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LEGAL AND ETHICAL IMPLICATIONS OF ATHLETES' BIOMETRIC DATA COLLECTION IN PROFESSIONAL SPORT

BARBARA OSBORNE* AND JENNIE L. CUNNINGHAM**

I. INTRODUCTION

“Big data” has existed in some form for decades, but it has finally arrived in the public’s consciousness in a proportionately “big” way. This new awareness of big data is partially attributed to an exponential increase in the volume of data collection, and partially to the nature of how it is stored and accessed—primarily on cloud servers, in addition to or as a substitute for traditional servers. This awareness is also precipitated by a recent series of high profile data breaches. In some cases, the breaches compromised personal information of millions of consumers, email subscribers, and patients;¹ in others, national security.²

Athletes’ biometric data (ABD)³ comprises a valuable subcategory of big data. The use of biometric data in the sports industry is not new. Historically, teams have collected and used a wide variety of biometric and biomechanical measurements, including vertical jump, pitch speed, reaction time, heart rate,

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1. Margaret Cronin Fisk, *Yahoo Failed to Protect Consumers from Hacking, Lawsuit Says*, BLOOMBERG, Dec. 15, 2016, <https://www.bloomberg.com/news/articles/2016-12-15/yahoo-failed-to-protect-consumers-from-hacking-lawsuit-says>.

2. Katie Bo Williams, *FBI, DHS Release Report on Russia Hacking*, THE HILL, Dec. 29, 2016, <http://thehill.com/policy/national-security/312132-fbi-dhs-release-report-on-russia-hacking>.

3. Biometric data ranges from heart rate variability and weight to acceleration/deceleration measurements to physiological indicators like chemicals found in sweat. Katrina Karkazis & Jennifer R. Fishman, *Tracking U.S. Professional Athletes: The Ethics of Biometric Technologies*, 17 AM. J. BIOETHICS 45, 46 (2017).

body composition, and self-reported wellness information.⁴ Under a general definition, biometrics is the measurement and analysis of any particular physical characteristic,⁵ and more specifically refers to the methods for doing so.⁶ For readability purposes, this paper refers to both biometric and biomechanical data as either “biometric data,” “biodata,” or “ABD.” “Biometric data” is properly defined as measurements or records that can be used to identify people as individuals; identifiers may be physiological (such as heart rate, temperature, and blood sample analysis) or behavioral.⁷ “Biomechanical data,” in comparison, comprises measurements having to do with the study of how the body works the way it does, and is particularly concerned with the effects of force on structures like the skeletal and muscular systems.⁸ Sport biomechanics typically focus on various measurements of body loading, and may include analysis of the interaction between the athlete and the athlete’s equipment.⁹ ABD collection instruments include traditional technology like heart rate monitors, but the latest innovation is the relatively recent adoption in the United States of wearable devices (“wearables”). The devices are rapidly increasing in sophistication—capable of collecting a huge array of biometric and biomechanical indicators, which can be synthesized and analyzed with each other and with other measurements. Cutting edge ABD

4. *See id.* at 45.

5. Broadly, biometrics is defined as “the measurement and analysis of unique physical or behavioral characteristics [] especially as a means of verifying personal identity.” *Biometrics*, MERRIAM-WEBSTER ONLINE DICTIONARY, <https://www.merriam-webster.com/dictionary/biometrics> (last visited Dec. 14, 2017).

6. *What Is Biometric Data?*, WISEGEEK, <http://www.wisegeek.com/what-is-biometric-data.htm> (last visited Dec. 14, 2017); Kristy Gale, *The Sports Industry’s New Power Play: Athlete Biometric Data Domination*, SPORTTECHIE (Mar. 3, 2017), <https://www.sporttechie.com/the-sports-industrys-new-power-play-athlete-biometric-data-domination/>.

7. *See What Is Biometric Data?*, *supra* note 6; *see also* Michael P. Daly et al., *Biometrics Litigation: An Evolving Landscape*, DRINKER BIDDLE, Apr. 1, 2016, <http://www.drinkerbiddle.com/insights/publications/2016/04/biometrics-litigation>.

There is no universally accepted definition of biometrics. Different definitions often are used depending on the context. In the most general terms, biometrics usually refers either to measurable human biological and behavioral characteristics that can be used for identification, or the automated methods of recognizing an individual based on those characteristics.

Id. This paper refers primarily to the former understanding of biometrics, but considers the privacy and security concerns attendant to the latter as well.

8. *About Biomechanics*, THE BRIT. ASS’N OF SPORT & EXERCISE SCIS., <http://www.bases.org.uk/Biomechanics> (last visited Dec. 14, 2017).

9. *Id.*

devices gather one thousand data points per second, per athlete.¹⁰

The purpose of this study is to explore the legal and ethical implications of ABD collection in professional sport. As technology constantly advances, the sports industry's use of new methods and measurements continues to grow as well. To determine the legal and ethical implications, it was necessary to first learn what technologies the teams in various leagues are currently using, what data was being collected, and how the data was being used. Next, a comprehensive examination of existing legal resources was conducted to determine what legal and ethical issues were implicated by using ABD in professional sport.

The paper proceeds in six sections, including the introduction. Part II presents an overview of the current status of ABD collection in professional sport leagues in the United States, including a discussion of the type of data being collected (and issues related to categorization of data), why it is being collected, and how it is being used. Part III focuses on the healthcare and health privacy related aspects of ABD collection, and analyzes whether some or all of ABD would be covered by federal regulations like the Health Insurance Portability and Accountability Act of 1996 (HIPAA). In Part IV, the discussion moves to the implications of ABD on employment and labor law, and vice versa, including a discussion of the impacts of collective bargaining agreements (CBAs) and individual player contracts relative to ABD and health privacy in general. Part IV also briefly addresses the implications of ABD collection for unsigned and minor league athletes.¹¹ Part V synthesizes the previous discussions with a focus on ABD "ownership," and privacy and security concerns particular to the collection and use of ABD. In Part VI, we offer tentative conclusions about the current legal and ethical status and future implications of ABD use and collection in professional sport.

10. Telephone Interview with Rep. from a Major Wearable Tech. Co. (Feb. 23, 2017) [hereinafter Wearable Tech. Co. Telephone Interview]. See LORENA MARTIN, *SPORTS PERFORMANCE MEASUREMENT AND ANALYTICS* (2016).

11. A full overview of ABD collection in amateur sport and/or collegiate sport is beyond the scope of this paper, but it should be noted that biodata collection at the amateur levels may have large impacts on the use of such data at the professional level, including recruiting, tryouts, draft, and contract negotiations. ABD collection at both the minor league and collegiate levels is already predominant, and perhaps to an even greater degree, than at the professional level. Telephone Interview with High-Level Adm'r, MLB (Feb. 21, 2017) [hereinafter MLB Telephone Interview I].

II. COLLECTION AND USE OF ATHLETES' BIOMETRIC DATA IN PROFESSIONAL SPORT

A. Methodology

No published source provides a listing of the biometric data collected in professional sport; therefore, it was necessary to generate the information. This was accomplished through personal interviews with contacts in the various United States leagues. In order to study a manageable sample, leagues most heavily utilizing ABD were selected for research: MLB, MLS, NBA, NFL, and NHL. The interview contacts included high-ranking team staff members, league administrators, and a representative from a major wearables vendor. Staff represented a range of expertise and departments, including analytics, legal, performance coaching, and sport science. All interviewees requested anonymity for both themselves and their teams.¹² Semi-structured personal interviews were conducted using the theoretical sampling technique. The interviews were semi-structured with ten to twelve questions guiding the conversation based on the information needed. Ten participants in total were interviewed.

B. Types of Data

Professional sports teams use ABD for various reasons, and each team is unique in the degree and purposes to which it is collected and utilized. The most common reasons are to monitor a player's health, wellness, and performance; establish baselines, perform diagnostics, understand player load, educate coaches (and players) on the effects of training on players;¹³ and to design appropriate training and recovery regimens—key priorities are to develop the players, prevent and monitor injuries, and injury rehabilitation. Teams also collect ABD in a vetting capacity, to determine the reliability of the products (collection instruments).

Teams have historically measured many items that would be considered

12. Theoretical sampling, a method of data collection where a researcher simultaneously collects, codes, and analyzes the data, was the conceptual framework utilized in gathering the data. Grounded theory and theoretical sampling is further explained in JULIET CORBIN & ANSELM STRAUSS, *BASICS OF QUALITATIVE RESEARCH: TECHNIQUES AND PROCEDURES FOR DEVELOPING GROUNDED THEORY* 144 (3d ed. 2012).

13. One high level administrator characterizes this as the capacity “to give the cost of doing business of practice.” Telephone Interview with High-Level Adm’r, MLS (Mar. 2, 2017) [hereinafter MLS Telephone Interview].

biometric data¹⁴ and medical information,¹⁵ and continue to do so, using either traditional methods or the new generation of wearables: cardiac and respiratory related data like heart rate, breathing rate, blood pressure; blood sample analysis for various health reasons and for PED testing; bone density, body composition, and anthropomorphic data; and temperature.¹⁶ The wearables and accompanying analytics programs have greatly increased teams' capacities to analyze biomechanical processes, particularly player load, and to synthesize load with other ABD indicators, such as sleep data.¹⁷ Player load is a measure of the work completed by the athlete (external load) or of the stress on the athlete's systems, both physiological and psychological (internal load).¹⁸ Biomechanical data collected by wearables related to player load includes GPS locations, measured by accelerometers, magnets, and gyroscopes contained within the wearable devices. The GPS coordinates reveal minute direction changes and reflect player speed and reactivity, tracked over time.¹⁹ The skills-based data²⁰ teams collect during games would likely be considered biomechanical data. Other biomechanical ABD includes jump test results, which measure neuromuscular function and include metrics such as jump height, mean power, and peak force.²¹ Table 1 provides a summary of the various devices reported as used by those interviewed.

Table 1. Types of ABD and Collection Devices Used in Professional Sport

Device	Measures/data	Purpose
Catapult	100s of metrics – e.g., GPS positions, speed, acceleration, distance, heart rate	Risk, readiness, return to play (K&S) Assess athletes' capacities

14. This section will refer to biometric and biomechanical data separately, notwithstanding the note in the introduction, to describe the various types of data and summarize its use.

15. Email Interview with High-Level Adm'r, NBA (Feb. 18, 2017) [hereinafter NBA Email Interview].

16. *Id.*

17. *Id.*; see generally *Experience*, WHOOP, <http://whoop.com/day-in-the-life/#mike-1130am> (last visited Dec. 14, 2017).

18. See Shona L. Halson, *Monitoring Training Load to Understand Fatigue in Athletes*, 44 *SPORTS MED.* 139, 140–41 (2014), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4213373/>.

19. See *id.* at 141.

20. NBA Email Interview, *supra* note 15.

21. *Id.*

	Use to generate player load scores, performance banding, and proprietary metrics such as load score over time ²²	Customized based on particular needs of each team, position, player ²³
Catapult	Whether person is leaning a certain way or favoring one side	Possible early indication of injury, muscular imbalance, or movement dysfunction
Catapult ClearSky ²⁴	Indoor/local positioning system for speed and distance metrics—pinpoint player movement traces within 10cm positional accuracy	Athlete tracking, tactical formations, team structures
Catapult OptimEye S5 (premium), X4 (practical), and GPSports Evo (load management solution) ²⁵	S5 is GNSS and uses US-based GPS and Russian-based GLONASS for 1000 data points per second and includes Inertial Movement Analysis algorithm to measure athlete micromovements	S5 especially for explosive movements and tactical analysis; X4 entry level and easier to use but access to OpenField analytics platform; GPSports for on-field tracking and decisions but no post-session analytics
DEXA ²⁶	Bone density and body composition	general fitness and injury recovery
In-bat motion sensors – e.g. Zepp Baseball, Diamond Kinetics, Blast Motion; motusBASEBALL ²⁷	Players' swing	Performance Injury reduction; motus specifically targets UCL tear prevention ²⁸
miCoach Elite system by Adidas	Vitals – e.g., speed, acceleration, distance, pow-	

22. *See Outdoor*, CATAPULT, <http://www.catapultsports.com/system/outdoor/> (last visited Dec. 14, 2017).

23. *Id.*

24. *See Indoor*, CATAPULT, <http://www.catapultsports.com/system/indoor/> (last visited Dec. 14, 2017).

25. *See Outdoor*, *supra* note 22.

26. *Dexamap: An Accurate Method for Measuring Total Body Composition*, DEXAMAP BODY COMPOSITION, <http://www.dexamap.com/what-is-dexamap/> (last visited Dec. 14, 2017).

27. *motusBaseball*, MOTUS, <http://motusglobal.com/motusbaseball.html> (last visited Dec. 14, 2017).

