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COMMENTS

MAJOR LEAGUE BASEBALL PLAYERS, BIG DATA, AND THE RIGHT TO KNOW: THE DUTY OF MAJOR LEAGUE BASEBALL TEAMS TO DISCLOSE HEALTH MODELING ANALYSIS TO THEIR PLAYERS

MICHAEL HATTERY*

I. INTRODUCTION

The big data frontier has brought with it nearly innumerable legal concerns, ranging from traditional privacy rights to messy and flawed data collection, as well as differing interests between those engaging in predictive modeling and those who are being used as data points.¹ Major League Baseball teams are pioneers in the usage of big data, measuring players at a scale unseen in most other sectors of business.² For Major League Baseball teams, players, and especially pitchers, are huge financial assets that come with significant risk of injury and depreciation. Free agent deals and contract extensions for pitchers who are eligible for free agency can range from

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1. Janine S. Hiller, *Healthy Predictions? Questions for Data Analytics in Health Care*, 53 AM. BUS. L.J. 251 (2016) (noting the split incentive issues which arise from the health modeling using big data); Sharona Hoffman & Andy Podgurski, *Big Bad Data: Law, Public Health, and Biomedical Databases*, 41 J.L. MED. & ETHICS 56 (2013) (illuminating the potential risk of flawed or messy data); Sharona Hoffman & Andy Podgurski, *Balancing Privacy, Autonomy, and Scientific Needs in Electronic Health Records Research*, 65 SMU L. REV. 85 (2012) (arguing for a shift in the privacy rights of patients when the information exchanged serves in boosting the efficiency of big data).

2. TRAVIS SAWCHIK, *BIG DATA BASEBALL: MATH, MIRACLES, AND THE END OF A 20-YEAR LOSING STREAK* (2016) (Articulates the radical expansion of big data usage by Major League Baseball teams throughout the past decade).

\$50–\$250 million.³ With this in mind, Major League Baseball teams are pushing the envelope in terms of health modeling, relying on numerous types of big data inputs for guidance.⁴

This note proposes a precisely defined “Right to Know,” providing the basis and scope of rights in the burgeoning big data world. Beginning with the history of data collection and analysis in Major League Baseball, this paper will demonstrate the need for the Right to Know in the world of emerging data. The argument moves to the legal analysis of the tort law duties of employers to disclose health risks to employees and potential employees. Next, this note will analyze whether Major League Baseball players should be considered “employees” in regard to tort law duties. While this Right to Know is anchored in tort law, its underlying principles align with those of informed consent. The establishment of the Right to Know through legal principle and precedent provides protection for athletes in the age of big data and predictive health modeling.

The level of data collection and modeling, in which Major League Baseball teams are engaging, raises the issue of players’ rights. Specifically, the issue is a player’s Right to Know what inferences about him can be drawn from the expansive data collected.⁵ Employee disclosure of health risk is not a new concept. Indeed, it is an accepted principle that employees have a Right to Know if any significant risk is uncovered by the employer in a pre-employment exam.⁶ This places a duty to disclose on the shoulders of employers who collect extensive data on the physical health of employees. This Right to Know must be extended to baseball players whose livelihood is dependent on physical health and to data collection outside the traditional framework of medical exams. Major League Baseball players are the first to encounter a problem that will have far-reaching consequences. The Right to Know established in the context of Major League Baseball has the potential to

3. Steve Gilbert, *Zack Greinke Signs With D-backs*, MLB (Dec. 8, 2015), <http://m.mlb.com/news/article/158861948/zack-greinke-signs-with-d-backs/> (Zack Greinke signs contracts with the Arizona Diamondbacks worth 206 million dollars over six years); Quinn Roberts, *Red Sox Sign David Price to Seven Year Deal*, MLB (Dec. 4, 2015), <http://m.mlb.com/news/article/158847426/red-sox-sign-david-price-to-seven-year-deal/> (David Price a left handed pitcher signs a seven year deal with the Boston Red Sox for 217 million dollars).

4. JEFF PASSAN, *THE ARM: INSIDE THE BILLION-DOLLAR MYSTERY OF THE MOST VALUABLE COMMODITY IN SPORTS* (2016) (establishing the monetary value of the individual’s body, and then the importance of knowledge in order to make long term decisions).

5. Major League Baseball’s most recent collective bargaining agreement does not establish a player’s Right to Know regarding team data modeling but merely requires the dissemination of traditional medical information when the player reaches free agency.

6. DAN B. DOBBS ET AL., *THE LAW OF TORTS* § 420 (2d ed. 2017), Westlaw.

alter the right of those who are employed by corporations who wish to track and monitor employees in detail. It is easy to envision data collection on risk factors in high stress jobs like long haul truck drivers, pilots, or market traders. Major League Baseball is merely the tip of the iceberg in the big data evolution and the employees' rights must be protected.

The Right to Know will come at a cost for organizations because it will allow their employees to make more rational decisions about treatment and healthcare strategies. Sports teams, like other businesses, often have different short-term and long-term goals from their employees, which means that when an employee makes rational decisions in light of disclosed information the employer's ability to achieve goals may be adversely impacted. The player's Right to Know may conflict with an organization's interest in maintaining information asymmetry as it relates to player negotiations or the trading of these player assets.⁷ The Right to Know must trump these concerns because an individual's right to make informed decisions regarding his healthcare is an essential right. The era of big data makes it crucial that the Right to Know be added to the bundle of rights afforded to employees and healthcare consumers, alongside the right to privacy and the duty to provide informed consent. Therefore, Major League Baseball teams must provide their players with any predictive modeling information that may have an impact on the players' healthcare decisions.

Part II of this note introduces the proposed Right to Know as well as presenting the scope and basis of the right. Specifically, that the Right to Know places a burden on employers who collect extensive information on their employees to provide information on an employee's health risks. Part III of this note discusses the evolution of big data baseball and demonstrates the extensive amount of data that Major League Baseball teams are collecting. Section IV discusses the difficult position in which physicians and team medical staff are placed in professional sports. Most importantly, the challenges of balancing what is best for the player versus what is best for the team. Section V introduces the Colin Rea hypothetical that is used to illuminate the issues created when an organization has significantly more knowledge of an employee's health risk than the employee himself. Section VI argues that there is a legal basis for the Right to Know. The legal basis analysis is separated into two distinct parts which are the principles and practice of informed consent followed by the tort law duty of disclosure as

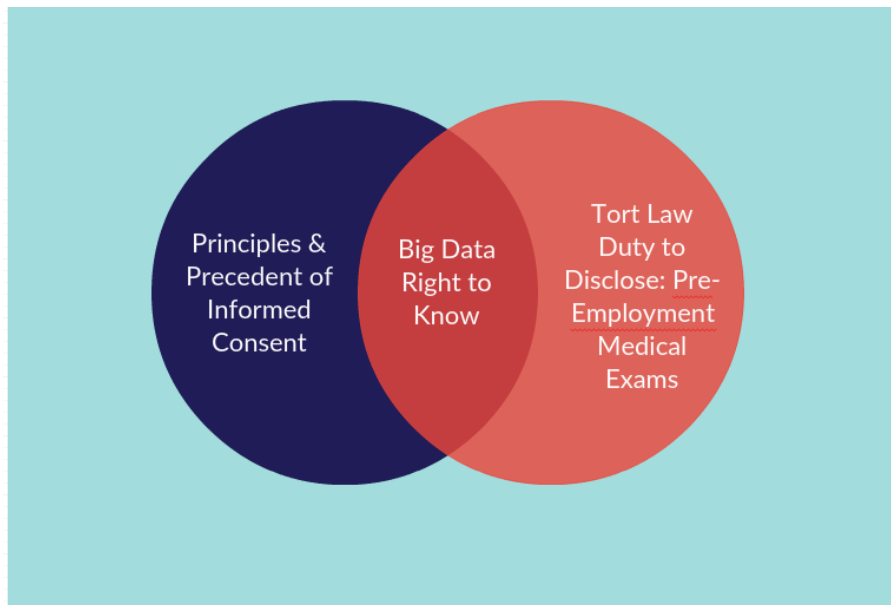
7. This comment often refers to the notion of the player as an asset to the organization he plays for. This is because in many ways teams must operate based on the notion that these are assets they must value properly in order to make optimal baseball decisions. The significant financial costs of each player and long-term projections shape how the team will use the asset, keep, trade, or cut.

seen in pre-employment and employment physicals. The construction of the Right to Know is done in conjunction with its application to Major League Baseball. Section VII considers the evolving rights of individuals in a similarly evolving context to big data, genomic testing; importantly, whether these fields will force an evolving definition of researcher and researcher duty. The final section summarizes the central arguments of the note.

