

Data Entry and Analytics: One Year With Ascension's Ethics Integration Database

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In April of 2020, amidst a flurry of activity related to COVID-19 across all of healthcare, a small cohort of ethicists within Ascension decided to embark on a redesign of the “Ethics Tracker” database. At the outset of this project there was agreement that the redesign needed to be guided by end-user input, that the database would be structured in such a way that the ethics department of Ascension could make decisions guided by the data captured, and that data visualization would help Mission Integration as a whole “tell our story.” These goals, guided by a Usability Testing Process and Redesign in collaboration with expertise from the Ascension Studio team, helped the Ethics Center of Expertise (CoE) avoid some of the pitfalls of past database design and bring to scale a data entry and visualization system called Ethics Integration Database (EID).

USABILITY TESTING

In the early phases of the redesign process, we connected with the User Experience (UX) team at Ascension Studio to learn about ways we might improve the ethics database for end-users. After discussing how and by whom our database is used, the UX design team recommended we do usability testing as part of

our redesign process. Usability testing allows us to gain insight into the end-user's experience of the database and to incorporate this feedback into the redesign process itself, thereby allowing end-users to be an integral part of the redesign process. Our engagement of the usability testing process consisted of the creation of a usability test plan, usability testing, and the incorporation of usability testing feedback into the redesign process.

A usability test plan is essential to help ensure consistency across the usability testing process. In this test plan, we first identified the testing subjects. We were able to include users from all roles who would be entering data into our database, users from different markets as well as the system office, and users with varied experience entering this kind of data. Our test plan also included a script for usability testing to ensure consistency across each testing session, as well as a template for recording feedback from the user during testing. Finally, our test plan included three case scenarios which would serve as the basis for a testing subject to enter a record into the database.

Each usability testing session included a facilitator, a note-taker, and the testing subject. Given the location of our testing subjects and the presence of a global pandemic, we utilized a virtual format for our testing sessions. Using

the script from the test plan, the facilitator would first provide a high-level overview of usability testing and our ethics database. Next, the facilitator would ask the testing subject to share their screen. The facilitator would read through the first case scenario and then ask the testing subject to enter this record into the database. Importantly, we asked the testing subject to “talk aloud” throughout the testing session, so we could know what the testing subject was thinking as s/he was entering the data for the scenario. The note-taker would try to capture everything that was said by the testing subject throughout the testing session and would generally capture how the testing subject was recording the case scenario in the database. We would provide very minimal guidance for the testing subject while entering the case. After completing the first case scenario, we would do the same for the second and third cases. Our ethics database is accessible by desktop and mobile platforms, so we made sure every testing subject used both desktop and mobile platforms — and we changed up the order of their use to avoid order bias.

Finally, after completing all of our usability testing sessions, we compiled all the notes from the testing sessions and looked for themes. Surprisingly, we discovered strong themes after only a few testing sessions. We discussed the results of the usability testing in a redesign group meeting and were able to make changes to the database that were driven by the end-users.

DATA ENTRY AND VISUALIZATION

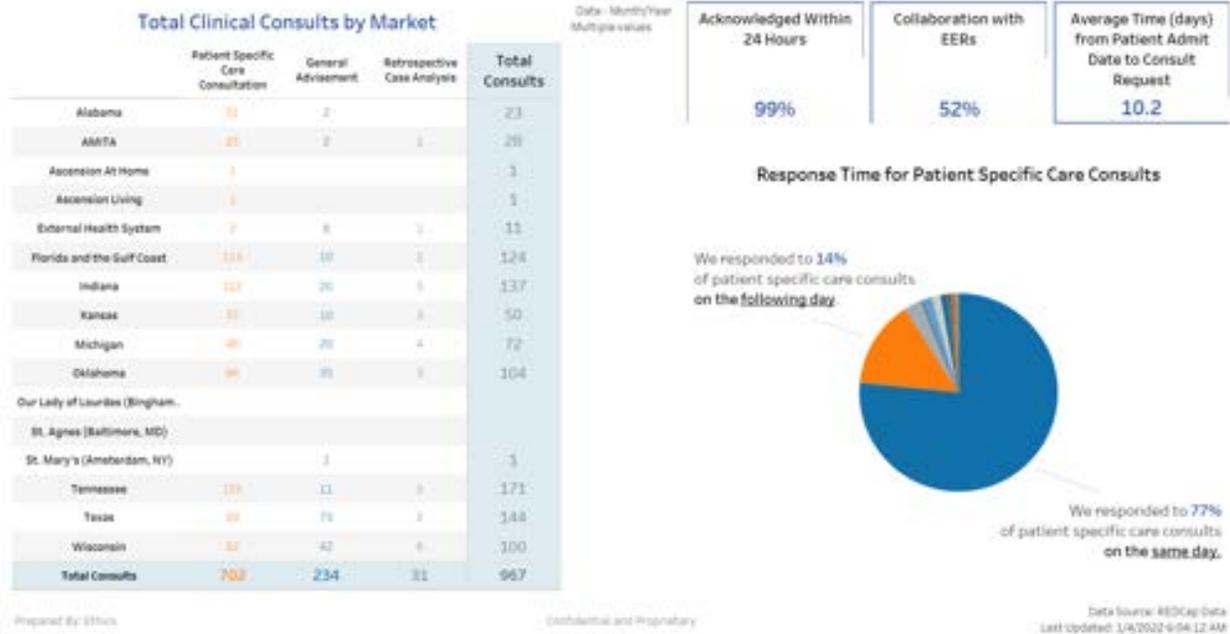
The timing of the redesign of our database was somewhat serendipitous as we were able to take advantage of two platforms that Ascension