28. *Id.*

	er, heart rate	
motus ²⁹ motusBASEBALL motusQB - app that works with sensor and compression sleeve motusPRO – training tool/ does not require lab	Workload monitor/ sensor workload/UCL stress, pitching and batting metrics stress on throwing arm (Acute: Chronic Valgus workload), total and high effort throw counts, elbow distraction force and valgus torque, arm speed and slot, shoulder rotation, fingertip velocity) 40 throwing and batting metrics	Injury prevention Training Feedback for injury rehabilitation
Polar – heart rate monitors and GPS watches ³⁰	Heart rate, GPS, running (and cycling) cadence	Training optimization
sideline tracking (non-wearable) – Zebra, Statcast, SportsView ³¹	camera/radar sensors track numerous metrics – e.g., perceived velocity; distance; pitcher rotation speed; spin rate; launch angle, vector, hang time of ball	Player/team evaluation, strategy and tactics, replay capabilities
Smartlife ³²	ECG, sEMG, impedance pneumography, impedance plethysmography, accelerometry, EEG, EOG, GSR, temperature	Develop custom smart garments
Viperpod	Metrics – e.g., heart rate, speed, and metabolic stress	Fine-tune fitness (in real time and log for post-season analysis)
WHOOP (wristband)	Similar to Zephyr bioharness – markers	“Performance optimization system” –

29. *Id.*

30. *H10 Heart Rate Sensor*, POLAR USA, https://www.polar.com/us-en/products/accessories/h10_heart_rate_sensor (last visited Dec. 14, 2017).

31. *See Sports View SV21*, SPORTS VIEW, <http://www.sportsview.co/> (last visited Dec. 14, 2017); *Zebra + the NFL | Change the Game*, ZEBRA, <https://www.zebra.com/us/en/nfl.html> (last visited Dec. 14, 2017); Paul Casella, *Statcast Primer: Baseball Will Never Be the Same*, MLB (Apr. 24, 2015), <http://m.mlb.com/news/article/119234412/statcast-primer-baseball-will-never-be-the-same/>. All leagues use some type of on-field (sideline) player tracking.

32. *Products*, SMARTLIFE, <https://www.smartlifeinc.com/product/> (last visited Dec. 14, 2017).

	including 5 key metrics: heart rate (resting and variability), ambient temperature, 3-axis accelerometer for measuring motion, on/off, plus sleep Collects 100MB/day per athlete and can store three days' on wristband. ³³	strain, recovery, sleep performance, predicting performance
WiSP and other adhesive bandage-like patches with sensors	Continuous monitoring of variables – e.g. heart rate, respiration, motion, blood oxygenation, brain activity, muscle function, body temperature, change in blood pressure	
	Hydration	
	Chemicals present in sweat – e.g., electrolytes, proteins, heavy metals ³⁴	
Zephyr Bio-Harness	Markers of training intensity – e.g., heart rate, heart rate variability, movement, breathing rate, core temperature, acceleration	
Zephyr trauma-monitoring stickers	Measure force and impact	Monitor trauma, especially concussion risk
	Traditional devices: ³⁵	
Scale Dynamometer Calipers	Weight Grip strength Body mass index	General physical fitness assessment
Questionnaires and surveys	Wellness indicators	General wellness assessment

33. WHOOP, <http://whoop.com/> (last visited Dec. 14, 2017).

34. See Wei Gao et al., *Fully Integrated Wearable Sensor Arrays for Multiplexed in situ Perspiration Analysis*, 529 NATURE 7587, 509 (2016).

35. MLB Telephone Interview I, *supra* note 11. The source notes only very basic collection instruments like these are ubiquitously utilized; teams are otherwise unique in the degree of use of ABD collection.

C. Why This Data Is Being Collected

The top priorities cited in collecting ABD are player performance and optimizing training, player health, and wellness monitoring. Relatedly, teams use the data to educate coaches as to the effects of training regimes on their players. Several sources also reported data gathering is used in a screening capacity, to vet the reliability of the various data collection instruments for reliability, accuracy, and usefulness to the players and the team. Much of the latter is done in developmental and minor leagues rather than the professional leagues.³⁶

Collection of biometric data is utilized for general player health and wellness at various stages in an athlete's career: tryouts, as an active player, monitoring injury, screening for developing systems problems (heart, respiratory), or for PEDs and narcotics. Certain types of biometric data are used only for diagnostics and player health, such as more complex heart health evaluations like EKGs; teams note that this type of data is used only to determine if players need to see cardiology specialists, but never as part of contract renegotiations.³⁷ Heart rate, for example, is monitored to judge the stress and effects of practice on athletes.³⁸ Teams also report utilizing basic questionnaires to get players' self-evaluations as to their wellness, mood, and sleep.³⁹

Biomechanical data such as jump test metrics and particularly player load metrics are used to create optimal training regimes for players; this is facilitated by using player load scores to determine baselines and then target ranges for players to achieve each week—for example, a particular player will need to train at ninety percent of his maximum load approximately once per week in order to maintain peak condition.⁴⁰ Training too close to the top of the load range for too long risks overtraining and fatigue-related injury, while going too long between maximum training sessions risks undertraining and underutilization of high-twitch muscle fibers, which also risks injury during maximum effort scenarios such as games.⁴¹ Once the data is collected, it is

36. *Id.*

37. *See id.*

38. MLS Telephone Interview, *supra* note 13.

39. *Id.*

40. *Id.*

41. *Id.*; *see Halson, supra* note 18, at 140.

processed into a “digestible” format and presented in a simplified format for coaches to evaluate, usually in bar charts, graphs, or bullet format; experts note that presenting the data to coaches is especially useful in reversing common misconceptions about the length of time needed to recover and the effects of fatigue over time.⁴² Industry representatives note that teams are generally trending toward better understanding load management and game readiness.⁴³

Teams appear to use the data, at least to some extent, in personnel decisions, particularly (and not surprisingly) in the context of deciding when players will return from injuries, although some teams note that they are not yet at this point.⁴⁴ Wearables representatives note, however, that they are very cautious in presenting injury-related information, particularly considering liability and careers at stake, in the event teams were to over-rely on the ABD results.⁴⁵

Thus, biomechanical ABD appears to be most frequently utilized by teams for performance and training optimization and for player monitoring, which directly intersects with player wellness and injury prevention. The discussions with all interview contacts reflected this observation.

III. HEALTH LAW: HEALTHCARE AND PRIVACY ISSUES, APPLICABILITY OF HIPAA

The research examines the intersection of ABD and health information privacy laws. Currently, no federal laws exist to specifically regulate biometric data collection. Biometric and biomechanical data are typically not categorized as personal health information (PHI) under existing federal framework, although HIPAA does regulate some biometric data when collected by health care providers.⁴⁶ Partially, this gap in the law, particularly with regard to ABD, is a matter of definitions (of health care purpose, etc.). It is also partly due to waivers that exempt teams from otherwise having to comply with federal requirements. Findings indicate that although HIPAA does not explicitly regulate biometric data, many teams, and the analytics

42. NBA Email Interview, *supra* note 15; MLS Telephone Interview, *supra* note 13.

43. Wearable Tech. Co. Telephone Interview, *supra* note 10.

44. NBA Email Interview, *supra* note 15; Telephone Interview with High-Level Adm’r, MLB, (Feb. 8, 2017) [hereinafter MLB Telephone Interview II].

45. Wearable Tech. Co. Telephone Interview, *supra* note 10.

46. See *What Federal Laws Apply to Biometrics*, ELEC. FRONTIER FOUND., <https://www.eff.org/sls/tech/biometrics/faq#faq-What-federal-laws-apply-to-biometrics?> (last visited Dec. 14, 2017).

industry itself, appear to be self-regulating by imposing protocols and protections for ABD beyond what federal health privacy laws require. However, counting on teams to self-regulate handling unprecedented amounts of personal data⁴⁷ makes concerns about data privacy and security still present and relevant, and leaves players without a specific remedies framework adequate to address misuse⁴⁸ of ABD. Organizations may be able to be somewhat vindicated through criminal proceedings, as in the case of the Astros/Cardinals hacking scandal,⁴⁹ but this would not address potential player damages resulting from a security breach or misuse of PHI/ABD via a private cause of action.⁵⁰

A. The Law: Definitions and Waivers; HIPAA – What It covers and Why ABD Isn't Protected by HIPAA in Professional Sport

Types of data: As a category, biometric data encompasses a broad range of metrics. In professional sport, the relevant range of data types is somewhat small, but still refers to everything from height and frequency of jumps to core body temperature and hydration levels.⁵¹ As part of routine health exams, teams traditionally collect measurements such as heart rate, blood pressure,

47. See Karkazis & Fishman, *supra* note 3, at 46. Noting privacy implications of teams having “an extraordinary amount of data points that could be collected, aggregated across devices, and analyzed.”

48. “Misuse” refers to illegal use, as well as action that would be potentially illegal but is unresolved due to the current legal gray area in this area of health information privacy.

49. Associated Press, *St. Louis Cardinals Docked Two Draft Picks and Fined \$2m for Hacking Astros*, THE GUARDIAN, Jan. 30, 2017, <https://www.theguardian.com/sport/2017/jan/30/st-louis-cardinals-hacking-scandal-punishment-houston-astros-mlb>.

50. HIPAA, were it to apply, does not include a private right of action, and recourse may be achieved only through filing a complaint with the U.S. Department of Health and Human Services (HHS), Office for Civil Rights (OCR); if found in violation, the covered entity may be civilly or criminally liable, but not the individual. See *HIPAA Violations & Enforcement*, AM. MED. ASS'N, <https://www.ama-assn.org/practice-management/hipaa-violations-enforcement> (last visited Dec. 14, 2017). State health privacy laws may allow for recovery where federal law does not. See Pathology Blawgger, *A New Way to Sue Health Care Professionals Using HIPAA?*, THE HEALTH CARE BLOG (Sep. 6, 2013), <http://thehealthcareblog.com/blog/2013/09/06/a-new-way-to-sue-health-care-professionals-using-hipaa/>. Players may sue team physicians for medical malpractice, and professional athletes have successfully done so. See Matthew J. Mitten, *Emerging Legal Issues in Sports Medicine: A Synthesis, Summary, and Analysis*, 76 ST. JOHN'S L. REV. 5, 8–34 (2012). However, it seems highly unlikely that a player's claim of an ABD-related health privacy violation would be allowed to proceed against a team physician under a malpractice action, even in state court. Additionally, player disputes over team-provided medical care must generally be submitted to arbitration, prior to or instead of civil actions. *Id.* at 42–44.

51. See Table 1.

ECG readings, and other data⁵² that would be considered PHI.⁵³ The majority of ABD collected by teams would appear to fall within the parameters of HIPAA, according to the relevant statutory definitions relating to health information.⁵⁴ Metrics such as speed and distance would not traditionally be

52. See, e.g., *MLS Collective Bargaining Agreement Ratified and Signed*, MLS, art. 9.10 (Feb. 1, 2015) [hereinafter *MLS CBA*], <https://www.mlspayers.org/images/Collective%20Bargaining%20Agreement%20-%20February%201,%202015.pdf>.

53. See The Health Insurance Portability and Accountability Act of 1996 (HIPAA), 45 CFR §§ 160.103 (2017) [hereinafter HIPAA] (Definitions in pertinent part:

Protected health information means individually identifiable health information . . . that is [] [t]ransmitted or maintained [in electronic media or] in any other form or medium [except for] education records covered by [FERPA and]; . . . employment records held by a covered entity in its role as employer

Health information means any information . . . that: (1) is created or received by a health care provider, health plan, . . . employer . . . and (2) relates to the past, present, or future physical or mental health or condition of an individual; the provision of health care to an individual; or the past, present, or future payment for the provision of health care to an individual.

Individually identifiable health information is . . . a subset of health information . . . and: (1) is created or received by a health care provider, health plan, employer, or health care clearinghouse; and (2) relates to the past, present, or future physical or mental health or condition of an individual; the provision of health care to an individual; or the past, present, or future payment for the provision of health care to an individual; and (i) That identifies the individual; or (ii) With respect to which there is a reasonable basis to believe the information can be used to identify the individual.

Health care means care, services, or supplies related to the health of an individual . . . include[ing] . . . [p]reventive, diagnostic, therapeutic, rehabilitative, maintenance, or palliative care, and counseling, service, assessment or procedure with respect to the physical or mental condition, or functional status, of an individual or that affects the structure or function of the body.

Health care provider [includes] any other person or organization who furnishes . . . health care in the normal course of business.).

According to the preceding definitions, the records created by team or league staff generally fall within the preventative, diagnostic, therapeutic, rehabilitative, or maintenance category; assessments or procedures relating to players' physical or mental condition or functional status; or of the structure or function of the body. The information gathered is reasonably capable of being used to identify the players. Thus, a large percentage of ABD generated by athletes and collected and stored by teams would, under normal/hypothetical circumstances, be considered to fall under the HIPAA umbrella.