II. THE SCOPE OF THE RIGHT TO KNOW

The Right to Know is a term coined and defined in this paper to provide specific healthcare access rights in the age of big data. The Right to Know is inferred from tort law doctrine and the basic principles upon which informed consent is founded. This “Right to Know” should provide individuals, specifically Major League Baseball players, with access to information that indicates significant health risks threatening the quality of life or livelihood of the player. By this inference, the Right to Know requires the possessors of the information to affirmatively give this information to the subjects of data collection and analysis.

Figure One:



This requirement would create a tort law duty of disclosure for the employer

or data collector who discovers a health risk through predictive health data modeling.

The context of this comment is about Major League Baseball because of the variety and scale of data collection in which its organizations are invested. The ability to make fundamental health decisions based on the best available information is an essential right of the healthcare consumer and requires the creation and extension of a Right to Know for Major League Baseball players.

III. THE EVOLUTION OF BIG DATA IN BASEBALL

Baseball is a game defined by numbers, be it 3,000 hits, 755 home runs, or DiMaggio's 56 game hit streak. In this way, it was riper than any other sport for big data growth. This data surge, led by writers like Bill James,⁸ manifested in Major League Baseball organizations in the 1990s. In the late '90s, the Cleveland Indians constructed the first comprehensive player data collection system called DiamondView.⁹ The Oakland Athletics would soon become famous for installing a leadership structure based on the principle that data could drive a team's success, popularized by the book *Moneyball*.¹⁰ Soon baseball teams were hiring the best and brightest data analysts from America's elite universities to synthesize the pools of information being collected.¹¹

At the outset of big data usage in baseball, the priority was finding inefficiencies in the marketplace, that is, skills that were undervalued in trades or in free agent contracts.¹² Teams in smaller economic markets needed to find holes in the marketplace where skills were undervalued, and they discovered the relevance of data points including on-base percentage, up the middle defense, and optimal reliever leverage usage.¹³ As the data grew richer and richer, and the incremental gains from player performance research continually decreased, baseball once again looked for new frontiers in its use of big data. Researchers looked to microscopic differences for advantages, implementing data analysis to measure a catcher's ability to frame the baseball. One big frontier remained: injury risk analysis. If any organization could predict and avoid serious injuries or even estimate risk with minimal

8. Bill James is in many ways the father of analytics in sports, which he began by publishing a periodical titled *Baseball Abstract*.

9. Alex Kaufman, *Moneyball, Before Moneyball Was Cool*, ESPN (June 7, 2014), http://www.espn.com/blog/sweetspot/post/_id/48166/moneyball-before-moneyball-was-cool.

10. MICHAEL L. LEWIS, *MONEYBALL: THE ART OF WINNING AN UNFAIR GAME* (2004).

11. *Id.*

12. *Id.*

13. *Id.*; JONAH KERI, *THE EXTRA 2%: HOW WALL STREET STRATEGIES TOOK A MAJOR LEAGUE BASEBALL TEAM FROM WORST TO FIRST* (2011).

error, it would have a huge informational advantage.

A. Pursuit of Big Data's Injury Risk Modeling Advantage

The race to informational advantage was led by the small market Tampa Bay Rays.¹⁴ The pursuit of this advantage was both competitive and secretive. The Rays hired a physicist and math professor named Josh Kalk, a writer on the cutting edge of analyzing PITCHf/x data, which captures significant data about a pitcher's movements.¹⁵ For Kalk this was the opportunity of a lifetime. The Rays immediately emphasized the need for Kalk's transition to their organization to remain a secret: "Tell no one, they told the new guy. Send a cryptic good-bye to the blogosphere if you want. That's it. Not only was Kalk barred from revealing the identity of his new employer, but the Rays took the added step of leaving his name off their front office directory."¹⁶

This is but one example of initiatives to create and hide proprietary risk analysis that numerous Major League Baseball organizations undertook. The issue, however, is striking. The Rays were hiring a researcher to potentially solve pitcher health risk questions, but only for their own proprietary success, not for the benefit of the individual pitcher or their league-wide counterparts.¹⁷

B. The Analytical Value of PITCHf/x Data

PITCHf/x is a useful example of the types of big data sources Major League Baseball teams collect and curate because pieces of PITCHf/x data are publicly available.¹⁸ PITCHf/x is a data collection system developed by Sportvision in 2006.¹⁹ The system collects data points as simple as velocity, but more importantly for injury modeling; PITCHf/x collects the arm angle and release point of the baseball.²⁰ Below, Figure Two displays velocity as collected by PITCHf/x and Figure Two displays release point data.²¹

14. KERI, *supra* note 13, at 189.

15. *Id.*

16. *Id.*

17. Risk factors indicative of likelihood of injury discovered by quantitative analysis should not be kept for proprietary use if they could protect an individual from injury in another organization.

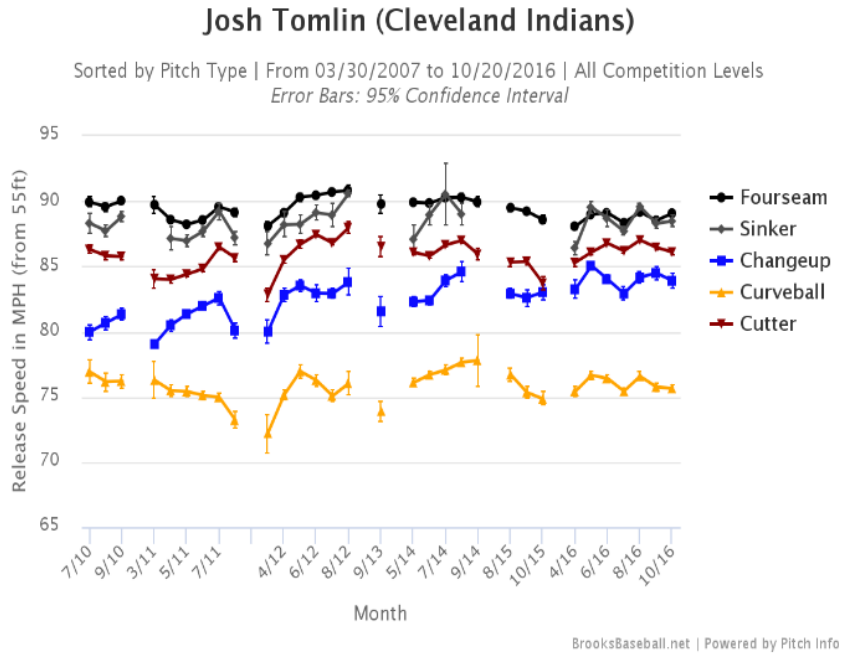
18. PITCHf/x is the portion of the iceberg above water with vast information being below the surface in the hands of proprietary analysts.

