of the proceedings. See generally Ariz. R. Civ. P. 53(h). The special master's findings must be reviewed by the court before judgment may be entered. Ariz. R. Civ. P. 53(h)(2). In that review, the court decides all questions of law *de novo* and, unless the parties and the court agree otherwise, reviews findings of fact "under a clearly erroneous standard." *Id.*<sup>35</sup>

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<sup>34</sup> The quoted language from Rule 53(a) was added by an amendment that became effective on December 1, 2006, after the Cycles trial but midway through the Claims Resolution trial and prior to the trial in the Post-Claims Resolution cases. An amendment effective January 1, 2006 deleted language in prior Rule 53(b) that had provided that "reference to a master shall be the exception and not the rule" and that "[s]ave in matters of account, a reference shall be made only upon a showing that some exceptional condition requires it."

<sup>35</sup> While Arizona's Rule 53(h) presumes that a master's findings will be reviewed pursuant to a "clearly erroneous" standard, the federal rule provides that, absent stipulation approved by the court, the court will review a master's findings *de novo*. Fed. R. Civ. P. 53(f).

¶168 When, as here, the master's findings are subject to review pursuant to a "clearly erroneous" standard, a special master who has conducted a trial pursuant to Rule 53(a)(1) must make detailed findings of fact so the appointing court is allowed a meaningful opportunity to review the master's work. *Cf. Miller v. Bd. of Supervisors of Pinal County*, 175 Ariz. 296, 299, 855 P.2d 1357, 1360 (1993) (superior court's findings pursuant to Rule 52 must be "sufficiently specific to allow an appellate court to test the validity of the judgment") (quotation omitted). Unfortunately, the findings and conclusions the Special Master entered in these three consolidated cases are too general for this purpose.

¶169 As noted, to prove a right to reimbursement under the prevailing statutes, the Hospitals were required to establish that each claim satisfied several criteria (among them, that the patient was "indigent" within the meaning of the law, that the patient was a resident of the County and that the treatment was emergent). But the Special Master did not make detailed findings with respect to any of the claims that were tried; his findings in each of the three cases were set out in the most general of terms. The Special Master acknowledged that the claims tried in the Cycles and Claims Resolution cases involved "thousands of individual factual issues" (and that the Post-Claims Resolution trial involved "hundreds" of factual issues),

but failed to provide an explanation of his decision on the merits of any of those factual issues. While the use of extrapolation to reduce the number of claims to be tried may prove to have been permissible, there simply is no lawful substitute for detailed findings of fact and conclusions of law in each of the claims that were tried on a case-by-case basis.<sup>36</sup>

¶170 The Special Master primarily based his findings of fact on determinations of credibility. He explained in his findings that “[t]he resolution of factual issues depended heavily on the credibility of witnesses, meaning their relative thoroughness, accuracy, objectivity and candor.” He found the Hospitals’ witnesses more “credible” than the County’s witnesses, and on that basis concluded that “most of Plaintiffs’ claims were submitted in accordance with Arizona law, and should have been paid.”<sup>37</sup>

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<sup>36</sup> The Hospitals argue that the County’s demand for more detailed findings could be satisfied by entry of a dozen or so boilerplate (therefore, presumably meaningless) findings as to each of the thousands of claims at issue. We do not mean to require a Special Master to issue meaningless findings of fact. Instead, we mean that when, for example, a Hospital and the County disagreed about whether a particular patient’s income fell within the statutory measure of indigence, the Master was required to make a record of his finding of the amount of the patient’s income so that his consequent conclusion that the patient is indigent may be reviewed on appeal.

<sup>37</sup> Although the Special Master denied payment of some claims, he issued no findings explaining why those claims were invalid. In some instances, the Special Master found that a hospital was

¶171 The Special Master provided no explanation, however, for why or how credibility played such an apparently dispositive role in the resolution of these claims. Neither side's witnesses had first-hand knowledge of the specific facts giving rise to the Hospitals' thousands of claims, the patients receiving those services or the manner in which the claims were evaluated before litigation. Instead, the witnesses performed technical analyses of mountains of data to arrive at their conclusions as to the merits of each claim to be tried. As a result, while the Hospitals' chief witness, Ferrell, may have been credible, her credibility was not the central issue; the validity of her computations and subordinate factual determinations was the central issue. The Special Master's determination that her abstractions were "credible" did not advance the adjudication of the sample claims.

¶172 In effect, by his heavy reliance on "credibility," the Special Master delegated the critical function of fact-finding to the litigants' competing analysts. Nothing in the record demonstrates the Special Master's personal evaluation of any of the claims or performance of what would have been an enormously time-consuming (but necessary) task: An independent evaluation of the parties' competing analyses of each sample claim.

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entitled to reimbursement of part of a claim. There are no findings explaining his decision to grant any claim in part.

¶73 Because a claim-by-claim trial to the court would have been unimaginably cumbersome and inefficient, appointment of the Special Master served principles of judicial efficiency in that the Special Master, rather than the court, was obligated to perform the detailed fact-finding required to resolve each of the claims. But the Special Master's findings, and consequently those of the superior court approving them, are inadequate because they contain no detailed analysis of the various issues each claim presented.

#### CONCLUSION

¶74 Because we are presented with a record that does not permit us to assess the propriety of the statistical sampling and extrapolation methodology employed in the Cycles and Claims Resolution trials, we must reverse the judgments in those cases. After considering the relevant evidence on remand, including any additional evidence it permits the parties to offer, the superior court may conclude that the sampling methodology that was employed satisfied the County's rights under the Rules of Civil Procedure. Even in that event, however, specific findings of fact and conclusions of law must be made as to the validity of each of the sample claims, consistent with the legal rules outlined in this Opinion and in the related memorandum decision issued this day. We likewise vacate and remand the judgment in the Post-Claims Resolution case so that specific findings may be

made as to the validity of each of the claims at issue in that case consistent with this Opinion and our related memorandum decision.