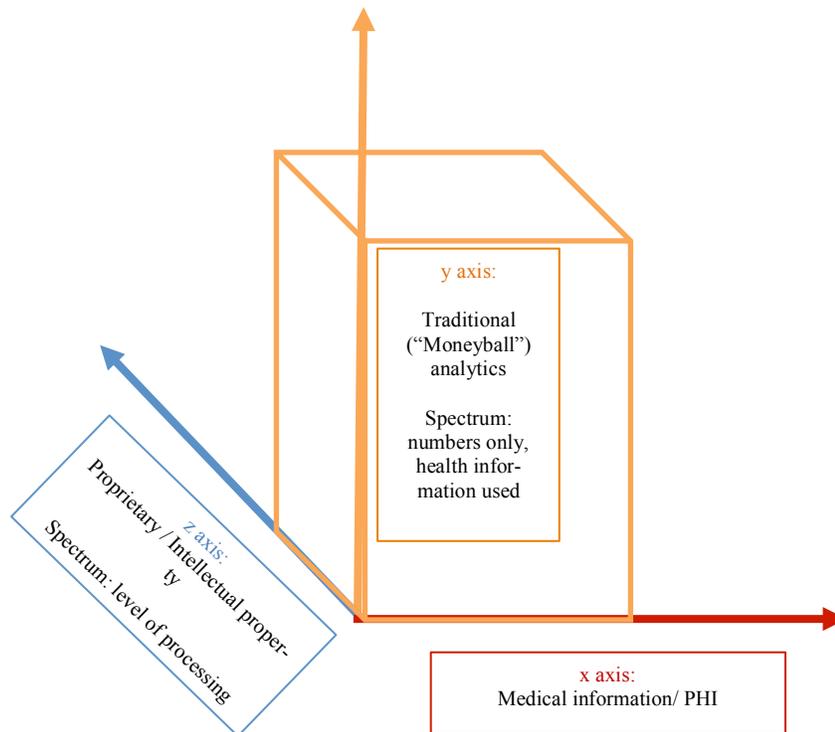
54. *Id.*

considered PHI—but would be considered biomechanical metrics, because they measure physical characteristics (and could be used to identify a particular person).⁵⁵

As noted above, the challenge of classifying ABD appears as a theme throughout our research and analysis of the legal frameworks related to biometric data collection. It is helpful to recall that although we refer to “ABD” as a class for the ease of reference and readability, ABD encompasses a wide range of metrics. Some of the data clearly resembles medical information, but may only be protected by federal health privacy law depending on how it is used. The measurements are collected in real time as raw data, but many of the data points are then processed into “actionable” or “digestible” formats. For this reason, privacy concerns may attach at different places in the lifetime of a data point—in its raw format, it is virtually unreadable by the layperson, but ABD also results in user-friendly formats, like charts and graphs used by coaches and trainers. The proprietary digestible data comes to resemble intellectual property rather than raw data or basic medical data. If the proprietary digestible format does include personal health information, it also diverges from the traditional analytics based on numerical statistics. Each nuance carries its own legal and ethical implications—some of which are straightforward, but most of which are not. Figure 1 illustrates a simple schematic to keep in mind when assessing particular types of data. This is not to suggest some ABD is worthier of protection or amenable to disclosure than others; we largely reserve judgment on this topic and continue to develop our tentative conclusions.

Figure 1. Conceptual Schematic for ABD

⁵⁵ See *Biometrics*, *supra* note 5. According to the above discussion in note 53, the strictly biomechanical data is also created by teams for (at least) the purposes relating to body function and/or the player's physical condition.



"In the course of healthcare": "The privacy of information collected in the course of healthcare is protected under federal law, state statutes,⁵⁶ and common law."^{57 58} A great deal of team activities and services involve the healthcare of the players, and arguably, almost all biometric data collected could be used in the future for healthcare purposes, particularly for rehabilitation from injuries. The data collected traditionally by teams is more recognizably "health" data, and is used for monitoring and maintenance, such as heart rate. Some metrics may be collected routinely but not used until an

56. See Joy L. Pritts, *Altered States: State Health Privacy Laws and the Impact of the Federal Health Privacy Rule*, 2 YALE J. HEALTH POL'Y L. & ETHICS 327, 332–40, 349–50 (2002).

57. "The physician-patient relationship generally entails a duty of confidentiality that has been extended to other health care providers. This principle of the common law has informed the scope of the evidentiary privilege with respect to information supplied to health care providers, including psychotherapists." See generally Peter A. Winn, *Confidentiality in Cyberspace: The HIPAA Privacy Rules and the Common Law*, 33 RUTGERS L.J. 617 (2002).

58. Michael K. McChrystal, *No Hiding the Ball: Medical Privacy and Pro Sports*, 25 MARQ. SPORTS L. REV. 163, 164–65 (2014).

injury occurs—is that sufficient to make it in the course of “healthcare”? A large portion of the “new” ABD is utilized for injury prevention and mitigating risk of injury—presumably, this could be considered “healthcare” as well. The line between healthcare and player performance is equally vague, and further complicated by the relationship of the team’s medical professionals’ vis à vis the players, team, and ownership.⁵⁹

The HIPAA sections most relevant to biometric data collection are (1) the Privacy Rule, and (2) the Security Rule, each of which set baseline standards for covered entities that deal with medical and personal information.⁶⁰ The Privacy Rule covers all PHI in paper or electronic format and sets requirements for the protection of that information;⁶¹ the Security Rule covers PHI in electronic format only.⁶² The Security Rule requires entities to ensure physical, administrative (including risk analysis measures), and technical (including access and transmission) security safeguards are in place for protecting PHI.⁶³ HIPAA requires an additional layer of cybersecurity beyond what is normally required for entities that handle personal information.⁶⁴

B. Professional Team Status Under HIPAA

Entities required to abide by HIPAA: Federal law, particularly HIPAA and administrative regulations pursuant to HIPAA, compel entities that deal with health information to comply with certain privacy and security requirements. The Act is formulated such that individuals can consent to

59. *See infra* at Part IV.

60. HIPAA, 45 CFR §§ 164.500(e)–164.534 (2017); HIPAA, 45 CFR §§ 164.300(c)–164.318 (2017).

61. *See* HIPAA, 45 CFR §§ 164.500–164.534 (2017), *see also* *HIPAA Privacy Rule and Its Impacts on Research*, U.S. DEP’T OF HEALTH & HUM. SERV. NAT’L INST. OF HEALTH, <https://privacyruleandresearch.nih.gov/> (last updated Feb. 2, 2007) (discussing the privacy rule and its impacts on research).

62. *See* 45 CFR §§ 164.300–164.318 (2017); *see also* *Summary of the HIPAA Security Rule*, U.S. DEP’T OF HEALTH & HUM. SERV. <https://www.hhs.gov/hipaa/for-professionals/security/laws-regulations/> (last visited Dec. 14, 2017) (summary of the security rule).

63. *Id.*

64. *Cybersecurity Framework*, NAT’L INST. OF STANDARDS & TECH., <https://www.nist.gov/cyberframework> (last visited Dec. 14, 2017). *See* *HIPAA Security Rule Crosswalk to NIST Cybersecurity Framework*, U.S. DEP’T OF HEALTH & HUM. SERV. OFF. FOR C.R. (Feb. 22, 2016), <https://www.hhs.gov/sites/default/files/nist-csf-to-hipaa-security-rule-crosswalk-02-22-2016-final.pdf> (HIPAA cybersecurity intersection with National Institute of Standards and Technology (NIST) cybersecurity framework); *see also* *NIST Releases Update to Cybersecurity Framework*, NAT’L INST. OF STANDARDS & TECH. (Jan. 10, 2017), <https://www.nist.gov/news-events/news/2017/01/nist-releases-update-cybersecurity-framework> (concept and definition of “identity proofing”).

waive many of the privacy measures and disclosure restrictions. HIPAA governs biometric data in United States healthcare settings and biomedical research.⁶⁵ Without additional guidance from the Department of Health and Human Services (DHHS) and the effect of player waivers, teams would be considered healthcare providers⁶⁶ subject to HIPAA requirements, and much of the ABD could be considered personal health information.

In passing HIPAA, Congress mandated DHHS to implement health information privacy regulations applicable to healthcare providers that submit healthcare transactions electronically.⁶⁷ Under the statutory language of HIPAA, most of the medical staff employed by professional sports teams would almost certainly be considered healthcare providers subject to the privacy and security requirements of HIPAA.⁶⁸ The Privacy Rule applies to “teams that submit a bill, charge for a service, or transmit personal health information to an insurance plan in an electronic format.”⁶⁹ This definition creates a hybrid situation where teams would be partially subject to HIPAA depending on how the medical staff handled, stored, and transmitted health information, and on how doctors are actually employed by teams (e.g., on the team staff versus outside doctors, etc.).⁷⁰

However, DHHS issued a response during the notice and comment period that communicates the opposite effect: DHHS first noted professional sports teams were “unlikely to be covered entities” that would need to abide by

65. *See What Federal Laws Apply to Biometrics*, *supra* note 46.

66.

HIPAA applies only to *covered entities*, which it specifies as health care providers, health plans (health insurers and HMOs), and health care clearinghouses. Health care providers include hospitals, physicians, and other caregivers, as well as researchers who provide health care and receive, access or generate individually identifiable health care information. Pharmacists and pharmacies are also HIPAA covered entities.

Covered Entity, ELEC. FRONTIER FOUND., https://www EFF.ORG/issues/medical-privacy/glossary#Covered_Entity (last visited Dec. 14, 2017).

67. *See* McChrystal, *supra* note 58, at 165. HIPAA also applies to health plans and clearinghouses. *See also Covered Entity Guidance*, CTR. FOR MEDICARE & MEDICAID SERV. (June 17, 2016), <https://www.CMS.GOV/Regulations-and-Guidance/Administrative-Simplification/HIPAA-ACA/Downloads/CoveredEntitiesChart20160617.pdf>.

68. 45 C.F.R. § 160.103 (2017); 45 C.F.R. § 164 (2017).

69. *See* 45 C.F.R. §§ 160–164 (2017); *see also* Travis Walker, *The Price of Health Privacy in Sports*, BIOLAWTODAY (Nov. 12, 2015), https://www.LAW.UTAH.EDU/the-price-of-health-privacy-in-sports/#_edn.

70. *See* Walker, *supra* note 69 (“How information is shared and to whom thus determines if HIPAA attaches.”).

HIPAA privacy rules.⁷¹ Further, even if teams would be covered or partly covered, DHHS noted that—although it did not condone a blanket reduction of privacy for an entire group of individuals (like players), it is fully within the purview of employers to “mak[e] an employee’s agreement to disclose health records a condition of employment”⁷² (as is maintaining a certain level physical fitness).⁷³ DHHS adopted language “excluding employment records maintained by a covered entity in its capacity as an employer from the definition of ‘protected health information.’”⁷⁴ Operationally, the effect of the guidance is to affirm teams’ power to compel players to disclose health information (waive HIPAA privacy) and subsume the information into the employment record of each player. Once considered part of the employment record, the contents of the record are not viewed as protected health information.⁷⁵ The NFL CBA, for example, says that players must agree to disclosure of their injury relevant HIPAA information (meaning that HIPAA no longer applies once the release happens).⁷⁶

71. Standards for Privacy of Individually Identifiable Health Information, 67 Fed. Reg. 157 at 53, 193 (Aug. 14, 2002), <https://www.hhs.gov/sites/default/files/ocr/privacy/hipaa/administrative/privacyrule/privrule.txt>; McChrystal, *supra* note 58, at 165–66; Daniela Testoni et al., *Sports Medicine and Ethics*, 13 AM. J. BIOETHICS 4 (2013). See Anthony William Liberatore, Paper, *Athlete Injuries and Performance Enhancing Drug Violations: An Analysis Under Federal Health Privacy Law*, SETON HALL L. SCH. STUDENT SCHOLARSHIP 357, 6–7 (2013), http://scholarship.shu.edu/cgi/viewcontent.cgi?article=1357&context=student_scholarship.

72. Standards for Privacy of Individually Identifiable Health Information, 67 Fed. Reg. at 53, 183.

73. See, e.g., App. A, para. 6 (Physical Condition), *NFL Collective Bargaining Agreement Ratified and Signed*, NFL (Aug. 4, 2011) [hereinafter *NFL CBA*], <https://nflabor.files.wordpress.com/2010/01/collective-bargaining-agreement-2011-2020.pdf>.

74. Standards for Privacy of Individually Identifiable Health Information, 67 Fed. Reg. at 53, 192.

75. Testoni et al., *supra* note 71; McChrystal, *supra* note 58, at 165–66.

The operating principle suggested by HHS is that a player may be compelled to authorize the release of medical information to his team without violating federal health care privacy regulations under HIPAA. Therefore, players can be compelled to consent to disclosure of information about their medical condition without violating privacy principles under federal law. The same is generally true under state law.

76. See Alan MacNeill, *Why Is the Medical Information of NFL Players Allowed to Be Shared With the Public?*, QUORA (Jan. 8, 2013), <https://www.quora.com/Why-is-the-medical-information-of-NFL-players-allowed-to-be-shared-with-the-public>. MacNeill reports that the HHS determination with regard to employment record was a direct result of commentary from the professional sports leagues following the promulgation of HIPAA. The pertinent comment reads: “Comment: One commenter suggested that the health records of professional athletes should qualify as ‘employment records.’ As such, the records would not be subject to the protections of the Privacy Rule.” *Note: A FOIA request is currently pending to attempt to verify the identity of the commenter. See Lobbying*

DHHS carefully declined to define “employment record” for fear of endorsing a mistaken interpretation that certain kinds of information were always exempt from privacy protections, no matter how or why they were obtained: “[T]he nature of the information does not determine whether it is an employment record. Rather, it depends on whether the covered entity obtains or creates the information in its capacity as employer or . . . as covered entity.”⁷⁷ Of note, the Department did include “workplace medical surveillance” and “fitness-for-duty tests” as part of a list of possible items that “may be part of the employment records maintained by the covered entity in its role as an employer.”⁷⁸ Arguably, “[f]rom a privacy perspective, [HIPAA] could be more accurately described as a disclosure law than one that protects information.”⁷⁹ The DHHS *comment response reads*, in part:

Professional sports teams are unlikely to be covered entities [which owe primary duties of confidentiality under the regulations]. Even if a sports team were to be a covered entity, employment records of a covered entity are not covered by this Rule. If this comment is suggesting that the records of professional athletes should be deemed “employment records”

Spending Database—National Football League, 2016, OPENSECRETS, <https://www.opensecrets.org/lobby/clientsum.php?id=D000027847&year=2016> (last visited Dec. 14, 2017). The leagues are influential in Washington, especially the NFL, which spent between \$1 million and \$1.6 million per year on lobbying since 2009; see Jed Hughes, *NFL Leads All Sports Leagues in Government Lobbying and Political Involvement*, BLEACHER REP. (June 1, 2012), <http://bleacherreport.com/articles/1204804-nfl-leads-all-sports-leagues-in-lobbying-and-political-involvement>.