19. KERI, *supra* note 13.

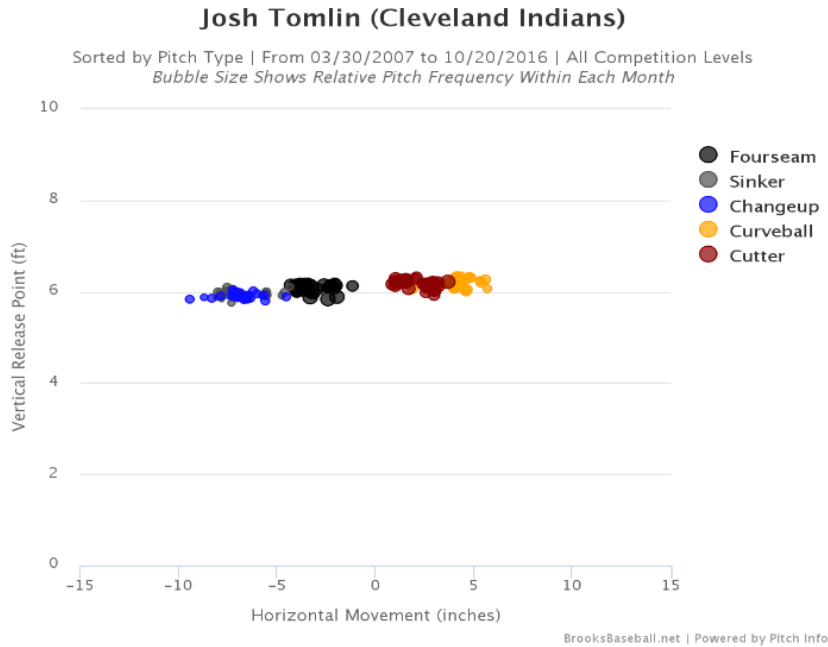
20. *Id.*

21. *Player Card: Josh Tomlin*, BROOKSBASEBALL, http://www.brooksbaseball.net/scatter.php?player=458708&b_hand=-1&x_axis=px_x&gFilt=&pFilt=FA|SI|FC|CU|SL|CS|KN|CH|FS|SB&time=month&minmax=&y_axis=x0&s_type=2&startDate=03/30/2007&endDate=01/22/2017 (last visited Dec. 14, 2017).

Figure Two:²²



22. *Id.*

Figure Three:²³

Kalk used a combination of this data and other data points to monitor in-game and long-term injury risk “by combining PITCHf/x input with an artificial neural network algorithm (a system that looks at everything from a lower arm slot to velocity changes and movement on a pitch).”²⁴ In this way, “Kalk could spot early warning signs . . . and warn of potential injury risk.”²⁵ The neural network algorithm is just one approach, and organizations can include other inputs to measure other short-term and long-term risks. These potential inputs can include full body sensors, body health monitors, and other biometric data.²⁶

PITCHf/x, while expansive in its data and inquiries, is but one data collection system used by teams. Major League Baseball’s media group, also known as BAM, has created a data collection system with seemingly infinite

23. *Id.*

24. KERI, *supra* note 13, at 189.

25. *Id.*

26. To the common person biometric data generally means not wanting to know what one’s BMI is, not anything particularly complex.

measurements.²⁷ The most recent collection breakthrough publicized in 2015 incorporates radar technology with three high-definition cameras known publicly as Statcast.²⁸ Their purpose is to collect three dimensional snapshots of every single movement that occurs on a baseball field in great detail, using roughly “40,000 frames per second converted to digital data.”²⁹ With data collection of this size, diving into the data and sorting out the noise is a time-consuming task. For instance, a routine ground out can fill the equivalent of 21,000 rows of data on a spreadsheet.³⁰

Major League Baseball’s Statcast creation is an important addition to the conversation because it tracks physical movements of pitchers and position players with a level of precision unseen in even PITCHf/x data. However, the vast nature of the data collection means that the health modeling gains will likely be incremental as organizations attempt to incorporate the sea of information into existing models. The precision of predictive health modeling is expected to improve over the course of the next decade as teams become better at parsing useful data from noisy data.³¹

IV. SPLIT INCENTIVES IN SPORTS MEDICINE

Professional athletes and professional sports teams exist in a gray and complex paradigm with regard to medical treatment. This begins with the physician-client relationship. When the physician is hired by an organization for non-therapeutic examinations his duty to the patient is unclear with professional sports teams.³² This is because the organization, the doctor’s employer, often has specific revenue interests:

Team physicians, often considered part of the team, can indirectly cause a team to lose by properly asserting that a star player is physically unable to perform. Management may work years if not decades for a chance to go to the playoffs or win a

27. Bruce Schoenfeld, *Can New Technology Bring Baseball’s Data Revolution to Fielding?*, N.Y. TIMES MAG., Sept. 30, 2016, https://www.nytimes.com/2016/10/02/magazine/can-new-technology-bring-baseballs-data-revolution-to-fielding.html?_r=0.

28. The NBA has incorporated a similar system for capturing photographs and collecting digital data called Sportvu.

29. Schoenfeld, *supra* note 27.

30. *Id.*

31. Precision is important to this conversation as the error bars on predictive health modeling remain significant.

32. Charles V. Russell, *Legal and Ethical Conflicts Arising from the Team Physician’s Dual Obligations to the Athlete and Management*, 10 SETON HALL LEGIS. J. 299, 326 (1987).

title, consequently, owners will not tolerate a team doctor who is so cautious that it causes the team to lose.³³

The conflicting pressures of short-term team gain and long-term player costs create a constant struggle.³⁴

One issue of conflicting interests in the team-doctor-player relationship is the manner in which the doctor is employed by the team.³⁵ Contract law has been used to alter the relationship between the team and players in terms of treatment.³⁶ However it is defined contractually, the relationship between physician and team is one involving enormous financial interests. Indeed, teams have even employed physicians who have a financial stake in the organization itself.³⁷ In fact, it has become increasingly common in professional sports for teams to have physicians as sponsors or partners of the teams.³⁸ This conflict-laden relationship between team physician and player is so complex and risk-heavy that scholars have suggested that physicians should be employed by labor unions rather than the teams themselves to avoid physicians being faced with split incentive problems when balancing the needs of the organization and the individual.³⁹ This approach would transition physicians from team employees to third parties whose primary duty is to the patient without the distracting concern of the impact a physician's decision may have on a physician's team-employer.⁴⁰

This complex relationship harms the player in certain circumstances, and this Comment presents two clear examples of potential conflicts. First, consider a star football player with an injured shoulder pulled from a playoff game and evaluated by the onsite physicians. The physician has a duty to the player⁴¹ but is paid by the team. There are clear risks for the player but a clear upside for the team if the player is cleared and returned to the game. Charles

33. Scott Polsky, *Winning Medicine: Professional Sports Team Doctors' Conflicts of Interest*, 14 J. CONTEMP. HEALTH L. & POL'Y 503, 504 (1998).

34. *Id.*; James H. Davis, "Fixing" the Standard of Care: Motivated Athletes and Medical Malpractice, 12 AM. J. TRIAL ADVOC. 215 (1988).

35. Russell, *supra* note 32, at 307.

36. *Id.*

37. Polsky *supra* note 33, at 503.

38. *Id.* at 523.

39. Sigmund J. Solares, *Preventing Medical Malpractice of Team Physicians in Professional Sports: A Call for the Players Unions to Hire the Team Physicians in Professional Sports*, 4 SPORTS LAW J. 235, 237 (1997).

40. *Id.* at 239.

41. *Id.* at 249.

Russell looked at sixty-seven cases in which NFL players sued their teams for being cleared to return to a game, and in every case the team physician testified on behalf of the team.⁴² To argue that the player and team have aligned medical interests would be absurd. Now consider a Major League pitcher on the mound in game four of the World Series. The team is monitoring the pitcher's PITCHf/x data and notes that his arm slot has changed significantly in the past inning and his velocity decreased.⁴³ The team can remove the pitcher to avoid further potential injury risk or continue using the pitcher in pursuit of playoff success. These situations are in many ways analogous as the team controls the player whose livelihood and happiness depend upon physical health. In this way, the data health modeling problem mirrors the dilemmas of onsite physicians.

