

## Chapter 6: Monitoring and Improving

### Monitoring Decision Aid Delivery and Improving the Process

To promote reliable decision aid delivery, it is important to monitor progress to help meet project goals. The implementation team should be tracking delivery, identifying deviations from the planned workflow, addressing barriers and revising the workflow as needed. Using dashboards can help with monitoring and reporting to participants and to leadership. Here are some steps to consider:

- Develop tracking tool or template with key information to monitor progress
- Assign task of tracking delivery (or pulling reports of delivery if available in EHR) to someone on the implementation team.
- Set aside time for implementation team to review decision aid delivery data and follow up with individual sites or clinicians if unusual activity is noticed (either good or bad) to identify best practices and/or challenges.
- Set up periodic (e.g. weekly, monthly, quarterly) communication to provide feedback to frontline staff and clinicians about decision aid delivery and to share best practices across sites.
- Often feedback is more frequent at the beginning of the project and can move to be less frequent once the workflow becomes more established.
- Recognize successes publicly to reinforce importance of the work.

**The following resources are included in this chapter:**

Resource #6.1: Data Dashboard feedback description

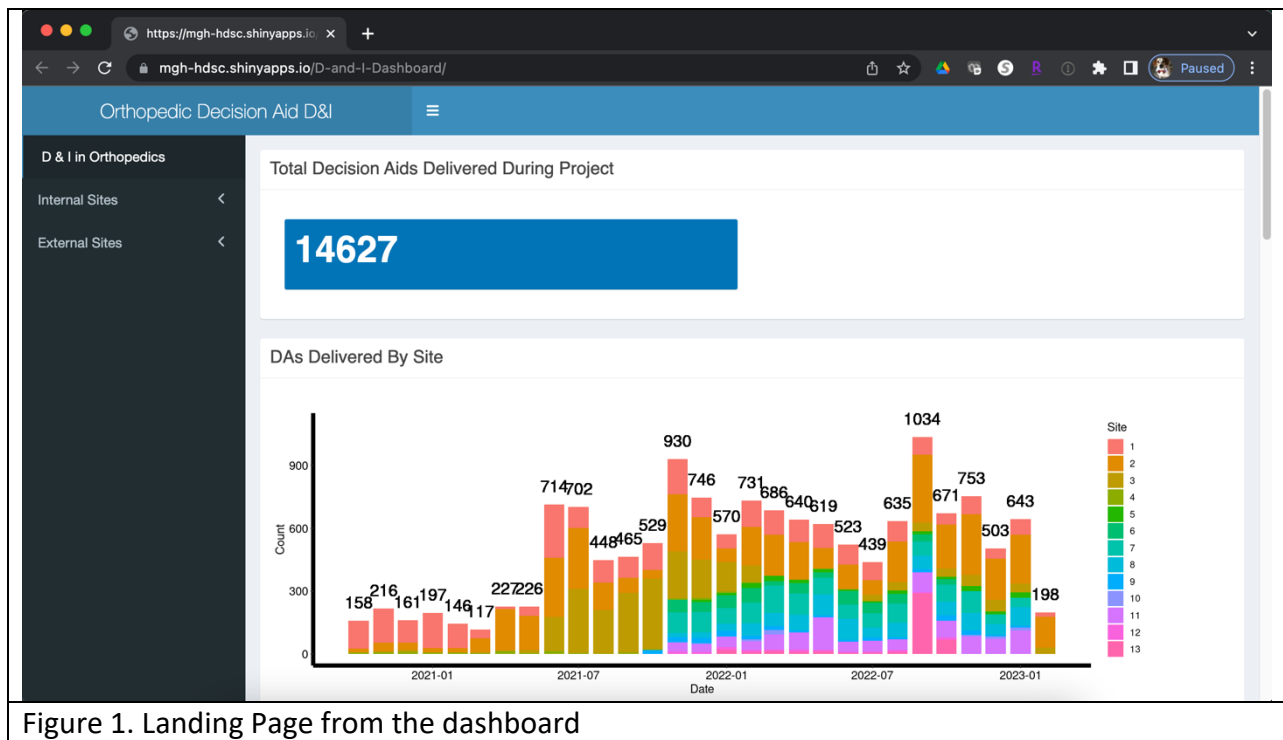
Resource # 6.2: Data Reporting Codebook and Data Collection Spreadsheet

### Resource #6.1: Data Dashboard feedback description

We believe it’s critical to be able to feedback data to sites in a timely manner to ensure they feel their time spent collecting data was worthwhile. To do this, we chose to create a Shiny App Dashboard using the data we asked sites to collect. On this page, we show some screenshots of the dashboard, then describe the data used to create the dashboard, and finally introduce the code responsible for the dashboard for the interested viewer.