77. Standards for Privacy of Individually Identifiable Health Information, 67 Fed. Reg. at 53, 193. Elizabeth Litten, *Athletes Do Not Leave Their HIPAA Rights at the Locker Room Door*, ABOVE THE LAW (July 31, 2015), <http://abovethelaw.com/2015/07/athletes-do-not-leave-their-hipaa-rights-at-the-locker-room-door/>.

HHS refused to provide a definition of “employment record,” fearing that it might “lead to the misconception that certain types of information are never protected health information, and will put the focus incorrectly on the nature of the information rather than the reasons for which” the information was obtained. HHS went on to explain how and when protected health information might become “employment record” information: e.g., drug test results protected when mandated by employer but not if provided to employer pursuant to employee’s authorization.

78. Standards for Privacy of Individually Identifiable Health Information, 67 Fed. Reg. at 53, 192.

79. HIPAA, ELEC. FRONTIER FOUND., https://www EFF.ORG/issues/medical-privacy/glossary#Health_Insurance_Portability_and_Accountability_Act_HIPAA (last visited Dec. 14, 2017).

even when created or maintained by health care providers and health plans, the Department disagrees. No class of individuals should be singled out for reduced privacy protections. As noted in the preamble to the December 2000 Rule, nothing in this Rule prevents an employer, such as a professional sports team, from making an employee's agreement to disclose health records a condition of employment. A covered entity, therefore, could disclose this information to an employer pursuant to an authorization.⁸⁰

Players may thus be protected in the sense that it is their own authorization that allows disclosure of health information, “not the category or class of the individual,”⁸¹ but that protection only holds to the point of authorization—which teams are permitted to require as a condition of employment. The choice is then not between authorization and non-authorization, but between signing with a team (or playing the sport at the professional level at all) and non-authorization. In Table 2, we provide a summary of the various types of data collected and our judgment whether it is personal health information.

Table 2. ABD Potential Categorization as Personal Health Information

Classifying Data			
Type of ABD	Categorically PHI/medical (3-definitely, 2-maybe, 1-probably not, 0-no)	Nature of data	Raw to processed level (at moment of measurement) (3-proprietary, 2-processed, 1-raw/single formula)
Acceleration/deceleration Accelerometry ⁸² – steps, speed, impact, calorie burn	1	Biomechanical ⁸³	1-raw

80. Standards for Privacy of Individually Identifiable Health Information, 67 Fed. Reg. at 53, 193.

81. Litten, *supra* note 77 (“It isn’t unless and until protected health information is disclosed to the employer pursuant to the individual’s authorization that it becomes an ‘employment record’ no longer subject to HIPAA.”).

82. *Capabilities*, SMARTLIFE, <https://www.smartlifeinc.com/product/> (last visited Dec. 14, 2017).

83. *See* discussion *supra* note 48. It is very likely that under a broad understanding of “health care,” biomechanical data would also be considered individually identifiable health information.

Bloody oxygenation	3	PHI	1-raw
Body mass index/body composition / anthropometric data	3	PHI	1- raw
Body/core temperature	3	PHI	1- raw
Breathing rate/respiration/ impedance pneumography	3	PHI	1- raw
Change in blood pressure	3	PHI	1-raw
Chemicals in sweat – e.g., electrolytes, proteins, heavy metals	3	PHI	1-raw
Direction change	1	biomechanical	1-raw
Distance	1	biomechanical	1-raw
ECG (electrocardiogram) – heart rate, heart rate variability, respiration, calorie burn	3	PHI	1.5- processed
EEG (electroencephalogram) – brain activity	3	PHI	1.5- processed
EOG (electrooculogram) – eye movement	3	PHI	1- raw/possibly processed
Fingertip/throwing velocity/ shoulder rotation	1	biomechanical	1- raw
Force/impact	1	biomechanical	2- processed
GPS positions	1	biomechanical	1-raw
Grip strength	3	PHI	1- raw
Heart rate	3	PHI / internal load	1-raw
Heartrate variability	3	PHI	1-raw
Hydration	2	probably PHI	1- raw
Impedance plethysmography – respiration, pressure ⁸⁴			
Jumping (height & frequency)	1	biomechanical	1-raw
Lean/favor one side	2	unclear/depends on use	1-raw
Metabolic stress	3	PHI	raw/ possibly processed

84. Smartlife, *Capabilities*, SMARTLIFE, <https://www.smartlifeinc.com/product/> (last visited Dec. 14, 2017).

Metrics based on player load – e.g. offensive and defensive line algorithms	3	mostly external biomechanical	3- proprietary
Motion	1	biomechanical	1-raw
Muscle function	3 or 2	PHI	2- probably processed
Performance banding ⁸⁵	1	biomechanical	3- proprietary (unless based off generic tables)
Player load scores ⁸⁶	1	external biomechanical	3- proprietary
Power	1	biomechanical	2- processed
sEMG (surface electromyogram) – muscle utilization, power	2	possibly PHI	
Sleep ⁸⁷	2	possibly PHI	2- processed
Speed	1	biomechanical	1-raw
UCL/throwing arm stress	2	biomechanical	3- proprietary
Weight	3	PHI	1- raw
Wellness questionnaires	3	PHI	1- raw

IV. ATHLETES' BIOMETRIC DATA AND EMPLOYMENT LAW

Media coverage tends to portray ABD collection as a potentially Orwellian tactic in which teams (employers) could maintain twenty-four-hour tabs on players by mandating wearable or injectable data collection instruments⁸⁸—teams would know when a player's blood alcohol level

85. *Id.*

86. MLS Telephone Interview, *supra* note 13. Player load scores and speed bands are critical elements of training. Teams use wearables to establish baseline levels for each player, to utilize those metrics to ensure players are within a range that keeps them from overtraining or undertraining, both of which increased risk of injury, and to hit certain targets, for example, reaching a maximum speed once every seven to ten days to maintain high twitch muscle fibers. NBA Email Interview, *supra* note 15.

87. Representatives we contacted were not sure how sleep data collected via wearables was currently being utilized, if at all. MLB Telephone Interview I, *supra* note 11. Teams often use short daily questionnaires to track sleep in an attempt to identify sleep disruptions requiring medical attention. Research indicates such self-reporting questionnaires to be about 50–60% accurate, but valuable in alerting teams to major problems. MLS Television Interview, *supra* note 13.

88. See generally Rian Watt, *New Technologies Are Forcing Baseball to Balance Big Data With*

increased, for example. Teams would then have leverage over players in contract renegotiations and personnel decisions. An information and power imbalance could result from both off-field measurements (what is the player doing in his or her spare time?)⁸⁹ and on-field measurements (data points that reveal weaknesses not otherwise obvious to trainers and coaches). Organizations emphasize the beneficial purposes of ABD: to monitor and promote player health and wellness, optimize player performance, and eventually assist in macro level on-field operations.⁹⁰ From this perspective, the players who integrate ABD insights and adopt recovery strategies tailored to their own personal biometric profiles would have an advantage in the employment context: ideally, the players would have a lower risk of injury and more efficient recovery, creating a higher overall level of fitness when entering contract negotiations.

Do a thousand data points per second change the balance of power in contract negotiations and collective bargaining? The competing views demonstrate that it is possible for an individual athlete's employment prospects to be harmed or benefited by ABD. Currently the effect of large scale ABD collection on the professional sports employment framework in the United States is not yet empirically determinable.

A. Overview of the Unique Employment Structure and Collective Bargaining in Professional Sport

ABD is not directly addressed by federal employment or health information laws, the latter of which is overviewed in Part III. The vast quantity of sensitive data falls within a legal gray area with respect to the regulatory framework. Professional sports are characterized by a unique labor structure: (1) an anti-competitive system maintained to preserve competition;⁹¹ (2) players' associations bargain for contract terms binding on all players; and (3) athletes, unlike employees in other industries, are inherently elite, temporary, and relatively replaceable—but necessary to the very existence of

"Big Brother," VICE SPORTS (May 27, 2016), https://sports.vice.com/en_us/article/new-technologies-are-forcing-baseball-to-balance-big-data-with-big-brother.

89. Note again that this research primarily concerns men's professional sport in the United States, due to the fact that ABD collection in the U.S. up to this point has generally been introduced at the men's level and thus provides a much bigger sample for the focus of this research. Overseas, we see a greater degree of adoption of ABD collection among women's teams and varying levels of age and proficiency. See Karkazis & Fishman, *supra* note 3, at 45.

90. MLB Telephone Interview I, *supra* note 11.

91. See James T. McKeown, *The Economics of Competitive Balance: Sports Antitrust Claims After American Needle*, 21 MARQ. SPORTS L. REV. 517, 534 (2011).

pro sports. Finally, the leagues operate under the private law of associations and exercise extensive control over players and other employees. As a result, professional sport is partially able to operate in a manner that could be considered discriminatory in many other industries, and employees must meet rigorous physical and physiological requirements to obtain and keep their employment.⁹² The prospect of disproportionately high salaries for elite players and coaches arguably provides a counterbalance for the incumbent loss of privacy and control over personal health information. However, this does not mean that players' data privacy is less "protectable," the issue is merely raised to highlight the ethical (if not legal) questions attendant to the rights exchanged for the possibility of elite athletic status, lucrative contracts, and fame.

B. Collective Bargaining Agreements ("CBAs")

The CBAs and standard player contracts of the professional sports leagues generally appear to govern the collection and use of athletes' biodata.⁹³ In their current forms, the provisions and waivers of the CBAs and standard player contracts generally allow for broad collection, use, and disclosure of athlete health-related data. However, CBAs should be viewed as a strong potential future means to protect player rights and privacy toward biodata. The terms of CBAs, with few exceptions, bind all players that sign contracts with teams in those leagues; a separate CBA is negotiated between the players' association (union), for example, the Major League Baseball Players' Association (MLBPA), and league management/ownership. A characteristic of the power of CBAs is the binding power with regard to individual players. As ABD-related issues evolve, the enforceability and consent of CBAs may become a key concern, although it remains to be determined whether ABD disputes will lead to potential litigation against teams, leagues, or vendors: if challenged, a contractual document's enforceability in court is evaluated according to factors like undue influence, capacity to contract, and here, scope of waiver.⁹⁴ The recognition of collective bargaining, power of the players' associations to bind players, and the courts' deference to the law of private

92. Arguably, the military is one of the only fields in which a comparable level of emphasis is placed on physical indicators, the employer has such discretion over, and access to, physiological data, and, to a greater degree, the terms of employment. See Karkazis & Fishman, *supra* note 3, at 46 (biodata is used for "planning and task delegation based on individual's physiological responses under stressful conditions").

93. *But see* Gale, *supra* note 6 (arguing that players own their own ABD, at least from an intellectual property standpoint).

94. See Walker, *supra* note 69.

associations makes a successful challenge unlikely. Damages would also be difficult to assess, depending on the nature and scope of improper data disclosure, use, or in the case of an ABD breach.

Each league's CBA (MLB, MLS, NBA, NFL, and NHL) regulates healthcare and medical issues pertaining to the players, as do the uniform player contracts utilized by the leagues. Similarly, each league's CBA touches on biometric data in some manner, but to varying degrees: currently, only the NBA's new CBA specifically includes a "Wearables" provision.⁹⁵ The previous CBA did not.⁹⁶ The NFL CBA briefly addresses "on-field sensors," with (unsurprisingly) great discretion to the league in requiring players to wear collection instruments.⁹⁷ The MLS CBA briefly covers "physiological monitoring/testing."⁹⁸ The NHL CBA makes no mention of ABD, although it could be subsumed by broad medical information authorizations.⁹⁹ Finally, the recent MLB negotiations are widely expected to have included ABD.¹⁰⁰ The 2011–16 CBA contained no such provisions. The terms have the potential to be extensive and detailed, particularly in light of the moderately comprehensive terms set out in the 2017–21 NBA CBA,¹⁰¹ and in light of MLB's early adoption of and significant reliance on analytics in general.¹⁰²

The NBA CBA is the first of its kind in United States professional sports to address ABD, and the result is a set of provisions largely intended to protect the players.¹⁰³ The CBA specifies that a joint committee must set standards for device functionality and cybersecurity, and vet all wearables based on the functionality and cybersecurity standards; teams must comply with those standards; no wearables are allowed in games; players have full access to data

95. See generally *NBA Collective Bargaining Agreement Ratified and Signed*, art. 22, NBA (Jan. 19, 2017), <http://3c90sm37lsaecdwtr32v9qof.wpengine.netdna-cdn.com/wp-content/uploads/2016/02/2017-NBA-NBPA-Collective-Bargaining-Agreement.pdf> [hereinafter *NBA CBA*].