Because of these split incentive problems, the duty to the athlete versus the interests of the employer, the Right to Know, must be extended to Major League Baseball players. When a significant portion of a player's medical advice comes from doctors and employees of a team with economic incentives, the player must be provided protections. The Right to Know is central to remedying this problem because it allows the player to move health modeling data between analysts, doctors, and organizations in order to ensure that the player is making informed medical decisions. Allowing a player access to the data and modeling collected provides him with the opportunity to evaluate the risk and avoid being manipulated by an organization whose long-term interests may be different from his. The right to informed consent and informed decision making is central to a patient's rights. Essential to informed decision making is a Right to Know the information gathered about the patient.

The Right to Know transcends medicine and has grown in other arenas as data itself has changed and evolved. The United States' legal system values the individual's right to informed decision making. One would not need to look beyond credit score access legislation to realize the importance of an individual's right to access information constructed by a data collector and potentially informing the individual's health care decision making process.⁴⁴

42. Russell, *supra* note 32, at 322.

43. Shifts in arm slot and velocity do not always belie decreased effectiveness, at least not to the point of requiring a substitution. A 2–3 MPH decrease is significant in terms of indicating a growing risk of injury but a fastball velocity decrease from 96 MPH to 94 MPH may not substantively impact expected performance. This is especially true if it widens the delta in velocity difference between a pitcher's fastball and secondary offerings. Further, a few pitchers will modulate their arm slot in order to increase the deceptiveness of pitch, therefore, arm slot changes do not inherently signal decreased effectiveness.

44. 15 U.S.C.A. § 1681 (2017).

This Right to Know will be essential to the health care consumer as doctors and insurance agencies wield modern data collecting devices like Apple Watches and FitBits and further integrate them into team's data collection tool kits.⁴⁵

V. THE COLIN REA HYPOTHETICAL

As the precision of predictive health modeling improves, the likelihood that teams will be able to identify “ticking time bomb” injuries increases. This raises the possibility of a team flipping the asset before it explodes and ultimately craters in value.⁴⁶ The notion of flipping the asset before it depreciates is born out in the Colin Rea Hypothetical. Nearing the August 1, 2016 Major League Baseball trade deadline, the San Diego Padres traded Andrew Cashner and Colin Rea to the Miami Marlins for multiple prospects.⁴⁷ Rea left the game injured in his first appearance with the Marlins, and soon after the Marlins traded him back to the Padres for one of the minor league prospects involved in the original deal.⁴⁸ Upon being returned to the Padres, Rea was immediately placed on the disabled list.⁴⁹ The Padres were quickly criticized for dealing potentially damaged goods before they depreciated in value, and similar accusations were made regarding their trade of Drew Pomeranz to the Boston Red Sox.⁵⁰ In both of these cases the Padres had compiled two sets of health records, one set to be disclosed in trade negotiations and one set to remain under confidential control of the team.⁵¹

In both of these situations, the Padres understood that two of their players had significant injury risks and would depreciate in value between August 1st

45. Porter Wright Morris, Arthur LLP, *Privacy Risks of Google Glass and Similar Devices*, 24 No. 7 Ohio Emp. L. Letter 7 (2013) (discussing the privacy right concerns and legal impacts of devices like Google Glasses and FitBits).

46. While the use of the term asset may seem inhumane and utilitarian, from the team's perspective they are best viewed as assets with either net surplus value or net loss.

47. *Major League Baseball Transactions*, MLB, http://mlb.mlb.com/mlb/transactions/?tclid=mm_mlb_players#month=7&year=2016&team_id=135 (last visited Dec. 14, 2017) (prospects are players who have yet to reach the Major Leagues and are considered long-term developmental players rather than big league ready).

48. Matt Snyder, *In Strangest MLB Trade Deadline Twist, Marlins Send Colin Rea Back to Padres*, CBSSPORTS (Aug 1, 2016), <http://www.cbssports.com/mlb/news/in-strangest-mlb-trade-deadline-twist-marlins-send-colin-rea-back-to-padres/>.

49. *Id.*

50. Michael McCann, *Padres GM AJ Preller Suspended: Can Red Sox Sue?*, SPORTS ILLUSTRATED, Sept. 16, 2016, <http://www.si.com/mlb/2016/09/16/padres-gm-aj-preller-suspended-trade-red-sox-pomeranz>.

51. *Id.*

and the offseason.⁵² The team inferred this risk by merging traditional medical evaluations with modern predictive health modeling using data collection tools. This type of practice places a player at a significant risk of being mishandled because the team in possession of his health risk data has an incentive to hide it until that player is unloaded. Therefore, the player is not being allowed to make optimal health decisions because he does not have access to information that may alter his trade value. If Rea had foreseen the risk and gone on the Disabled List for preventive treatment, he would have benefitted greatly, but the Padres would then have an essentially useless asset. The Rea Hypothetical is the reason why players must have a Right to Know what risk factors are indicated in big data and predictive health modeling.⁵³ This hypothetical is essential in framing the duties discussed in the remainder of this note.

VI. LEGAL BASIS FOR RIGHT TO KNOW

The proposed Right to Know is rooted in two major legal doctrines. The theoretical principles are those founded in informed consent, the human being's essential right to make informed decisions about medical procedures, and health treatment. Demonstrated by the following analysis, informed consent and tort law's duty of disclosure establish reciprocal rights⁵⁴ that together are the basis of the Right to Know. The legal precedent and approach is derived from the tort law duty to disclose, which applies to employers.⁵⁵ In order to trigger this legal duty, Major League Baseball players must qualify as employees under tort law.

A. The Essential Right of Informed Consent

Informed consent has become a focal point of medical practice and the law of medicine. The history of informed consent is traced to the Nuremberg Trials following World War II.⁵⁶ The Nuremberg Trials included Nazi doctors

52. *Id.*; Snyder *supra* note 48.

53. This is titled a hypothetical in this comment because of one specific modification I made. While it appears likely that big data and predictive health modeling played a role in the Padres decision it is not a certainty. Therefore, I mirrored the facts from the situation referenced with one alteration to illuminate what a data driven health decision could look like.

54. The United States Supreme Court in a First Amendment case held that where there are rights or duties there are reciprocal rights. The court held specifically "[i]f there is a right to advertise, there is a reciprocal right to receive the advertising, and it may be asserted." Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, Inc., 425 U.S. 748, 757 (1976).

55. Union Carbide & Carbon Corp. v. Stapleton, 237 F.2d 229, 232 (6th Cir. 1956).

56. David A. Lenrow, The Treating Physician as Researcher: Is Assuming This Dual Role a

who had conducted cruel medical experiments on concentration camp inmates that often disfigured or killed the subject.⁵⁷ The tribunal instituted a set of principles now known as the Nuremberg Code that provided rules for research on human subjects.⁵⁸ The first principle, and for analytical purposes the most important, was the language instituting informed consent:

The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice . . . and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision.⁵⁹

Thus, research subjects have a right to “sufficient knowledge.”⁶⁰ Sufficient knowledge requires the doctor or researcher to provide information in order that an individual makes an informed decision.⁶¹ This duty to provide information, such that an individual have sufficient knowledge, has a reciprocal right. The reciprocal right is an individual’s Right to Know the nature and risks of a procedure.

Sufficient knowledge was further defined by the tribunal when it listed the following as information that must be disclosed to the subject:

(1) the “nature, duration, and purpose of the experiment;” (2) the “method and means by which it is to be conducted;” (3) “all inconveniences and hazards reasonably to be expected;” and (4) the “effects upon his health or person which may possibly come from his participation in the experiment.” Thus, under Nuremberg, the disclosure of this information is necessary to ensure the subject’s self-determination.⁶²

Violation of the Nuremberg Code?, 25 TEMP. J. SCI. TECH. & ENVTL. L. 15 (2006).

57. *Id.*

58. Jacob Schuman, *Beyond Nuremberg: A Critique of "Informed Consent" in Third World Human Subject Research*, 25 J.L. & HEALTH 123, 125 (2012).

59. GEORGE J. ANNAS & MICHAEL A. GRODIN, THE NAZI DOCTORS AND THE NUREMBERG CODE: HUMAN RIGHTS IN HUMAN EXPERIMENTATION (1992).