The final dashboard is available at: <https://mgh-hdsc.shinyapps.io/D-and-I-Dashboard/>. The dashboard is organized into a landing page (D&I in Orthopedics) and two Sub-pages (Internal Sites and External Sites). Each Sub-page has their own sub-pages for each internal/external site.

The landing page identifies the total decision aid (DA)s delivered during the project, DAs delivered by site, Cumulative DAs delivered, Patient Characteristics by site, and DA characteristics by site.



Internal and External site sub-pages consist of two graphics—one identifying the DA titles prescribed over time, and the other identifying the DA prescribers and the number of DAs they’ve prescribed.

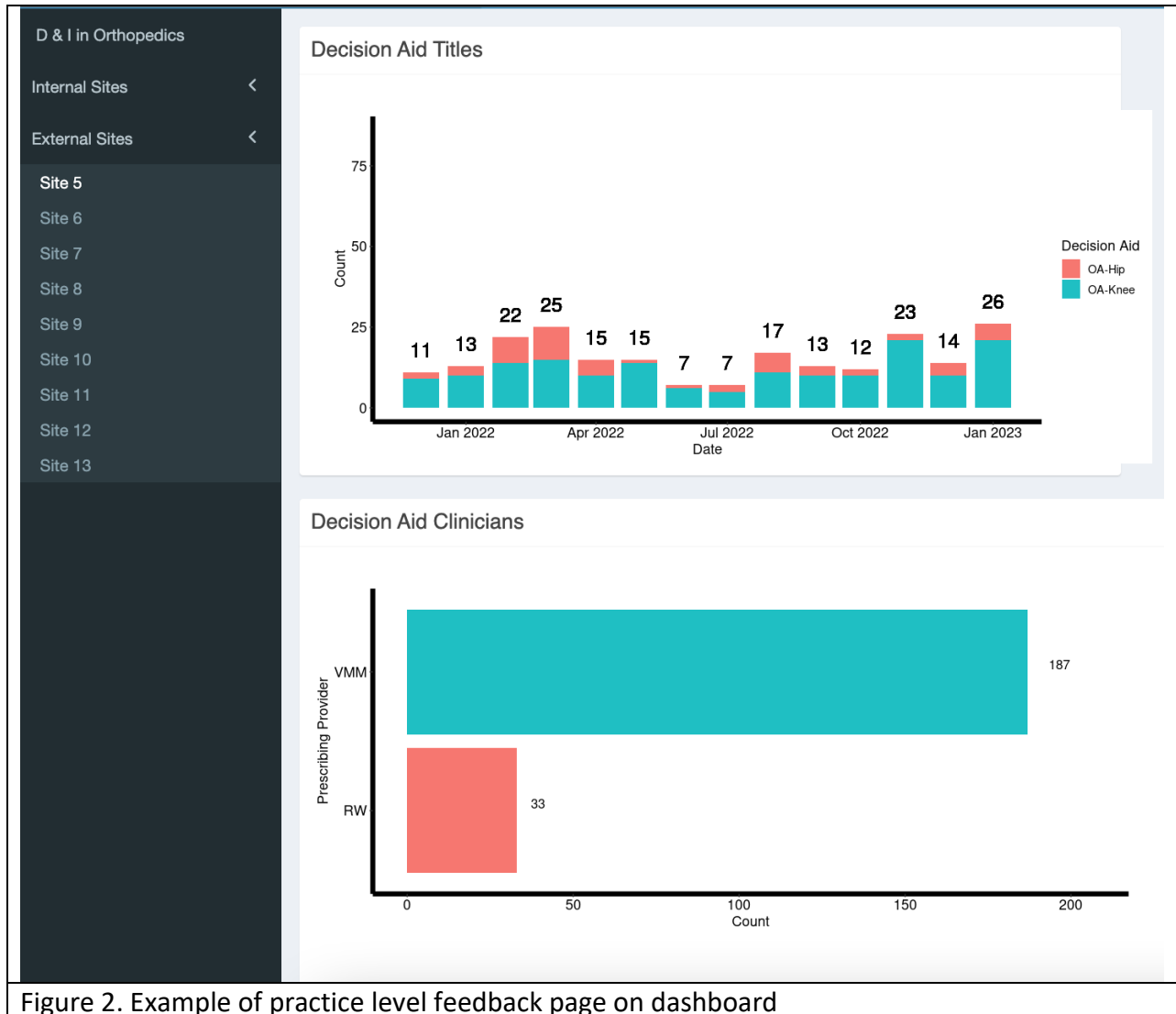


Figure 2. Example of practice level feedback page on dashboard

## Format of data

All sites were asked to collect data on the outcomes listed in the table below. Data was systematically cleaned in R prior to being input into the Shiny app.