96. *Id.*

97. See generally *NFL CBA*, *supra* note 73, at art. 51, § 13(c).

98. See generally *MLS CBA*, *supra* note 52.

99. See generally *NHL Collective Bargaining Agreement Ratified and Signed*, art. 34.3, NHL (Sep. 16, 2012), http://cdn.agilitycms.com/nhlpacom/PDF/NHL_NHLPA_2013_CBA.pdf [hereinafter *NHL CBA*].

100. See Watt, *supra* note 88. As of the submission of this article, the NBA had not yet published a draft of the CBA, and this author was still in the process of coordinating a meeting with representatives involved in those negotiations.

101. See *NBA CBA*, *supra* note 95, at art. 22, § 13.

102. See generally MICHAEL LEWIS, *MONEYBALL: THE ART OF WINNING AN UNFAIR GAME* (2003).

103. See generally *NBA CBA*, *supra* note 95, at art. 22, § 13.

while staff has limited access to data; wearables are voluntary; and teams can only use ABD for player health, performance, on-court strategy, and tactics and *not* for anything else—particularly contract negotiations, release to the public or commercial purposes; and that teams can be fined up to \$250,000 for violations.¹⁰⁴ The 2017 NBA CBA “establish[es] . . . a presumption that players own all data about themselves, and ban the use of wearable data in contract negotiations.”¹⁰⁵ Sources report that teams treat the CBA as protecting the purely permissive nature of wearables, and allowing players to make their own judgments as to whether they believe a particular device will benefit them.¹⁰⁶

Perhaps more telling is a key omission from the NBA CBA’s deliberate and detailed provisions regarding wearables: the unresolved status of the future commercialization of wearable data to third parties.¹⁰⁷ The language of the CBA, elsewhere adamant and specific in granting rights to the players, allows in this section that the parties will “continue to discuss in good faith” both the sale of ABD as well as the use of wearables during games.¹⁰⁸ Compromise is a factor relevant in analyzing CBAs, and presumably this was an area of concession—but it is also significant that the parties compromised on the aspect of ABD in which real money is at stake. The league does not necessarily “lose” by agreeing to give players access to their own biometric data, nor does it even lose by agreeing not to “consider[], use[], discuss[] or reference [the data] for a purpose other than player health and performance and team on-court tactics and strategy,” or in agreeing to be fined for violations.¹⁰⁹ It is difficult to envision a scenario in which a team would not actually at least “refer to” or “consider” ABD (gathered from wearables or not) in preparation for contract negotiations. It is also difficult to determine how a player would prove the team used wearable data in order to bring a successful grievance action (without some kind of direct evidence), or prove the data influenced negotiations independent of other biometric data and athlete performance indicators, known injuries, and so on. This is not to say the provisions are hollow, and we should expect ABD to become a dedicated

104. *NBA CBA*, *supra* note 95, at art. 22, § 13(a)–(c), (h).

105. Rian Watt, *The New NBA CBA Addresses Wearable Technology, But What Does That Mean?*, VICE SPORTS (Feb. 1, 2017), https://sports.vice.com/en_us/article/the-new-nba-cba-addresses-wearable-technology-but-what-does-that-mean.

106. Telephone Interview with High-Level Adm’r, NBA (Feb. 22, 2017) [hereinafter NBA Telephone Interview].

107. *NBA CBA*, *supra* note 95, at art. 22, § 13(i); *see id.*

108. *NBA CBA*, *supra* note 95, at art. 22, § 13(i).

109. *Id.* at art. 22, § 13(h).

subject of collective bargaining for all leagues in the future. However, the facially strong language of the NBA CBA may not prove as actionable as intended as a means of protecting players' interests in ABD.

The current NFL CBA devotes a single paragraph to wearables ("sensors"), found deep in the agreement in an article titled "Miscellaneous;" the term denotes extremely broad discretion to the league to require "all NFL players" to wear ABD collection instruments in games and practices.¹¹⁰ The devices can be required to "collect[] information regarding the performance of NFL games, including players' performances and movements, as well as medical and other player safety-related data."¹¹¹ The league is to consult with the NFLPA before using sensors for health or medical reasons.¹¹² Similarly, the MLS CBA conveys a broad grant of power to the league to require players to wear "any physiological monitoring device during or in connection with training."¹¹³

The NBA terms are undoubtedly to be understood as a result of bargaining for a greater degree of individual athlete control over biometric data: all other existing agreements would be presumed (by default) to lump ABD under general health/medical provisions or grant the balance of power to the leagues, who are obligated to marginally consult with the players' associations but make no mention of the legal status of the players regarding their own data. Table 3 references the relevant provisions in each league's CBA.

With the exception of relatively brief mentions in the NFL and MLS agreements, the current CBAs for the remaining four leagues (MLB, MLS, NHL, NFL) arguably predate the rapid expansion of ABD collection in United States sports, accounting for the almost total lack of on-point provisions. The lack of ABD coverage should also be taken in context of the employment and bargaining structure of professional sports. The terms guarantee certain (lucrative) salary levels and benefits, but simultaneously ensure that teams retain a great deal of control over many aspects of the players' lives, particularly in the realm of health information. As elite athletes, players are subject to continual evaluations of fitness and health, and teams maintain extensive records.¹¹⁴ Although biometric data in professional sport generally

110. *NFL CBA*, *supra* note 73.

111. *Id.*

112. *Id.*

113. *MLS CBA*, *supra* note 52. Representatives within MLS organizations report that these provisions are treated as optional only. Telephone Interview with Rep., *supra* note 10.

114. *See, e.g., id.*

does not fall under federal health information protections,¹¹⁵ it could be viewed as analogous: from a collective bargaining standpoint, it is not surprising for teams to keep a level of control over ABD similar to health information, and many teams report treating ABD as sensitive and protected health information even though they are not legally required to do so.¹¹⁶

Finally, it should be noted that devices are vetted in the minor leagues prior to any adoption at the professional level.¹¹⁷ Although testing is presented as voluntary, minor league players may not view it as such. In addition to the CBA, agents also protect professional players.¹¹⁸ Minor leaguers are likely far more willing to opt into ABD collection programs than major leaguers, even if they technically have the option to decide.¹¹⁹ This is significant when taken in the context that amateur and developmental leagues are the established proving grounds for new ABD collection programs.¹²⁰ Minor league baseball players are not represented by the players' association or covered by the CBA,¹²¹ and the wage imbalance and lack of bargaining power raises ethical questions about the implications of testing devices on players who are neither represented by the players' association nor possess the power to bargain at the individual level.

Table 3. Overview: Professional Sport League Controlling Provisions (CBAs) for Player Health and Medical

	Years effective	ABD/wearables	Related provisions
MLB	2011–16	None	Safety and Health (Art. 13) – Disclosure of Medical or Health Information (§ G) Uniform Players' Contract (Art. 3) Medical History Questionnaire (Attachment 6) Authorization for the Use and/or Disclosure of Major League Player

115. See Karkazis & Fishman, *supra* note 3, at 52.

116. *E.g.*, MLB Telephone Interview I, *supra* note 11.

117. *Id.*

118. *E.g.*, MLB Telephone Interview II, *supra* note 44.

119. *E.g.*, MLB Telephone Interview I, *supra* note 11.

120. *Id.*; MLB Telephone Interview II, *supra* note 44. Sources indicate that the minor leagues provide a constructive environment for research, removed from media hype and the high monetary stakes involved at the professional level. They stress the importance of educating players and trying to maintain the voluntary nature of the programs out of concern for player privacy.

121. Watt, *supra* note 88.

			Health Information (Attachment 18)
NFL	2011–20	Art. 51 § 13(c): On-Field Sensors	<p>Player’s Rights to Medical Care and Treatment; Access to Personnel and Medical Records (Art. 39; Art. 40)</p> <ul style="list-style-type: none"> • Personnel Records – player can request, team must provide w/in 7 days of written request. Can exclude attorney-client privileged material, subjective coaching and scouting reports and any other subjective material. • Medical Records – player may request 2x/yr.; player’s personal physician may request on authorization by player. • Electronic Medical Record System – NFL shall develop and implement online 24-hr EMRS w/in 24 months of effective date (Aug. 2011) <p>NFL Player Contract (Appx. A)</p>
NBA	2011–16	None	Medical treatment of players and release of health information (Art. 22)
	2017–21	Art. 22 § 13: Wearables	<p>Player Health & Wellness (Art. 22) – including:</p> <ul style="list-style-type: none"> • Disclosure of Medical or Health Information - additional limits on what team can disclose if requests info from player/family and info not provided • Electronic Medical Records - NBA will use an EMR system • Player Care Survey - confidential 1x/2 yrs. to get players’ opinion of medical care <p>Uniform Player Contract (Art. 2)</p>
NHL	2013–22	None	<p>Player Medical/Health (Art. 34)</p> <p>Access to Personnel and Medical Records (Art. 40)</p> <ul style="list-style-type: none"> •
MLS	2015–20	Art. 9.10: Physiological Monitoring/Testing	Medical Examinations; Injury Guarantee (Art. 9)

C. Recent Developments in Collective Bargaining

In early March 2017, MLB announced it had approved the use of biometric monitors (manufactured by WHOOP) to be worn by players during games, the first United States league to do so.¹²² The wearable device measures sleep, recovery, and strain.¹²³ In late April 2017, the NFLPA announced that it had signed a deal with WHOOP, through its business incubator, OneTeam Collective.¹²⁴ The deal is unprecedented in the realm of biodata: it grants ownership of the data collected via WHOOP wearables to the players.¹²⁵ The players are reportedly able to control and commercialize all of the data collected; the terms require the players to “use the devices to study the effects of travel, sleep, scheduling and injuries on an athlete’s recovery time, to improve player safety and performance.”¹²⁶ OneTeam Collective is a “growth accelerator” that pairs companies and investors with the sports industry, touting among its assets the “rights to sports-based intellectual property, highlighted by the NFLPA’s exclusive group licensing rights and access to more than 2,000 current NFL players.”¹²⁷ The MLBPA noted that the use of WHOOP wearables by players is completely voluntary.¹²⁸

D. Individual Contracts

Contract negotiations and personnel decisions are at the heart of concerns about employers’ access to players’ ABD.¹²⁹ Whether or not the CBAs adequately address teams’ use of data, the entire sports world is aware of the role of statistics and measurements in personnel decisions. Both teams and players have an interest in optimizing athlete performance and recovery, and

122. Darren Rovell, *MLB Approves On-Field Biometric Monitoring Device*, ESPN (Mar. 6, 2017), http://www.espn.com/mlb/story/_/id/18835843/mlb-approves-field-biometric-monitoring-device. The players’ association declined to comment to ESPN.

123. *Id.*

124. Matthew Perlman, *NFL Players Union Inks Deal with Wearable Tech Biz*, LAW360 (Apr. 25, 2017), https://www.law360.com/sports/articles/916946/nfl-players-union-inks-deal-with-wearable-tech-biz?nl_pk=a7c2c72e-ef44-42d3-9860-41db646eacc0&utm_source=newsletter&utm_medium=email&utm_campaign=sports.

125. *See id.*

126. Perlman, *supra* note 124.

127. *Frequently Asked Questions*, ONETEAM COLLECTIVE, <http://www.oneteamcollective.com/faq.html> (last visited Dec. 14, 2017). OneTeam Collective specializes in analytics, wearables, consumer products, and content.

128. Perlman, *supra* note 124.

129. Karkazis & Fishman, *supra* note 3, at 46 (discussing contract issues and unfair bargaining power; discrimination; and risk of coercion and exploitation).

both have that interest going into contract negotiations—but that interest starts to diverge when bargaining begins: the organization’s goal to pay the lowest, and the athlete’s goal to obtain the highest, fair salary. ABD becomes operational in this context if additional data points are brought to the bargaining table in arbitration. The team normally presents evidence of the player’s fitness and performance, but with ABD, a host of other indicators could be presented as well.¹³⁰

Players are very concerned that ABD will be used against them in renegotiating contracts.¹³¹ A commonly described hypothetical is one where an athlete has, by other measures, adequately recovered from an injury, but a biometric data point reveals that this is not the case. The team, rationally, uses this information in deciding to decline to re-sign the player at the salary it would have otherwise, or release him entirely. The scenario uses a straightforward example; the raw data points are incomprehensible to team personnel without proprietary algorithms developed by specialized sport science analytics companies — “the ever-growing digitization and quantification of things never-before measured and tracked.”¹³² The fact that the data is processed in this manner lends itself to the perception of non-transparency, and goes to the issue of proving the extent of its use in personnel decisions. “[T]he most comprehensive biometric data study ever conducted by a pro sports league on athletes” is indicative of the future likelihood of such scenarios: WHOOP’s findings, presented at the recent MLB winter meetings, reveal “[a] direct correlation . . . between recovery and injury and hitting and pitching performance.”¹³³

Organizational sources stress that ABD collection provides only a few additional data points—of many—used in assessing personnel decisions. No single piece of information is dispositive alone.¹³⁴ The primary goals of ABD at this point are identified as player health and wellness, followed by player performance—sources stress the importance of building trust with players over ABD.¹³⁵ However, the general consensus seems to be that many teams will be at the point of using ABD for personnel decisions in the relatively near future,

130. *See id.* (biometric data potentially used to assess career longevity of current players and draft picks).