60. *Id.*

61. *Id.*

62. Jennifer Y. Seo, *Raising the Standard of Abortion Informed Consent: Lessons to Be Learned*

This further definition includes broad phrases like “effects upon his health or person” and “inconveniences . . . to be reasonably expected.”⁶³ This broad language provides a philosophical anchor for a Right to Know when data collected about an individual affects his or her person and may result in a “reasonably expected inconvenience” when the data is interpreted.

As biomedical research continues to expand, the importance of informed consent as a bedrock right is growing; informed consent is a “basic ethical protection for research involving human participants.”⁶⁴ Justice Benjamin Cardozo opined, “Every human being of adult years and sound mind has a right to determine what shall be done with his own body.”⁶⁵ Since the 1970s there has been an added emphasis on “patient-centered practice” which is based on the idea that patient autonomy in medical decision-making is a priority.⁶⁶ The provision of information is essential to the achievement of this priority: “Respecting a patient’s autonomy means respecting their wishes regarding what information is relevant to their decision.”⁶⁷ The issue exists in establishing the type of information that may be considered necessary to make an informed decision.

The growth of medical data and information must evolve at a similar rate to that of the application of informed consent in order to protect the very purpose of the doctrine. As precision improves regarding morbidity and mortality rates, courts have held that a doctor must disclose statistics where there is a significant difference between success rates of different procedures or doctors.⁶⁸ Difference in treatment success, not individual doctors’ success rates, is where the duty to disclose exists.⁶⁹ Further, the seminal case *Moore v. Regents University of California* requires that doctors disclose research and economic interests that may influence treatment.⁷⁰

Informed consent occupies two interrelated spaces, doctors and medical

from the Ethical and Legal Requirements for Consent to Medical Experimentation, 21 COLUM. J. GENDER & L. 357, 364 (2011).

63. *Id.*

64. Schuman, *supra* note 58, at 124.

65. B. Sonny Bal & Theodore J. Coma, *What to Disclose? Revisiting Informed Consent*, 470 CLINICAL ORTHOPEDICS AND RELATED RES. 1346 (2012).

66. Benjamin Moulton & Jaime S. King, *Aligning Ethics with Medical Decision-Making: The Quest for Informed Patient Choice*, 38 J.L. MED. & ETHICS 85 (2010).

67. *Id.*

68. Bal & Coma, *supra* note 65.

69. *Id.*

70. *Moore v. Regents Univ. of Cal.*, 793 P.2d 479, 497 (Cal. 1990).

researchers. This comment focuses on the scope and requirements placed on researchers, but the duty placed on doctors is substantive. Informed consent as applied to doctors is most easily seen in the context of surgery. Though tort law is a state law issue, there is a national consensus spanning back into the early twentieth century that barring exceptional circumstances an operation without informed consent constitutes an assault by the doctor.⁷¹ However, the research liability is most frequently applied to doctors acting in the role of researcher. Doctors as researchers can take on different functions: researching targeted DNA structure, testing a new treatment method, or seeking more understanding of how a particular disease advances.⁷²

A team's treatment of a professional athlete is laden with research and economic interests that will impact the type of treatment recommended and provided for the player. In a league where the average team payroll for players is just above \$100 million, the economic interests of organizations are significant.⁷³ Player contracts often shift the priority of treatment for a player. A low risk arm problem will be treated differently by the organization in the case of a pitcher with four years and \$100 million remaining on his contract versus a pitcher who is pre-arbitration⁷⁴ and making the Major League minimum. Major League Baseball contracts are often insured,⁷⁵ a la Alex Rodriguez,⁷⁶ include health-based clauses that impact the earnings of the player, or manifest themselves in player-controlled vesting options.⁷⁷ A

71. See *Inderbitzen v. Lane Hosp.*, 12 P.2d 744, 747 (Cal. Ct. App. 1932) (woman subjected to extensive examinations from multiple doctors without consenting and against her will); *McClees v. Cohen*, 148 A. 124, 125 (Md. 1930) (removal of multiple teeth without the informed consent of the plaintiff); *Dicenzo v. Berg*, 16 A.2d 15, 16 (Pa. 1940) (exceptional circumstances of significant spinal injury did not require surgeon to receive consent).

72. See *Moore*, 793 P.2d at 480; *Lenahan v. Univ. of Chicago*, 808 N.E.2d 1078, 1081 (Ill. 2004) (doctor performing role of researcher failed to get proper informed consent from patient who partook in experimental chemotherapy treatments which involved t-cell removal and infusion).

73. *MLB 2017 Payroll Tracker*, SPOTRAC, <http://www.spotrac.com/mlb/payroll/> (last visited Dec. 14, 2017).

74. In Major League Baseball a team has six years of control over a player it drafts or signs before they have reached the big leagues. The first three years are pre-arbitration where players are paid the league minimum just north of \$600,000.

75. When Major League Baseball teams sign high value long-term contracts they often insure them against injury. In this circumstance, if Jason Giambi tears his ACL and the team insures him during a contract, then the insurance company would pay out whatever number the team insured him at.

76. Wallace Matthews, *Alex Rodriguez's Contract -- New York Yankees Insured for Most of \$114M* (Dec. 4, 2012), http://www.espn.com/new-york/mlb/story/_/id/8708864/alex-rodriguez-contract-new-york-yankees-insured-most-114m-source-says.

77. Players with significant injury histories will often sign contracts where health is factored in to create a long-term obligation. For instance, a player can sign a contract creating a vesting option if

player's health is so important to Major League Baseball teams that contracts often feature terms that ban certain low risk behavior like bowling, bocce, table tennis, billiards, fishing, and croquet.⁷⁸ Therefore, the economic interests teams and the physicians they employ have in players is enormous.

Research is also important to competitive advantage; tracking the performance decline curve of certain injuries could provide long-term value, informing future decision-making about players' health. Depending on the player, organizations can obtain value in trying different treatment methods to determine what the optimal future choice is no matter the short-term implications. Indeed, Major League Baseball players can be considered at any time organizational assets, research subjects, data points, and far too rarely, human beings.

In *Moore v. Regents of University of California*, the plaintiff brought a cause of action against his physicians for conversion and breach of duty because the physicians and researchers used the plaintiff's cells in research which the defendants would soon patent.⁷⁹ The plaintiff was in the midst of being treated for Hairy-Cell Leukemia and asserted that during procedures recommended to treat his malady, physicians extracted cells that would be used for their own personal research.⁸⁰ Plaintiff then argued "that his physician failed to disclose preexisting research and economic interests in the cells before obtaining consent to the medical procedures by which they were extracted."⁸¹ The power of this case is that it extends the duty of informed consent to physicians who are working as researchers with an economic or personal interest in the information. The court stated: "[a]ccordingly, we hold that a physician who is seeking a patient's consent for a medical procedure must, in order to satisfy his fiduciary duty and to obtain the patient's informed consent, disclose personal interests unrelated to the patient's health, whether research or economic, that may affect his medical judgment."⁸²

The heart of the extension in *Moore* is that those who act primarily as healthcare providers must disclose their interests, research or economic, that

the plater reaches five hundred plate appearances or two hundred innings, major health milestones. Jeff Todd, *Options in MLB Contracts: Primary Option Types*, MLB TRADE RUMORS (Jan. 31, 2014), <http://www.mlbtraderumors.com/2014/01/options-in-mlb-contracts-primary-option-types.html>.

78. Tyler Kepner, *BASEBALL; Boone's Injury Could Cost Him His Contract*, N.Y. TIMES (Jan. 27, 2004), http://www.nytimes.com/2004/01/27/sports/baseball-boone-s-injury-could-cost-him-his-contract.html?_r=0.

79. *Moore v. Regents of Univ. of Cal.*, 793 P.2d 479, 480 (Cal. 1990).