Variable	Variable name	Format; notes
Site number	Recoded.site	Integer; our sites ranged from 1-13
Date	Month.year	Date; we chose to date each date as the first of the month in which the data was collected
DA Name	newDACode	Factor; options were "OA-Hip", "OA-Knee", "Spine-HD", "Spine-SS"
Clinician visited	Prescribing_Provider	Character string; initials of the clinician visited for anonymity
Clinician handing out DA	Da.rx.name	Character string; initials of the clinician handing out the DA for anonymity
DA timing	Timing	Factor; options were "Before", "During", or "After"
DA language	DALanguage	Factor; options varied
Gender	Gender	Factor; options were "Female", "Male", or "Unknown"
Age	Age	Integer
Race	Race	Factor; options varied
Ethnicity	ethnicityDSC	Factor; options were "Hispanic", "Non-Hispanic", or "Unknown"
Delivery method	Method	Factor; options were "Electronic", "Kiosk", or "Paper"
Open status	DA_Status	Factor; options were "Sent" or "Opened"

## Data dashboard

If you are interested in creating a version of your own, please contact Dr. Valentine at [kvalentine2@mgh.harvard.edu](mailto:kvalentine2@mgh.harvard.edu)

To use this Shiny app file, we suggested users download R and the free version of RStudio (<https://www.r-project.org/>) (<https://posit.co/downloads/>) and become familiar with shiny applications (<https://shiny.rstudio.com/>) first. If data is not in the correct format when entering into the application, the application will not populate the website appropriately or may crash. Also be aware that for tables, the number of factors is key to being able to create such tables and creators should take careful note of matrix references in the code.

## Resource # 6.2: Data Reporting Codebook and Spreadsheet

Here we provide an example of how sites in our project were asked to collect and report on data during the SDM Learning Collaborative. This is just one example, and many features of our project may or may not be applicable to other projects. Where possible, we have added notes as to why we made specific choices for our project so that others can consider how they wish to approach these considerations. These monthly reports were the main outcome assessed for the learning collaborative and they were used to benchmark progress, identify barriers, and highlight successes.

Each month, every practice was required to report on the following information for each decision aid delivered: a unique patient study ID, the month and year of decision aid delivery (NOTE: due to our IRB protocol that prohibited the sharing of Personal Health Information sites did NOT report on the exact date of delivery, but instead just the month and year; for other projects, this may not be the case), the topic and language of the decision aid, the ID of the clinician the patient has a visit scheduled with, and the ordering provider ID. Additional data helped understand the patients being reached: patient sex, patient age at DA delivery, patient race, patient ethnicity, date of the visit with clinician, the delivery mode (electronic or paper), the practice ID, and if the patient viewed at least some of the decision aid (yes, no, unknown). (NOTE: not all sites were able to collect patient data such as race/ethnicity, and as our focus was on a pragmatic trial, these elements in grey in the table below were considered optional to report on; other projects may wish to consider making these required elements, or may wish to remove them entirely from consideration.)

Please note that the main outcome of the study was the number of decision aids delivered. Therefore, if a patient was prescribed more than one decision aid they were allotted more than one row in the data, as can be seen below with patient ID 1003. (NOTE: this was the outcome for our study, however, if projects instead were interested in the number of patients reached by the DA, they could instead add multiple DA title columns—e.g. hip, knee, herniated disc, spinal stenosis—to replace the single column we had for DA title, and then data collectors could simply indicate if any of the 4 DAs were provided with 0/1.)

**Table 1: Sample spreadsheet to collect data on decision aid delivery**

Site ID	Patient ID	Month/Year of DA Delivery	Topic	Clinician ID	DA delivered by	Timing of Delivery	DA Language	Pt Sex	Pt Age	Pt Race	Pt Ethnicity	DA Mode	Practice ID	Pt view DA
11	1001	Oct-21	Knee	AB	JF	before	English	F	60	n/a	n/a	Paper	Main St	n/a
11	1002	Oct-21	Hip	AB	JF	before	English	F	53	n/a	n/a	Paper	Main St	n/a
11	1003	Oct-21	Knee	DF	DF	during	English	M	71	n/a	n/a	Online	West Ave	yes