131. MLB Telephone Interview I, *supra* note 11; MLB Telephone Interview II, *supra* note 44;

132. *See* Watt, *supra* note 88 (discussing the rapidly growing use of wearables and other performance-tracking devices in baseball and the way in which they alter “both the game and the relationship between major-league baseball teams and their employees”).

133. Rovell, *supra* note 122.

134. Wearable Tech. Co. Telephone Interview, *supra* note 10.

135. *See id.*

and certainly that some of the data has been and will continue to be used in player selection.¹³⁶

Representatives report that it is critical to educate the players about the devices being used, the data collected, and how they as players can utilize the data. A commonly discussed theme was that the players' concerns primarily stemmed from the unknown: backroom analytics remained separated from the clubhouse, and no one, often including the coaching staff, explained to players what was happening with the data.¹³⁷ When sports scientists make the process more transparent and discuss the practical aspects of ABD collection with players, representatives describe the result as higher levels of player interest, less concern (or at least more focused and realistic concerns), and with some players fully embracing the ability to view and use the data to their benefit—and fostering a sense of positive competition amongst the players when trainers posted some of the metrics in the clubhouse.¹³⁸ Many teams now provide data to the players, and the NBA has a league policy of doing so upon request; a source notes that the current challenge is to create reports that are easily understood by players.¹³⁹ Several interviewees adamantly maintain that the data should not be and is not used against the players.

The seemingly powerful language of the NBA wearables provisions falls away in a hypothetical attempt to prove the team “considered” ABD in contract negotiations—and if it did, it is difficult to determine the proper outcome. The team may be fined, but what is the legal recourse with regard to the contract itself? Should the player be allowed to argue that the team's valuation of his worth should be based on all indicators excluding “new” ABD, and if so, would negotiations reset at levels that did not include devaluation based on that data? Due to the vast number of moving parts, including financial restraints like salary caps, and that one player's contract does not exist in a complete vacuum independent of other players' contracts, it would be extremely problematic to “unwind” the deal back to the point in time at which original negotiations took place. The legal framework for employment and labor in professional sport provides an uncertain but intriguing context for the rapid expansion of biometric data collection to unfold. Athletes' legal rights to and ownership status of ABD remains relatively unsettled, due to the newness of the issue and the lack of coverage

136. MLB Telephone Interview I, *supra* note 11; NBA Email Interview, *supra* note 15; *see, e.g.*, MLS Telephone Interview, *supra* note 13;

137. Wearable Tech. Co. Telephone Interview, *supra* note 10.

138. *Id.*

139. NBA Email Interview, *supra* note 15. Other leagues may follow similar policies.

by existing federal law or CBAs. The value (and valuation) of professional athletes makes the question of ownership increasingly pressing, particularly in light of the recent NFLPA decision to strike a deal with a wearables company that ostensibly provides some degree of intellectual property ownership over their ABD, and the power to commercialize such data. In the meantime, thousands of data points per second are analyzed to create a more detailed, multidimensional biometric picture of professional athletes than ever before—and for now, the organizations appear to retain the majority of control over their employees' information.

V. OWNERSHIP, PRIVACY, AND DATA SECURITY

The rapidly increasing rate of collection of various types of ABD in professional sport in the United States indicates that the status of ABD with regard to ownership, privacy, and data security will almost inevitably become issues of contention in the near future. Several isolated incidents related to ABD have occurred, but none on such a scale or to such detrimental effect as to fundamentally call into question the liability of teams with respect to data protection. Currently, the discussion of HIPAA and ABD remains primarily theoretical in nature due to the DHHS sports team exception and the presumed continued effectiveness of player contract waivers—however, it is relevant by dint of the unsettled status of the law toward biometric data in general, and particularly ABD. For now, the state of ABD as health-related information hangs on the employment record loophole created by DHHS and the protective measures teams implement—although they are not mandated to do so. However, the most interesting dynamic with respect to data privacy and security (if not ownership) is that each of the parties involved is motivated to protect the athletes' data:

- (1) The teams want to maintain competitive advantage, and value any edge achieved through cutting edge (and reliable) ABD methodologies; teams also value the trust and cooperation of their players with respect to ABD collection and protection.
- (2) The players may value ABD from a performance and wellness standpoint, but are particularly concerned with ABD privacy as pertains to its misuse by the team or league, its use against them in contract negotiations, or from disclosure to the media. Players' privacy concerns appear to be generally focused on the use of their individual data by team staff and ownership.

(3) The wearables and ABD technology companies value data protection because the industry would not exist without ensuring the security of ABD; from a competitive standpoint, companies could not market programs that teams could not keep confidential from other teams, and companies would not be able to develop more effective proprietary algorithms and sustain their business model.

Thus, all three parties have significant incentives to implement (and demand) stringent data privacy and security measures with respect to ABD. This excludes a discussion of ownership incentives, which is somewhat beyond the scope of the paper, but it is relevant to note that ownership and management incentives might occasionally be at odds with team staff, players, and vendors.

A. Privacy and Health Information

By and large, professional athletes, unlike employees in many other industries, agree to healthcare provided by their employer—as part of their employment. Where does ABD fit within this framework, and is this a new issue separate from the historical questions raised about the nature of the healthcare relationship between teams and players and teams' general ability to retain healthcare information about their players?

The short answer is yes. Again, this comes back to definitions, of healthcare, and of ABD itself. As noted, ABD as a category includes data teams have been collecting for years, such as heart rate. A new range of data is distinctly not analogous to those “traditional” measurements: namely data pertaining to sleep and other around-the-clock monitoring. The ability to measure a huge range of metabolites, electrolytes, enzymes, and other components found in sweat¹⁴⁰ with pinpoint accuracy is another break from the past. Finally, and perhaps most importantly, ABD is not any one type of data point in particular—it is the very nature of the analysis and synthesis of multiple measurements to provide new insights into an individual player's physiology. This capability is what makes ABD collection so valuable to injury prevention and rehabilitation, to maximizing player performance, and to developing detailed operational strategies on the field. The ability to see the

140. See, e.g., Sarah Yang, *Let Them See You Sweat: What New Wearable Sensors Can Reveal from Perspiration*, BERKELEY NEWS (Jan. 27, 2016), <http://news.berkeley.edu/2016/01/27/wearable-sweat-sensors/>.

heretofore unseen—with such precision—is at the crux of what makes modern ABD collection a novel issue. Inevitably, that leads to the question of whether player consent regarding health information sufficiently addresses, or should address, biometric data as well.

The extent of disclosure of health information, and ABD, whether viewed as a subset of health information under HIPAA or more generally, varies in several dimensions: (a) among team personnel (coach, manager, owner), (b) based on the relationship between the player and the health care provider, and (c) based on the particular treatment or exam.¹⁴¹ The NFLPA wearables agreement, negotiated outside the CBA with an external third party via intermediary, may lend an additional dimension to the disclosure question, depending on the exact terms included in the deal; thus far, the parties have not released details regarding the rights of the teams with respect to the data.¹⁴² Since the NFLPA negotiates on behalf of the players, rather than the teams comprised of players, it is not clear whether terms would include the rights or limitations on teams vis à vis the ABD collected by the players, or whether the teams would attempt to require the disclosure of duplicate data via separate wearables. The WHOOP devices collect ABD that differs somewhat from the monitoring devices currently worn by NFL players that tend to collect more biomechanical data such as GPS measurements.¹⁴³

The medical disclosure rules governed by the CBAs and standard player contracts, and to which each player agrees, include: (1) team physicians and athletic trainer authorization to disclose “all relevant medical or health information concerning the Player” to the team, insurance companies, other teams pursuant to possible trades, and to the commissioner;¹⁴⁴ (2) injury-related information to the public or media;¹⁴⁵ (3) an acknowledgement that HIPAA may not prevent re-disclosure of the information and that athletic trainers may not be restricted by HIPAA requirements;¹⁴⁶ (4) player limited to

141. See Walker, *supra* note 69.

142. See Kevin Seifert, *NFLPA Announces Exclusive Agreement to Deliver Continuous Biometric Monitoring Devices to Players*, ESPN (Apr. 24, 2017), http://www.espn.com/nfl/story/_/id/19230532/nflpa-announces-exclusive-agreement-deliver-continuous-biometric-monitoring-devices-players.

143. *Id.*

144. See *Major League Baseball Collective Bargaining Agreement*, art. 13 (G)(3) and attachment 18, MLB (2017–18), <http://www.mlbplayers.com/pdf9/5450407.pdf> [hereinafter *MLB CBA*]; *NBA CBA*, *supra* note 95, at art. 22 (4)(b).

145. See *MLB CBA*, *supra* note 144, at art. 13 (G)(4) and attachment 18; *NBA CBA*, *supra* note 95, at art. 22 (4)(a), (d)–(e); *MLS CBA*, *supra* note 52, at art. 9.1 (iv); *NHL CBA*, *supra* note 99, at art. 34.3(c).

146. See *MLB CBA*, *supra* note 144, at para. 6.

examining medical and trainer records to twice per year, but not restricted to extent that the record contains information subject to HIPAA;¹⁴⁷ (5) rights to data and statistics assigned to Players' Association;¹⁴⁸ (6) intelligence and personality tests for draftees, made available to any team (but not media or public); (7) submit to baseline testing;¹⁴⁹ (8) player health information stored on electronic medical records system (EMR), which can be accessed by authorized academic researchers on a de-identified basis;¹⁵⁰ (9) agree to use of wearables in the case of the NBA;¹⁵¹ (10) physiological monitoring and testing, the results of which may be shared with "coaching staff, technical director and other relevant Team, League, USSF and CSA personnel," and metrics *based* on results may be publically disseminated;¹⁵² (11) blood test results reviewed and/or shared with certain team, league, and/or federation personnel;¹⁵³ (12) authorizing neuropsychological testing and release of results;¹⁵⁴ (13) no disclosures beyond those allowed by CBA without player consent unless de-identified;¹⁵⁵ and (14) disclosure when relevant to investigation of player for violations of CBA or PED policy, grievance proceedings, or substance abuse and behavioral health programs.¹⁵⁶ Unique to the NHL CBA, a 2013 Letter Supplement specifies that the league and players' association must "expressly identify all uses, disclosures and redisclosures of Player Medical Information that occur within the context of a Player's employment and that are contemplated under the SPC and the CBA."¹⁵⁷ However, the second paragraph of the enumerated disclosures list

147. *See NFL CBA*, *supra* note 73, at art. 40, § 2. Article 40 (Access to Personnel and Medical Records) is very short, consisting of one page.

148. *See NFL CBA*, *supra* note 73, at app. A, para. 4 (b).

149. *See NBA CBA*, *supra* note 95, at art. 22 (7).

150. *Id.* at art. 22 (8).

151. *Id.* at art. 22 (13); *MLS CBA*, *supra* note 52, at art. 9.10. The wearables sections are discussed in detail.

152. *See MLS CBA*, *supra* note 52, at art. 9.10. The Union may consent to public dissemination of physiological testing results, and metrics *based* on physiological measures (like heart rate, "exertion rate, heart rate percentage above baseline") but that do not disclose the actual measurements may also be publically disseminated as long as the league conducts "a dialogue with the Union in a manner consistent with Article 5 for subjects on which the Union waived its right to bargain."

153. *Id.* at art. 9.1(i)-(iii).

154. *See NHL CBA*, *supra* note 99, at art. 34.3(a).

155. *Id.* at art. 34.3(c)(ii).

156. *Id.* at art. 34.3(c).

157. *Id.*, Letter Agreement: Player Medical Information. Specific disclosures laid out in art. 34.3 (c).

allows for disclosure of de-identified player information,¹⁵⁸ and the list itself contains several relatively broad catch-all phrases, including “any other purpose as approved by the Joint [Health & Safety] Committee.”¹⁵⁹

An additional wrinkle to the HIPAA framework and privacy concern context is that *de-identified* info (by HIPAA standards) does not require authorization for disclosure.¹⁶⁰ Individually Identifiable Health Information (IIHI) identifies if there is a “reasonable basis to believe it can be used to identify an individual” and only becomes PHI when a covered entity “creates, receives, or maintains the information.”¹⁶¹ This standard is relevant because the ABD is de-identified, but several sources interviewed note that it could be used to identify individual players if hacked and if the recipient of the data knew what they were doing.¹⁶² Once accessed, piecing together the identity of individual players is made less difficult because professional athletes are a very small subset compared to the general population and their information is already stored separately from, for example, the millions of consumers that use Fitbits and similar data collection devices.

As pertains to research: “If the information is not individually identifiable, such as healthcare research information that only identifies a particular population, not individuals, then it is not protected by HIPAA. In research, this can get complicated, and further inquiry should be made when seeking a determination on a small population.”¹⁶³ Some European countries with universal healthcare systems maintain comprehensive databases for research use.¹⁶⁴

Bioethics Questions, Consent & Privacy: As alluded to earlier, conflicts of interest arise with consent issues when healthcare professionals represent the team and are treating the players. In a recent interview with VICE Sports,

158. *Id.* at art. 34.3(c)(ii).