80. *Id.*

81. *Id.*

82. *Id.* at 485.

would impact their treatment of the players. Doctors who render patient care are generally involved in a team-constructed system where the team itself is the primary care provider.⁸³ Major League Baseball team medical staffs are large groups, including a medical director, head trainer, other physicians, specialists in sports medicine, and now, data analysts.⁸⁴ Players have the right to request a second opinion from physicians and analysts outside the organization.⁸⁵ However, the team health and wellness apparatus is so tightly integrated that second opinions are generally only requested when a player is facing significant injury prognosis.⁸⁶ In terms of day-to-day treatment, which is significant over the course of a grueling 162-game season, players are treated by trainers who are interacting with the rest of the team's medical staff.⁸⁷

As *Moore* notes, informed consent has traditionally been a duty triggered through medical research, though this holding regarding research roles creates broader implications.⁸⁸ However, physician-only does not serve as a limit in the Major League Baseball context. To use the small market Cleveland Indians as an example, they directly employ a Head Team Physician and five other physicians.⁸⁹ Further, they contract with eleven consulting physicians and employ seven in their training department.⁹⁰ Risk indicators calculated using big data in predictive health modeling is a portion of in-house treatment which leads to a team having one of its physicians meet with the player.⁹¹ For the player not to be informed of the results of risk-modeling analysis that prompted a meeting with the physician defies principles of informed consent established in the Nuremberg Code and *Moore*.

Even mid-twentieth century disclosure practices required that the doctor

83. Dr. Struan Coleman, *The Role of an MLB Team Physician*, HSS BLOG (Apr. 8, 2016), <https://www.hss.edu/playbook/the-role-of-an-mlb-team-physician/#.WHe2KPrKM8>.

84. *Id.*

85. Paul Hoynes, *Second Opinion Reveals Cleveland Indians' Michael Brantley Has Right Biceps Tendinitis*, CLEVELAND (June 21, 2016), http://www.cleveland.com/tribe/index.ssf/2016/06/second_opinion_reveals_clevela.html.

86. Grant Brisbee, *David Price Is Getting a Second Opinion from Dr. James Andrews, Which Usually Doesn't End Well*, SB NATION (Mar. 2, 2017), <http://www.sbnation.com/2017/3/2/14790838/david-price-injury-dr-james-andrews-second-opinion>.

87. Coleman, *supra* note 83.

88. *Moore v. Regents of Univ. of Cal.*, 793 P.2d 479, 480 (Cal. 1990).

89. *Front Office*, CLEVELAND INDIANS, http://cleveland.indians.mlb.com/team/front_office.jsp?c_id=cle (last visited Dec. 14, 2017).

90. *Id.*

91. KERI, *supra* note 13.

provide an acknowledgment of the risks of a procedure.⁹² At first glance, this simple requirement seems to be inapplicable to the Major League Baseball player who has a significant risk of shoulder destruction. Informed consent includes the need to disclose the risks of a specific course of medical treatment.⁹³ Ignoring a risk is a course of treatment. Choosing to require a pitcher to continue pitching despite significant risks of more extensive physical damage is a choice of treatment. Choosing to do the aforementioned without information detailing the potential risk of doing so should constitute a lack of informed consent because the players reciprocal Right to Know has been violated. Therefore, offering no treatment despite a significant risk of injury indicated by predictive health modeling is a breach of informed consent because the player has not been provided his Right to Know, implicit in informed consent.

B. Pre-Employment Exams and the Right to Know

Traditionally, one of the first events that occurs after a hiring in certain jobs is a pre-employment physical. An employer may require an employment physical after an offer has been extended, and before the applicant has commenced his work, if all entering employees are subjected to the test and the information discovered is treated by the employer as confidential medical information.⁹⁴ The purpose of this limitation is to stop employers from using pre-employment information to discriminate against potential employees with disabilities.⁹⁵ Pre-employment and continuing physicals are similar to almost any other common medical care physical, checking basic indicators or markers, although at times including physical exams which are not strictly considered medical examinations.⁹⁶ However, they can, with consent of the employee, include advanced biometric data.⁹⁷

Pre-employment exams provide significant information to the employer regarding the long-term health risks of the employee and can serve as a tool to

92. Bal & Coma, *supra* note 65.

93. *Id.*

94. 42 U.S.C.A. § 12112 (2017) (Americans with Disabilities Act limits medical exams in timing the in the following way: “[e]xcept as provided in paragraph (3), a covered entity shall not conduct a medical examination or make inquiries of a job applicant as to whether such applicant is an individual with a disability or as to the nature or severity of such disability”).

95. Maureen E. Mulvihill, *Karraker v. Rent-A-Center: Testing the Limits of the ADA, Personality Tests, and Employer Preemployment Screening*, 37 LOY. U. CHI. L.J. 865, 866 (2006).

96. ADA Compliance Guide ¶ 231 Defining ‘Medical Examinations,’ Westlaw.

97. *Id.* at ¶ 234-4 Wellness Programs.

siphon off high-risk employees.⁹⁸ With this advantage for employers comes a duty to disclose significant health risks, demonstrated below in the case law review. With any duty to disclose comes a reciprocal right, in this sphere a Right to Know. A duty for one party to disclose information implies a right to the other party that they know the information. With the scope of information discovered, an issue regarding a patient's Right to Know surfaced: the breadth of a doctor's duty to disclose findings of a physical which denote significant health risk to the employee.

1. Case Law

The question of the scope of the duty of disclosure and its reciprocal rights is in many ways easily resolved, as the potential gain for the employee far outweighs the additional duty placed on the doctor. In balancing the interests of the two parties, a physician's burden of informing the examinee of a discovered medical condition is significantly less onerous than the examinee's interest in maintaining health and life.⁹⁹ In *Stanley v. McCarver*, an Arizona Supreme Court case, the court holds that once a physician undertakes an examination, a physician is obligated to disclose the results to patients: "We hold only that a doctor who, for consideration, undertakes to read x-rays, on which he observes serious abnormalities, must act reasonably in reading the x-rays and reporting the results."¹⁰⁰ *Stanley* anchors the duty to disclose in the heart of tort law: "The duty emanates from the panoply of social concerns that generally inform tort law."¹⁰¹

The potential value of disclosure is easily seen as many health problems disclosed in pre-employment exams are treatable.¹⁰² Many diseases that are diagnosed through x-rays (a procedure typically administered during pre-employment examinations) can be treated with a significant probability of success if the treatment begins in the early stages of the disease.¹⁰³ If not, a

98. Jan W. Sturner, *Preemployment Medical Exams Under the ADA: Conditional Job Offers and the Application of the Mixed-Motives Framework*, 50 ARK. L. REV. 449, 450 (1997).

99. Marki Stewart, *Great X-pectations: Protecting Examinees' Reliance That No News Is Good News*, 37 ARIZ. ST. L.J. 229, 242 (2005).

100. *Stanley v. McCarver*, 92 P.3d 849, 855 (Ariz. 2004) (patient brought medical malpractice action against radiologist arguing that the radiologist failed to inform her of a health risk he had a duty to disclose. Court held that physician-patient relationship is not necessary for a duty to inform to exist).

101. *Id.* at 856.

102. Alison Doyle, *What Does a Pre-Employment Physical Include?*, THE BALANCE (Aug 2, 2017) <https://www.thebalance.com/pre-employment-physicals-2060485> (asthma, high blood pressure, heart problems, and other health problems discovered).

103. Stewart, *supra* note 99, at 229.

potentially treatable condition can spiral into one that is harder to treat or even fatal.

The case law establishing the employer's duty to disclose harmful conditions discovered in pre-employment exams is expansive.¹⁰⁴ An employee may reasonably expect that if anything serious is discovered in the pre-employment physical, he will be notified, and when the employee does not receive notification it is reasonable to believe nothing was uncovered. For this reason, the employer generally owes a duty to disclose serious findings from the pre-employment exam.¹⁰⁵

In *Union Carbide & Carbon Corp. v. Stapleton*, an employee, Stapleton, was a World War I veteran who had been exposed to mustard gas.¹⁰⁶ His employer took yearly X-rays and discovered that the employee suffered from pulmonary tuberculosis.¹⁰⁷ The employer failed to notify Stapleton of his worsening condition during his employment.¹⁰⁸ In an opinion crafted by future Supreme Court Justice Potter Stewart, the court found that the employer had a duty to disclose.