began to formally support through internal infrastructure — REDCap and Tableau. REDCap was created at Vanderbilt University in 2004 in response to the growing need for a secure data collection tool that met HIPAA compliance standards. That development led to the REDCap consortium in 2006 which began as a group of non-profit organizations interested in expanding the functionality of REDCap through collaboration.¹ Relative to the design of EID, use of REDCap allowed the Ethics CoE to take advantage of well over a decade of database design with the additional benefit of internal experts to design a structure that would yield high usability.

Tableau is a visual analytics platform. Tableau was founded in 2003 as part of a computer science project at Stanford that desired to make data analysis more visually appealing and more easily interpreted by the general population.² Mission Integration has begun work to communicate its “empirical narrative” in the same way all other clinical and operational entities have done. Relative to the “empirical narrative” of EID data entered into REDCap, use of Tableau allows the Ethics CoE to provide data visualizations regarding all domains of ethics service.

Use of these two platforms greatly increased the appeal of data entry, as those inputting records could visualize models, tables, etc., directly related to the data entered. This was an important first step in redesign as the insights gained from usability testing were able to be implemented in the redesign of EID. This redesign has also enabled the creation of a significant number of dashboards (n > 30 at this time) within Tableau for data visualization and communication throughout the healthcare

TABLE ONE



ministry. For example, Table 1 is a dashboard illustrating our data for FY 21 related to Clinical Consultation.

Ascension’s data analytics visualization tool provides the ability to see the volume of clinical consultation across Ascension broken down by Ministry Markets and by sub-type (i.e., Ascension Clinical Ethics Taxonomy) of clinical consult as well as several other “key performance indicators”. Specifically, the key performance indicators shown on the right side of Table One include the number of clinical consults acknowledged within 24 hours of request; percentage of clinical consults entailing some sort of collaboration with at least one Embedded Ethics Resource (EER — members of our Ethics Integration Committees trained in certain types of clinical ethics consultation); and average time from “patient admit date to consult request.”

These data allow us to better understand the demand for different types of clinical ethics consultations (e.g., patient specific care consults versus general advisements and retrospective case analyses). The other metrics related to response time, collaboration with Embedded Ethics Resource and “average time (days) from patient admit to consult request” are indicative of whether Ascension’s clinical ethics consultation service delivery model is working in moving consult requests upstream and allow us to identify opportunities for continuous quality improvement.

In addition, the Ethics CoE shares an Organizational Ethics Overview, Ecclesial Relations Overview and an Education Overview Tableau dashboard with the entire organization through the Ascension Analytics Hub. Internal to the Ethics CoE, a variety of additional dashboards allow us to “drill down” on specific

areas for further inquiry and data analysis. By its very nature, this work will be ongoing as we continuously explore new questions based on our current and future data set. Nonetheless, a single data repository for analytics has been incredibly beneficial to improve both the quality of the work we do and inform decision-making for the Ethics CoE across the entire organization. 🌱

ENDNOTES

1. For more information on REDCap, see: <https://projectredcap.org/>. Accessed on December 31, 2021.
2. For more information on Tableau, see: <https://www.tableau.com/>. Accessed on December 31, 2021.

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