159. *Id.* at art. 34.3(c)(iv).

160. See HIPAA, *supra* note 53.

161. *De-Identification and Its Rationale*, DEP'T OF HEALTH & HUMAN SERV., <https://www.hhs.gov/hipaa/for-professionals/privacy/special-topics/de-identification/#rationale>. See also Data Security, *infra*.

162. See MLB Telephone Interview I, *supra* note 11.

163. See HIPAA, *supra* note 53.

164. See MLB Telephone Interview I, *supra* note 11; see also Donna Gitter, Panel 4, *Informed Consent and Privacy of De-Identified and Estimated Data: Lessons from Iceland and the United States in an Era of Computational Genomics*, THE PETRIE-FLOM CENTER FOR HEALTH LAW POLICY, BIOTECHNOLOGY, AND BIOETHICS AT HARVARD LAW SCHOOL 2016 ANNUAL CONFERENCE: BIG DATA, HEALTH LAW, AND BIOETHICS (May 6, 2016), <https://vimeo.com/166555666#t=30m54s>.

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Alan Milstein, a sports and bioethics lawyer noted that player consent is crucial in ABD collection, but that the nature of informed player consent is [almost invariably] problematic in the professional sport context.

A young player, 19 years old, when he sees the team physician, is going to be under the impression that that physician is his physician, and that there's going to be some kind of doctor-patient relationship with some kind of fiduciary duty that the physician owes to him . . . But that physician really works for the team, and that creates a lot of ethical issues.¹⁶⁵

The broad ethical issue is not a new development, particularly with injury self-reporting, treatment, and recovery: “To cast the conflict in its simplest terms, the long-term health of the player and the short-term interest of the team may conflict.”¹⁶⁶ (The MLS and NHL CBAs dictate the allegiance of team health care professionals be to the “Player-patient”).¹⁶⁷ ABD collection, in comparison to isolated incidents of injury, for example, is much more far-reaching and extensive in scope; players may thus be consenting to something surveillance-like that extends to daily activities and fully monitoring on-field activities, as opposed to simply consenting to routine health exams. Presumably, though, this consent will occur under the same [pressures] as players would experience in consenting to health authorizations (agree or don’t play) but may have even less of an idea of what they are actually agreeing to allow teams to collect and use. Karkazis and Fishman report that the waivers are likely to protect teams, although none have been challenged in court; but that the waivers do not take broader ethical issues surrounding ABD into account.¹⁶⁸

165. Watt, *supra* note 88.

166. McChrystal, *supra* note 58, at 163.

What we encounter, then, in considering the privacy or transparency of medical information about professional athletes, are complex forces of short-term and long-term interests on the part of various stakeholders. Players, healthcare providers, teams, and leagues all have their own complicated interests when it comes to discovering and disclosing medical information about players.

Id. at 164.

167. *MLS CBA*, *supra* note 52, at art. 9.7; *NHL CBA*, *supra* note 99, at art. 34.1 (b).

168. Karkazis & Fishman, *supra* note 3, at 51. The authors interviewed a team lawyer, who stated

Our interviews suggest that nothing of a sinister nature is occurring with respect to consent to ABD collection, and indeed that teams appear to be very respectful of player privacy and adamant about the completely voluntary character of data collection programs. Organizations cite the importance of players being able to trust doctors and trainers to do right by the players and their health as individuals, not just employees of the team.¹⁶⁹ However, this commitment to privacy and voluntariness falls back on the teams themselves to implement and enforce, without regulations or requirements on point from either federal statutes or the leagues—leaving open the question of the future of ABD collection with respect to informed consent and the likelihood of increasingly pressing ethical issues. Like much new technology, the law has not kept pace of the nuances of technological innovations or the development of cybersecurity issues, and frequently jarred into action only when one bad actor (in this case, out of the hundreds of organizational staff committed to protecting athlete data) to cause a damaging incident that forces the problem into the public consciousness and eventual legislation. Since the leagues maintain a unique position under the law of private associations, this may actually be an issue that it would behoove the leagues themselves to explore and attempt to preempt before a major incident inevitably occurs. Here, with consent, we see the ethical slide into the practical: players agree to voluntary programs, but may not fully understand the scope of their consent, and where misuse or breach of the data has real consequences for the players' career.

Health information and biometric data privacy may, again, be viewed through the lens of the disproportionate value given to professional sports and athletes. Financial concerns related to privacy, beyond the typical consumer's (very serious) concerns, arise because professional sport is such a lucrative industry. Consumer data is valuable in the aggregate, as analytics technology would not progress in the same way without access to consumer data.¹⁷⁰ An individual player's biometric data potentially has a very high value on its own, particularly in relation to injury status or personnel decisions. Estimates are somewhat difficult to determine at the margins. However, if viewed in terms of lost contracts, recent commentary places the value of ABD in the millions.¹⁷¹ One specific example is that of the MLB's use of the Motus

that "the athletes sign a pretty broad waiver that essentially waives their right to have the privacy that a normal person would expect, so we don't have that to worry about." *Id.*

169. See MLB Telephone Interview I, *supra* note 11.

170. See MLS Telephone Interview, *supra* note 13.

171. See Jeremy Venook, *The Upcoming Privacy Battle Over Wearables in the NBA*, THE ATLANTIC, Apr. 10, 2017, <https://www.theatlantic.com/business/archive/2017/04/biometric-tracking-sports/522222/>.

Baseball Sleeve, which has the capacity to monitor the tension exerted by pitching on the UCL; injuries to the UCL sideline numerous pitchers each year and cost teams millions in pitching salaries.¹⁷² Players' data, especially as it affects their short term injury status and long term career prospects, may be critical to point spreads, fantasy and daily fantasy, merchandise sales, broadcast deals, and advertising and sponsorship, among others.¹⁷³ Similar issues arise with failures to disclose injury information: "In nearly every level of sports, disclosure of a player's health is common. The digital age makes this information available instantly – fulfilling an expectation."¹⁷⁴

Currently, although CBAs—generally—technically cover the collection and disclosure of ABD either by default through the health information provisions or more directly through on point provisions and waivers, teams do appear to be erring on the side of additional consent, at least at the professional level. This development also appears to be intertwined with the use of ABD to foster player health, a reason cited by all interviewees as a central reason for collecting ABD.

What the CBAs allow: As overviewed in Table 3, CBAs largely dictate the parameters of player health and medical issues. CBAs require players to undergo medical exams and testing, and to consent to the disclosure of their health information, as conditions of employment.¹⁷⁵

Medical exams and extensive regulations related to healthcare are to be expected as player health is inextricably linked with a particular individual's suitability for employment as a professional athlete; the extensive disclosure and consent requirements may not be. Some disclosure amongst the medical team and the athletic trainers makes sense from an efficiency standpoint; it would not be practical or necessarily desirable for players to be able to negotiate various levels of disclosure each time an injury occurred. However, since the consent provisions of CBAs by default almost certainly extend to most of the

172. *Id.* Venook notes that UCL (ulnar collateral ligament) tears in pitchers are "perhaps the most pernicious injury problem in professional sports." Many pitchers elect to undergo Tommy John surgery, the recovery and rehabilitation for which usually takes a year. *Id.*; *Tommy John Surgery*, WEBMD, <http://www.webmd.com/fitness-exercise/tommy-john-surgery-ucl-reconstruction#2> (last visited Dec. 14, 2017); see *MLB Approves Wearable Technology for Two Devices this Season*, ESPN (Apr. 5, 2016), http://www.espn.com/mlb/story/_/id/15140473/mlb-approves-wearable-technology-two-devices-season.

173. See Walker, *supra* note 69.

174. *Id.*

175. See McChrystal, *supra* note 58, at 166–67 for an excellent overview of the common CBA medical-related provisions as of 2014. "Each of the standard player contracts [also] contains some form of language stating that the player agrees that he will remain in top physical condition and is physically able to perform up to the best of his abilities." *Id.* at 168.

ABD (some of which is already subsumed by the medical/employment records exemption), the novelty and volume of ABD calls into question whether the agreements adequately account for player consent and privacy. The unique nature of ABD also calls into question whether team responsibility toward ABD is adequately controlled by CBAs—and arguably it is not.

As noted, key provisions found in each CBA include parameters (some very broad) for disclosure of health information to external parties: (1) the league, (2) the other teams, and (3) the public.¹⁷⁶ League disclosures are often made for injury status designations, which are especially rigorous in the NFL.¹⁷⁷ Disclosures to other teams are allowed to be made when the player may be traded (although not in the NFL).¹⁷⁸ Public disclosures typically also have to do with injury status.¹⁷⁹ Again, ABD falls into a gray area: if categorized as medical information, another team could request and expect to receive ABD in anticipation of a possible trade. Traditional ABD, after all, technically includes measurements like heart rate and blood pressure. However, the organizations tend to treat much of the “new” ABD as a proprietary entity almost akin to intellectual property—the product of extensive analysis and customizable programs designed to the specific needs of a particular team. At the front end of the “new” spectrum is raw metrics, vast quantities of data, whose meaning is indecipherable to the naked eye without analytics processing.¹⁸⁰ Would this proprietary information then be treated under the CBAs as health information or intellectual property, and would the intellectual property be disclosable anyway, under the CBA terms? According to the reported terms of the NFLPA/WHOOP deal, the players are to retain control over the intellectual property aspect of biodata collected

176. Health information, in the MLB CBA, for example is defined as:

my entire health or medical record, including, but not limited to, all information relating to any injury, sickness, disease, mental health condition, physical condition, medical history, medical or clinical status, diagnosis, treatment or prognosis, including without limitation clinical notes, test results, laboratory reports, x-rays and diagnostic imaging results, but does not mean any health or medical records or any test results, if any, deriving from Major League Baseball’s Joint Drug Prevention and Treatment Program.

MLB CBA, *supra* note 144 at attachment 18.

177. *See, e.g., id.* at 174–80.

178. *Id.*

179. *See* Matt McCarthy, *Does Dustin Pedroia—Or Any Pro Athlete—Have a Right to Privacy*, DEADSPIN (Oct. 18, 2013), <http://deadspin.com/does-dustin-pedroia-or-any-athlete-have-a-right-to-pr-1446392447> (discussion of privacy rights by physician, primarily in the context of injuries).

180. *E.g.*, MLS Telephone Interview, *supra* note 13.

through WHOOP monitors, but it is not yet clear what rights the teams have regarding the same data, much of which is being collected already.¹⁸¹

Undrafted players, who are by definition not (yet) employed by the professional leagues, are generally held to the same requirements as players' union members by some combination of evolving custom, unsuccessful legal challenges,¹⁸² and presumably the self-reinforcing phenomenon of the sheer desire to play at the professional level no matter what. The relatively early unsuccessful legal challenges "have served to reinforce the regime in which medical testing of professional players begins before they land a contract and continues throughout their careers."¹⁸³ Players entering the drafts may have different [quasi-contractual] requirements. For example, both the 2011 and 2017 NBA CBAs specify that pre-draft medical exams are voluntary, and top players tend to skip the Scouting Combine (and accompanying medical tests) and opt to test with individual teams only in order to keep their information within the team rather than disclosed to the entire league.¹⁸⁴ By contrast, McChrystal reports that while the NFL CBA does not require exams at the Combine, "it has apparently become an accepted practice to submit yourself to a medical examination by any team that requests it."¹⁸⁵

What teams are doing to address privacy and consent: Based on our interviews with team, league, and biometric analytics industry representatives, teams at the professional level are acutely aware of the need to respect the importance of their athletes' personal information, both for the raw data, and for the end products: the "digestible" data (what the data actually means). Representatives repeatedly stressed the importance of gaining player consent for ABD collection, objectively educating players about what collection devices actually do and how the data is to be used, and ensuring that all collection programs remain voluntary. It is less clear how a team would react if the league were to exercise its power to mandate certain ABD collection, as

181. See *WHOOP Strikes Landmark Deal as the Officially Licensed Recovery Wearable of the NFL Players Association*, NFLPA (Apr. 24, 2017), <https://www.nflpa.com/players/news/whoop-strikes-landmark-deal-as-the-officially-licensed-recovery-wearable-of-the-nfl-players-association>; see also Kristy Gale, *The Sports Industry's New Power Play: Athlete Biometric Data Domination: Who Owns It and What May Be Done with It?*, 6 *Ariz. St. U. Sports & Ent. L. J.* 7 (2016) (in-depth discussion of the intellectual property implications of ABD).

182. McChrystal, *supra* note 58, at 167.

183. *Id.*; See *Clarett v. Nat'l Football League*, 369 F.3d 124, 138–39 (2d Cir. 2004); see also *Wood v. Nat'l Basketball Ass'n*, 809 F.2d 954, 960 (2d Cir. 1987).