Failure of the appellant to disclose to Stapleton what its records showed his condition to be was clearly a violation of its duty to exercise ordinary care for his safety. By remaining silent, the appellant permitted Stapleton to rely upon a tacit assurance of safety despite its knowledge of the existence of danger.¹⁰⁹

The duty to disclose extends through the duration of the relationship between the employee and the employer.¹¹⁰ *Union Carbide* establishes that when an employer collects medical information about an employee and the information indicates a health risk, the employer must disclose this risk to the employee.¹¹¹

104. See *Union Carbide & Carbon Corp. v. Stapleton*, 237 F.2d 229, 234 (6th Cir. 1956); *Dornak v. Lafayette Gen. Hosp.*, 399 So. 2d 168, 170–71 (La. 1981); *McKinney v. Bellevue Hosp.*, 183 A.D.2d 563, 566 (N.Y. App. Div. 1992); *Reed v. Bojarski*, 764 A.2d 433, 441 (N.J. 2001); *Stanley*, 92 P.3d at 853.

105. DOBBS ET AL., *supra* note 6.

106. *Stapleton*, 237 F.2d at 234.

107. *Id.* at 231.

108. *Id.*

109. *Id.* at 232.

110. *Id.*

111. *But see Brittingham v. Gen. Motors Corp.*, 2011-Ohio-6488; *Battistella v. Soc'y of N.Y. Hosp.*, 9 A.D.2d 75, 77 (N.Y. App. Div. 1959).

In essence, when the employee knows information is being collected regarding her health, she then has a Right to Know any risks the data uncovers.

The Right to Know exists in the relationship between employer and employee, or employer and potential employee, but has not yet been extended to other types of relationships where the parties use pre-contractual medical exams.¹¹² The other instance where pre-contractual medical exams frequently occur is health, disability, long-term care and life insurance. However, in these contexts, courts have frequently found that an insurer does not have a duty to disclose health risks discovered in examinations for the purpose of determining insurance coverage.¹¹³ In this way, the duty to disclose and by extension the Right to Know has been limited to the employer-employee relationship.¹¹⁴ The question this raises is whether Major League Baseball players should be categorized in the employer-employee bucket or the health insurance policy applicant bucket.

Major League Baseball teams collect health information throughout the employment of a player. Just as the employer in *Union Carbide* collected X-rays, Major League Baseball teams collect troves of information from X-rays to PITCHf/x and Statcast data, integrating big data into predictive health modeling. To determine that the risk findings created by big data exist outside the duty to disclose would undermine the purpose of the duty. As tort law modulated to include the findings of technological advancements like blood testing and X-rays, it must modulate once again to establish a Right to Know the implications discovered during big data collection and analysis. From pitch velocity to arm slot to front foot landing spot, all of the data these teams collect influences the precision of data modeling regarding health risks; therefore, it must all be considered medical data.

2. Major League Baseball Players Qualify as Employees

Major League Baseball players are retained by Major League Baseball teams under contractual agreement for work performance. Players' salaries are paid by Major League Baseball teams, and they take part in pre-employment exams. When players are drafted from U.S. colleges or high

112. *Deramus v. Jackson Nat. Life Ins. Co.*, 92 F.3d 274, 282 (5th Cir. 1996).

113. *See McLachlan v. N.Y. Life Ins. Co.*, No. CIV.A. 05-0052, 2006 WL 6618105, at *8 (E.D. La. Apr. 3, 2006), *aff'd*, 488 F.3d 624 (5th Cir. 2007); *Doe v. Jackson Nat. Life Ins. Co.*, 944 F. Supp. 488, 497 (S.D. Miss. 1995), *aff'd sub nom. Deramus v. Jackson Nat. Life Ins. Co.*, 92 F.3d 274 (5th Cir. 1996).

114. This is a strange limitation because a foundational principle for the duty to disclose being placed on the employer is that the employee or applicant is under the belief that no news is good news. This belief is seemingly unchanged in the life or health insurance context but is not extended.

schools, each is given a physical before agreeing to a contract with a Major League organization. These pre-employment exams also occur when signing a player from the international talent pool and in post-arbitration free agency.¹¹⁵

For the sake of labor agreements and collective bargaining, legal analysis has qualified players as employees.¹¹⁶ The National Labor Relations Act and the National Labor Relations Board qualify Major League Baseball players as employees. The National Labor Relations Board acknowledged that Major League Baseball players are employees¹¹⁷ and this position was affirmed in the Curt Flood case.¹¹⁸ The employee rights bargained for through the Fair Labor Standards Act have made the Major League Baseball Players Association an incredibly powerful entity that has nearly leveled the profit shares between players and owners.¹¹⁹ For the purposes of this analysis, the Supreme Court's categorization of Major League Baseball as interstate commerce, triggering the Fair Labor Standards Act and protecting the players as employees, qualifies them as employees when evaluating pre-employment physicals.

This Right to Know founded in tort law and demonstrated via application to Major League Baseball's data frontier can be extended to individuals who work in more common white-collar and blue-collar jobs become more highly monitored. When it comes to individuals in high-stress jobs, monitoring underlying health data with devices like a Fitbit, Healthbox from Under Armour, MyUVPatch, or Oxxiom, businesses can collect constant heart rate data, UV exposure, body fat, workout intensity, and sleep quality. With all of this collected information being electronically transferred to create large databases, companies like Major League Baseball teams have many opportunities to evaluate employee health risk.

115. See Mike Oz, *Astros Fail to Come to Terms with No. 1 Overall Pick Brady Aiken, Two Others*, YAHOO SPORTS (July 18, 2014), <http://sports.yahoo.com/blogs/mlb-big-league-stew/astros-fail-to-come-to-terms-with-no--1-overall-pick-brady-aiken--two-others-215717197.html> (Astros fail to sign draft pick Brady Aiken because of a post draft physical); Mark Polishuk, *Possible Snag in Deal Between Orioles, Yovani Gallardo*, MLB TRADE RUMORS (Feb. 24, 2016), <http://www.mlptraderumors.com/2016/02/possible-snap-in-deal-between-orioles-yovani-gallardo.html> (Orioles agreement with free agent Yovani Gallardo breaks down following physical examination).

116. William B. Gould IV, *Labor Issues in Professional Sports: Reflections on Baseball, Labor, and Antitrust Law*, 15 STAN. L. & POL'Y REV. 61, 76 (2004).

117. *Id.* at 66.

118. *Flood v. Kuhn*, 407 U.S. 258, 282 (1972) (holding that Major League Baseball was engaged in interstate commerce, thus activating the Fair Labor Relations Act).

119. Ross E. Davies, *Along Comes the Players Association: The Roots and Rise of Organized Labor in Major League Baseball*, 16 N.Y.U. J. LEGIS. & PUB. POL'Y 321 (2013).