/s/\_\_\_\_\_  
DIANE M. JOHNSEN, Judge

CONCURRING:

/s/\_\_\_\_\_  
PATRICIA A. OROZCO, Presiding Judge

**S W A N N**, Judge, specially concurring.

¶75 I concur with the court's opinion in its entirety. I write separately, however, because I believe that the record reveals a structural error in these proceedings that independently requires reversal. *See Perkins v. Komarnyckyj*, 172 Ariz. 115, 119-20, 834 P.2d 1260, 1264-65 (1992) ("structural defects in the constitution of the trial mechanism, . . . defy analysis by harmless error standards" (quoting *Arizona v. Fulminante*, 499 U.S. 279, 309 (1991)) (internal quotation marks omitted)). The error, in my view, lies in the expansive role that the Special Master played in the trial of this case.

¶76 Three years before trial, the parties agreed in a Joint Pretrial Memorandum that the court should appoint a

special master "to aid in the oversight and mechanics of the substantial efforts to be required to resolve the some 30,000 counts." But their respective visions of the authority of the special master differed significantly. The Hospitals sought an order that the special master conduct hearings to decide the merits of the sample claims after consulting with a statistical expert. The court effectively adopted this proposal.<sup>38</sup>

¶77 The County proposed a three-track system consisting of discovery and litigation of key issues (Track One), "scrubbing" and withdrawal of meritless claims (Track Two) and ongoing settlement negotiations run by a separate special master (Track Three). The County sought a special master to supervise Track One, but specifically noted: "Track One can be facilitated procedurally by a special master, but the County believes that this Court should make all substantive legal decisions." The County further expressed its position that "the special master for Track One should not make findings of fact and conclusions

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<sup>38</sup> The Court's Opinion notes that ultimately the parties jointly urged the trial court to adopt the Special Master's proposed trial management plan. In my view, this does not constitute agreement to the Special Master's trial role. The Special Master's proposed plan came after the trial court's rejection of the County's proposal, its decision to employ sampling and its assurances that the County's objections to the Hospitals' methodology had been preserved. Against this background, the County's cooperation with a plan to which it objected was a practical necessity, not a voluntary act, and should not be treated as a waiver of its right to have the case tried to the court.

of law. The Court should make the substantive rulings required by Track One." The County made clear in the Joint Pretrial Memorandum that it objected to the use of sampling and to trial proceedings involving findings of fact by a special master.

¶178 Without the agreement of both parties, the court was only able to appoint a special master to hold trial proceedings if appointment was warranted by "(i) some exceptional condition or (ii) the need to perform an accounting or resolve a difficult computation of damages." Ariz. R. Civ. P. 53(a)(1)(B). To be sure, this was an exceptional case that involved a very difficult computation of damages. But there is no nexus between these circumstances and the role that the Special Master actually performed.

¶179 First, the trial before the Special Master consumed only forty hours per side - well within the duration and complexity of bench trials normally conducted by the court. There is nothing extraordinary about a trial of this length that merited appointment of a special master without the parties' express agreement. Second, while the case involved difficult questions of damages, there was nothing about the role of the Special Master in the trial of this case that added any value to the traditional judicial process. The intricacies of the damage calculation were performed by others - specialists in the medical billing records and an expert statistician. Instead of

performing an analysis of damages that required skills and resources otherwise unavailable to the court, the Special Master in this case merely considered such analyses in a manner identical to a judge. Though the court might properly have engaged a person with such special expertise as a master to make findings and recommendations concerning the damage calculation, the use of a special master to conduct a traditional trial as surrogate judge was not warranted by the circumstances enumerated in the rule.<sup>39</sup>

¶180 The use of special masters has become increasingly common as judicial caseloads have expanded, but it merits note that special masters are not to be employed to serve the traditional functions of judges - their role is limited by the narrow purposes of Rule 53. The comment to the 2003 amendment to Fed. R. Civ. P. 53 (the federal counterpart to Ariz. R. Civ. P. 53) illustrates the point: "District judges bear primary responsibility for the work of their courts. A master should be appointed only in limited circumstances. . . . Use of masters for the core functions of trial has been progressively limited."

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<sup>39</sup> To the extent that the Special Master simply assisted in the orderly administration of pretrial matters, that role was proper under Ariz. R. Civ. P. 53(a)(1)(C) because the parties consented to that role. The adjudication of more than 40,000 claims presents a nearly unprecedented administrative burden, and the court acted well within its discretion in enlisting the assistance of a master for these purposes.

¶181 It is the rare circumstance indeed in which a special master may be appointed without agreement to perform work (such as the disposition of contentious discovery disputes) that could be performed as well by the assigned trial judge. And it has long been recognized that special masters are to be used "sparingly." See 9C Charles A. Wright & Arthur R. Miller, *Federal Practice and Procedure* § 2603, at 560, 557 (3d ed. 2008) ("[T]he procedural advantage that might be derived from a reference to a master must be weighed against the fact that it deprives litigants of their traditional right to have aspects of their case passed upon by a court or jury in the first instance. And even the supposed procedural advantage must be considered in light of the expense and delay to which the litigants will be subjected by a reference under Rule 53. Litigants ought not be asked to bear the expense of a reference if the matter is one that the judge easily might hear and determine."). Because Ariz. R. Civ. P. 53 substantially mirrors its federal counterpart, I believe these considerations should bear on the appointment of masters under our rules. Here, in the absence of an agreement by the parties, I conclude that the Special Master's trial role resulted in an improperly constituted tribunal.

/s/ \_\_\_\_\_  
PETER B. SWANN, Judge