184. See McChrystal, *supra* note 58, at 167.

185. *Id.* Discussion of specific reasons players would want to conceal medical information (especially injury status) with respect to duty of candor.

is allowed by at least the current NFL CBA.¹⁸⁶ This is particularly interesting in light of the NFLPA deal, which does result in the measurement of some types of data not typically collected by current NFL devices.¹⁸⁷ McChrystal summarizes the value of privacy to players: “Professional athletes have more reason than most of us to jealously guard information about their health. As people often highly paid for their physical abilities, adverse health information can cost professional athletes millions, or even end careers.”¹⁸⁸ Certainly, the teams have a mutual interest in protecting the ABD and the proprietary “answers” that data produces. Interviewees reiterated the importance of maintaining the most minute technological “edge” and guarding not just the ABD but the strategies for collecting data and using specific technologies: the commenters noted the constant quest for competitive advantage and the influence of that mentality on virtually all team decisions.¹⁸⁹

The power of competition as a driving factor contributing to teams’ high level of ABD protection is not inherently to be criticized: the fans demand that teams strive for that edge, the industry demands the edge, and analytics companies respond to that demand. As in the realm of IP, inventors and creators are partially motivated by market forces to continue creating based on the framework in place to protect their works, and the knowledge that the system allows them to profit from their ideas. With ABD and analytics, the system fueled by competition—and, it is always worth noting, huge money—the same reciprocating process is at work; the teams arguably will continue to protect athlete data more strenuously from external parties to a greater extent than they would if solely motivated by player concerns.

However, player concerns over the *internal* use of their data (that is,

186. *NFL CBA*, *supra* note 73 at art. 51.

187. *See Seifert*, *supra* note 142.

188.

In addition, endorsements and other income opportunities, both during the athlete’s playing days and thereafter, can be affected by the player’s image, including aspects of that image that relate to health and vitality. Privacy is not costless, however, particularly in professional sports. Teams spend millions relying on the ability of a player to perform at an exceptional level. A concealed health problem can cheat the team of the value for which it bargained.

McChrystal, *supra* note 58 at 180.

189. *See* MLS Telephone Interview, *supra* note 13; NBA Telephone Interview, *supra* note 106; *see also How Wearable Tech Is Transforming a Coach’s Decision-Making*, OHIO U., <http://onlinemasters.ohio.edu/how-wearable-tech-is-transforming-a-coachs-decision-making/> (last visited Dec. 14, 2017) (for information on the importance of maintaining an edge in wearables, particularly “Providing Coaches and Trainers with Unprecedented Information”).

amongst organization personnel and ownership) are not necessarily addressed by the aforementioned motivations for competition and profit. Here, player concerns are potentially well-founded (if hopefully not realized) due to the nature of the employee-employer relationship and the degree of internal control maintained by the teams, bringing the subject back again to the importance of players' unions in tackling these internal concerns during collective bargaining in the very near future. Several representatives interviewed pointed out the importance of internal team privacy policies for this very reason: one noted that the health-related ABD is kept between only a few people—none of which includes the coaching staff.¹⁹⁰

While competitive advantage is always a consideration, particularly an external concern, it is not the sole reason for careful protection of player data. Teams explain that they follow HIPAA protocols for ABD in an effort to prioritize the trust of and relationships with the players, and to counterbalance the CBAs' broad discretion over health information.¹⁹¹ In treating the ABD as medical information, representatives specifically highlight the need to create an expectation of patient confidentiality and to be transparent about which data is collected by a particular device and the goals for collecting it.¹⁹² The teams that have developed policies to limit and control the handling of ABD note that their protocols go well beyond any restrictions imposed by the leagues, which mainly pertain only to medical staff.¹⁹³

Although somewhat beyond the scope of this paper, it should be noted that an alternative potential ownership framework may exist in an intellectual property regime. Gale argues that, from an IP standpoint, ABD is owned by athletes and the ownership carries with them for their entire lives.¹⁹⁴ ABD by definition, and unlike sports statistics (which traditionally cannot be owned), "contains unique characteristics that identify a specific athlete."¹⁹⁵ Because that uniqueness results in its high value, and the data is inherently linked to a particular player, those characteristics "have corresponding property rights," namely, the right of publicity.¹⁹⁶ However, because most CBAs (with the possible exception of the recent NBA CBA) and standard player contracts

190. See NBA Email Interview, *supra* note 15.

191. *Id.*

192. *Id.*

193. *Id.*

194. See Gale, *supra* note 6 (including coverage of the 2017 MIT Sloan Sports Analytics Conference).

195. *Id.*

196. *Id.*

contain so many waivers and disclosure agreements, it is possible that potential IP rights may continue to deteriorate or not be taken advantage of,¹⁹⁷ as they are subsumed by additional waivers or existing provisions. This is particularly relevant if the meaning of the language of, for example, health information disclosure provisions are not renegotiated to address ABD, or if the language is interpreted to do so by default. If players' associations do not bring ABD to the table in future CBA negotiations, it is possible that ABD ownership will be litigated in court, following some success by athletes in recent cases pertaining to right to publicity issues.¹⁹⁸ Takeaways: ABD is almost certain to continue to be guarded zealously by teams from the outside world, particularly as it comes to resemble intellectual property and information derived via proprietary programs/processes; this motivation is critical in preventing the public (particularly gambling entities) from gaining access to sensitive player data. However, player concerns about the use of ABD by teams remains warranted, and largely unaccounted for by the legal frameworks in place; the use of this data is almost wholly controlled by the responsibility teams take at the internal level — and for all intents and purposes in the context of or as a result of health information or the employment record exemption—the ABD is owned by the teams, who have paid for the ABD collection devices and accompanying analytics services.

B. Data Security and Privacy

Extensive data tracking unavoidably carries the risk of revealing personal details of players' private lives, and the potential for such information to fall into the wrong hands. The ABD is de-identified and heavily encrypted, but concerns of data privacy and security inevitably arise in conjunction with the storage, use, and access to such valuable data. Currently, only the new NBA CBA addresses such concerns, directing the joint committee to set cybersecurity standards, in conjunction with experts as necessary, “for the storage of data collected from Wearables,” and to vet any device requested by teams and ensure team compliance with those standards.¹⁹⁹ Teams cannot ask players to wear ABD collection devices unless they are already approved, or the committee establishes device and team meet cybersecurity requirements within ninety days.²⁰⁰ The NHL CBA tangentially addresses cybersecurity in

197. *See id.*

198. *See generally* Gale, *supra* note 181.

199. *NBA CBA*, *supra* note 95, at art. 22, § 13(c)–(f).

200. *NBA CBA*, *supra* note 95, at art. 22, § 13(e)–(f).

an addendum on implementing an NHLPA player information portal.²⁰¹

The United States does not have comprehensive cybersecurity regulations in place that apply across industries, and the only potential industry-specific regulations that appear to apply is, again, the HIPAA Security Rule. This gap leaves ABD in much the same position with respect to security as it does with privacy: questions of classification and waivers largely leave data security as the responsibility of the teams, with sparse guidance from the CBAs.

As recent events reflect, the risk of a data breach is a constant possibility in virtually any industry or level of government.²⁰² Organizations describe data security as a top concern: “[With] the world as such anything is liable to be hacked.”²⁰³ A great deal of ABD is stored on cloud servers, and teams prioritize maintaining the greatest degree of security possible. Perhaps the most well-publicized ABD incident, however, was the result of a relatively technologically simple breach: Cardinals employees hacked into the Astros scouting database simply by reportedly using someone else’s password. Chris Correa, a Cardinals employee, has just started a forty-six month federal prison sentence. He recently released a statement saying the Astros hacked the Cardinals first. The MLB investigation has concluded, and the United States District Court just unsealed additional information on the case.²⁰⁴

Teams are ultimately responsible for the data. A representative from a major wearable technology company reports that no injury-related data at all is stored; solely de-identified movement based data.²⁰⁵ That data is stored in the cloud and only utilized by the company to develop new algorithms, which would be impossible without the data itself.²⁰⁶ The team, however, owns the data and the raw files. The company’s privacy protocol is to designate a chief

201. *NHL CBA*, *supra* note 99, at 512.

202. *See* Fisk, *supra* note 1; Williams, *supra* note 2.

203. MLS Telephone Interview, *supra* note 13.

204. Lindsey Adler, *Cardinals Hacker Probably Leaked to Deadspin as Revenge for Astros’ Sports Illustrated Cover*, DEADSPIN (Jan. 30, 2017), <http://deadspin.com/feds-cardinals-hacker-probably-leaked-to-deadspin-as-r-1791778599>; Mark Saxon, *St. Louis Cardinals Get Off Light with Hacking Scandal Penalties*, ESPN (Jan. 30, 2017), http://www.espn.com/blog/st-louis-cardinals/post/_id/2828/cardinals-get-off-light-with-hacking-scandal-penalties; *Chris Correa Maintains Allegations Houston Astros First Stole Information from St. Louis Cardinals*, ESPN (Jan. 31, 2017), http://www.espn.com/mlb/story/_id/18592311/chris-correa-maintains-allegations-houston-astros-first-stole-information-st-louis-cardinals. The commissioner penalized the Cardinals with their top two 2017 draft picks and \$2 million (which is not harsh in light of actual salaries), citing the Cardinals’ vicarious liability for Correa’s actions; Correa was said to have acted alone as a “rogue” employee for his own benefit.

205. Wearable Tech. Co. Telephone Interview, *supra* note 10.

206. *Id.* Any new algorithm is then tested for internal and external validity, a critical piece of the analytics industry.

account administrator for the team: that person is assigned all control over internal permissions and decides which other members of the team staff are able to access the data, and to what extent.²⁰⁷ Following such protocols, where, for example, the only team members with access to the data are the analytics personnel, addresses one of the key player concerns: that the results of the ABD collection will be used against athletes or misused by members of the team staff, such as coaches, or shared with staff that would utilize it in contract renegotiations. However, it also raises the concerns that accompany self-imposed team policies without the enforcement bite of a true remedies regime for players in the case of a breach of team policy. As noted earlier, even if the ABD is carefully sequestered among team staff, it will likely become increasingly difficult to distinguish, much less prove, the ABD is in fact being used in contract renegotiations, particularly as ABD grows and synthesizes a growing number of metrics in new (and proprietary ways).²⁰⁸

Where cybersecurity responsibility falls on teams, the terms of contracts with vendor are critical to protecting the team.²⁰⁹ Representatives interviewed report ensuring the security of ABD through contract provisions that address ownership, access, and insurance. Vendors are vetted for security protocols, assessed for whether data is stored locally or on the cloud, and whether the company is protected by data breach insurance. One representative prefers for the team to own the data outright, or at least that it is stored in a way that the vendor cannot use the ABD for its own research purposes; the legal department also establishes that the vendors have insured the data against potential breaches.²¹⁰ Another noted that negotiations always include a provision that no third parties will have access to the data.²¹¹ Representatives adamantly stated that “any inkling” that a vendor had questionable data security practices or intentions would be a deal-breaker.²¹² Industry representatives confirm the importance of data security is mutual: it is absolutely crucial for their reputation.²¹³ Security protocols include extreme password requirements, continual auditing of cybersecurity measures by third party experts, and encrypting all data to prevent interpretation of data in the

207. *Id.*

208. *See* Venook, *supra* note 171.

209. *E.g.*, NBA Telephone Interview, *supra* note 106.

210. MLB Telephone Interview II, *supra* note 44.

211. NBA Telephone Interview, *supra* note 106.

212. *Id.*

213. Wearable Tech. Co. Telephone Interview, *supra* note 10.

event of a breach.²¹⁴

ABD is de-identified and heavily encrypted, but concerns of data privacy and security inevitably arise in conjunction with the storage, use, and access to such valuable data; one of the issues too numerous to address here. Interviewees differed on the extent to which data de-identification adds a layer of insurance to the contingency of a breach. Although industry representatives stressed the inability of a layperson to “read” the raw data, one team representative remarked that because the sample size for a team is so small, a data breach of one team’s medical information would easily allow a hacker to re-identify players.²¹⁵

Overall, team representatives interviewed report that teams tend to stringently protect player ABD, even in the absence of federal law or CBA terms. In addition to policies of treating ABD as the equivalent of personal health information; teams appear to make a strong effort to deal only with reputable vendors that use best practices in data security; and limit access to data among team personnel to a select few.

VI. CONCLUSIONS

The current status of ABD with regard to data privacy generally relies on teams to self-regulate the level of protection of player data and degree of consent to use and disclosure of the data, since so much of ABD is essentially subsumed by the broad health information disclosure provisions contained in CBAs. Teams report the importance of consent, trust, and protecting the data, but they have very few if any legal obligations to do so by operation of the CBAs and employment record exemption.

Teams should no longer be exempt from the federal health information disclosure rules based on the DHHS commentary that sports teams are most likely not covered entities, and even if they are, the health records are almost entirely considered part of exempt employment records. The exemption was almost certainly the result of lobbying and influence of the professional sport leagues, and is becoming outdated with the rapid increase of ABD collection and the ever-increasing data security risks and player privacy concerns.

Alternatively, the data could be protected by renegotiations of the remaining CBAs: the current NBA CBA, while not perfect, does currently provide for a framework of rights for players with regard to their data and mandates that ABD collection programs are voluntary. The recent NLFPA

214. *Id.*

215. *Id.*

agreement with WHOOP embodies a different ownership regime, intellectual property, in order to give players rights to their data, including the right to control and commercialize the ABD. Assuming the HIPAA sports team exception remains in place, renegotiating CBAs, perhaps by following the existing IP frameworks relevant to sport law, would best protect athletes' biometric data from a privacy standpoint, allowing some type of remedies regime as recourse. CBAs should also be renegotiated to implement provisions regarding requirements for data security safeguards to be implemented by the teams, in accordance with best practices and for example, with NIST cybersecurity standards, and which would include both internal and external security measures.