VII. GENOMIC TESTING, RESEARCH SUBJECTS, INCIDENTAL FINDINGS, MAJOR LEAGUE BASEBALL AND THE RIGHT TO KNOW

Genome testing, like big data, has risen to the forefront of medical research with seemingly limitless potential to improve lives as well as create ethical dilemmas. Much like big data in baseball, it sits in the center of the Venn diagram incorporated on page 7 with an uncertain legal future. The collection and growth of genetic data is developing rapidly, at times outpacing our ability to develop legal principles to guide the field. Genome research has been used to evaluate many potential inherited illnesses, from mental illness to cancer.¹²⁰ The breadth of genomic research is staggering, “[W]ith these new technologies, researchers are no longer limited to interrogating certain targeted portions of the genome; instead they can conduct genome-wide analyses, casting a wider net in the hopes of finding answers to their research questions.”¹²¹

In the analysis of these large genomic data sets, researchers will at times run into incidental findings.¹²² Incidental finding is best defined in the following way: “finding concerning an individual research participant that has potential health or reproductive importance and is discovered in the course of conducting research but is beyond the aims of the study.”¹²³ Incidental findings concern a number of discoveries that may affect the life of the individual, such as “misattributed paternity,” family disease risk analysis, or potentially risky genome sequences which are indicative of long-term health concerns.¹²⁴

The concept of incidental findings fits the context of Major League Baseball. Those in charge of predictive health monitoring are collecting any possible data and spitting out findings without always having a target in mind. When parsing through data on a scale not seen before for indicators of health injury risk, the likelihood of incidental findings is significant. The cost of genome testing is in nearly constant decline, increasing access and use by the general public.¹²⁵ Not surprisingly, Major League Baseball was an early

120. Elizabeth R. Pike et al., *Finding Fault? Exploring Legal Duties to Return Incidental Findings in Genomic Research*, 102 GEO. L.J. 795, 797 (2014).

121. *Id.* at 800.

122. Brian Van Ness, *Genomic Research and Incidental Findings*, 36 J.L. MED. & ETHICS 292, 296 (2008).

123. *Id.* at 293.

124. *Id.*

125. Pike et al., *supra* note 120.

mover in genomic testing. On July 16, 2009, the New York Yankees relied on genetic testing to show that a prospect they had signed was actually lying about his name and age.¹²⁶ With genomic testing as yet another data point, Major League Baseball teams collect that which can be used in predictive health modeling. Like the other types of data discussed above, the results of genomic testing continue to blur lines and split incentives for the players, physicians, and researchers employed by teams.

Genomic testing raised questions for the legal community that were eerily similar to those of the growth of big data: determining what information individuals in a research study had a Right to Know. While there was a majority that believed a Right to Know existed, it was not constructed on a clear tort law principle but certain malleable structures of ethics.¹²⁷ There is no scholarly consensus based on legal precedent, but rather anchored in medical ethics. However, there is a strong legal argument brought forth that this would be required disclosure under tort law. At the outset of the genomic boom attorneys argued that a tort law duty existed: “[g]eneral tort principles of reasonable reliance provide that a person’s failure to disclose the existence of a known danger may result in liability for negligence where the plaintiff is misled.”¹²⁸ Though the relationship between doctor and patient is one that requires disclosure because of the well-defined duties of a physician, researchers exist in a gray area.

*A. Researcher Classification: Are Organizational Data Analysts
“Researchers”?*

Researchers can be classified in two distinct ways: as a new category entirely with no fiduciary duty, or in the bucket with third party physicians, a la those who are hired to perform pre-employment or during-employment exams. Third-party physicians have largely been held to have a legal duty of disclosing incidental findings.¹²⁹ Beyond this potentially analogous circumstance, there has been limited case law suggesting that researchers have a legal duty to disclose: “Most notably, the highest court in Maryland held, in *Grimes v. Kennedy Krieger Institute*, that there usually is a legal duty of care

126. Pete Shanks, *Baseball and Genetic Testing*, PSYCHOL. TODAY (Aug. 3, 2009), <https://www.psychologytoday.com/blog/genetic-crossroads/200908/baseball-and-genetic-testing>.

127. Pike et al., *supra* note 120.

128. Sandra K. Lauro, *The Science of Discrimination: Genetics in the American Workplace*, 35 BRIEF 14, 24 (2005).

129. *Reed v. Bojarski*, 764 A.2d 433, 444–45 (N.J. 2001); *Meinze v. Holmes*, 532 N.E.2d 170, 173–74 (Ohio Ct. App. 1987).

in nontherapeutic research, and that a breach of this duty can give rise to a viable negligence action.”¹³⁰ There is momentum towards researcher duty to disclose in cases like *Pehle v. Farm Bureau Life Insurance Company*,¹³¹ but no cohesive majority approach has been cemented.¹³²

In *Pehle*, plaintiffs were husband and wife who had unbeknownst to them contracted HIV and applied for life insurance from Farm Bureau Life Insurance Company.¹³³ Farm Bureau forwarded their blood samples for blood tests at a third party laboratory named LabOne, and upon receiving the results informed the plaintiffs that they would be denied coverage.¹³⁴ Further, Farm Bureau was willing to disclose the reason for denial if plaintiffs would like them to do so.¹³⁵ Plaintiffs filed suit against both Farm Bureau and LabOne.¹³⁶ *Pehle* held that the LabOne relationship was too attenuated to hold the researcher liable but where a relationship exists in Farm Bureau the research creates a duty.¹³⁷ This opens the door to a stronger relationship placing a duty on the research organization.

Genomic research and big data health modeling are in many ways similar as they represent new technologies, new approaches that tort law has yet to adapt to. This is not a new phenomenon as law often struggles to keep up with the expansion of technology. Yet it appears that the past fifteen years have put technological discovery on an exponential growth curve, with law inept to catch up.¹³⁸ Tort law will eventually be extended to address the radical evolution of big data, but this extension must occur before too much harm to individuals is done.

VIII. CONCLUSION

Big data is a modern addiction. Whether in the form of collecting your step count, evaluating the reach of your Twitter audience, or projecting an individual’s personality based on Facebook likes, big data is everywhere. In

130. Matthew P. Gordon, *A Legal Duty to Disclose Individual Research Findings to Research Subjects?*, 64 FOOD & DRUG L.J. 225 (2009).

131. 397 F.3d 897, 899 (10th Cir. 2005).

132. Gordon, *supra* note 130, at 226.

133. 397 F.3d at 899.

134. *Id.*

135. *Id.*

136. *Id.*

137. *Id.* at 901.

138. Vivek Wadhwa, *Laws and Ethics Can't Keep Pace with Technology*, MIT TECHNOLOGY REVIEW (Apr. 15, 2014), <https://www.technologyreview.com/s/526401/laws-and-ethics-cant-keep-pace-with-technology/>.

health law, and ultimately tort law, there are a lot of tradeoffs that must be considered before constructing a comprehensive system to adjudicate an individual's Right to Know. Major League Baseball is one of the most data rich climates that currently exists, in which teams collect nearly limitless data and sift through information in order to create competitive advantages.

Using advanced data collection systems like PITCHf/x and Statcast, Major League Baseball teams compete to create the most precise injury prediction models possible in order to protect and optimize the use of their player-assets. While this technology has the potential to offer tremendous value to both team and player, it comes with a potential conflict of interest. Players' goals are not always congruent with those of the organization: the player strives to protect his own career while the team is attempting to capitalize on the value of an asset. For this reason, the player has an interest in accessing data that analyzes his potential injury risk. This highlights a greater problem in big data: what rights will individuals possess regarding their own data points?

This greater problem is solved by extending the Right to Know to adapt to the evolution of big data. Informed consent and informed decision making are core rights in American jurisprudence. Inside the bundle of sticks that compose informed consent exists the Right to Know. Informed consent cannot occur without knowledge of the risks; and knowledge of risks cannot exist without an implicit Right to Know. This Right to Know and emphasis on informed consent is found in many contexts, be it a person's credit rating or the results of a pre-employment medical exam.

Tort law has become increasingly uniform in determining that pre-employment and employment medical exams performed by a third party physician carry a duty to disclose any serious risk discovered by the physician. This is founded on the notion that any employee whose employer is collecting information on the risk or health of its employees trusts the physician or employer to disclose known risks. That is, by collecting this data, the employer creates a relationship with a trusting potential employee. Therefore, a Major League Baseball team collecting genomic information, PITCHf/x, Statcast and other data to integrate into an advanced risk model is incurring a duty to disclose any risk discovered to the player.

This Right to Know must then be extended to employees of employers who use different devices to monitor the health and stability of their employees. The Right to Know is derived a) from the purpose of informed consent, b) tort law decisions in cases involving the duty to disclose, and c) rights of access in other informational contexts. As big data expands to influence more and more of an individual's decision-making patterns, the Right to Know must grow alongside it.