STUDY PROCEDURES
Subjects will undergo 4 weeks of home weight monitoring, followed by a final semi-structured exit interview. Caregivers and hepatology providers will also undergo a semi-structured exit interview after each subject participation, if available and willing to participate.

Four Weeks of Home Weight Monitoring
Upon subject enrollment, the responsible MGH hepatology provider will be established. Availability of that provider (or back-up) during the study period will be confirmed. Subjects will be provided with a Nokia Body digital scale at no cost and asked to weigh themselves daily. Through the secured mechanism described below, digital scale weights would be transmitted to the Smartphone via an internet connection, then to vendor website etc.

Inpatient Visit
Once the subject is enrolled, the study staff will immediately perform several steps to establish the above system (Figure 1):

1. Download Health Mate app to the subject’s Smartphone.
2. Sign in to Health Mate and pair application with Nokia Body scale.
3. Provide education on how to use the Nokia Body scale and the importance of weight data to ascites management.
4. Trial run of weighing patient and transmitting data.
5. Signing patient up to acquire additional data for xyz site.

Each of these steps are described in detail below. This visit will require 30-60 minutes. If subjects prefer, study staff can perform all the application set-up tasks.

Step 1: Download Health Mate app to the subject’s Smartphone.
The subject, with assistance from study staff, will download the Health Mate application to the subject’s Smartphone. The app is free and available for both iOS and Android.

Step 2: Sign in to Health Mate and pair application with Nokia Body scale.
With assistance from study staff, the subject will open the Health Mate application and click on “Get Started”. They will then click on “Scales” as the product they would like to set up. They will then click on “Body” as the type of scale. Then they will follow the clear instructions on the phone to turn on the scale and pair the application with the Nokia Body scale.

Step 3: Provide education on how to use the Nokia Body scale and the importance of weight data to ascites management.
Subjects will be instructed on how to weigh themselves daily, and look at this information in the Health Mate application on their phone. Subjects will take a daily morning weight without wearing bulky clothes or shoes (remain consistent). Study staff will provide subjects with an MGH Gastroenterology phone number to call with study questions, including issues using the scale and applications. Finally, subjects will receive a brief education on why weight monitoring is useful in ascites management. Specifically, study staff will explain that an increase in weight is a sign that there is an increase in ascites volume. So, an increase in weight, might mean that the ascites treatment is not working and needs to be changed. In fact, rising weight is one of the earliest predictors of ascites getting worse.

Step 4: Trial run of weighing patient and seeing if weight data is available in EPIC.
Finally, the study staff will instruct the patient to stand on the scale and confirm that the weight data is available in EPIC. If there is an error in the system, study staff will troubleshoot the problem.

Step 5: Signing patient up for xyz site in order for them to use portal to enter data at home.
In the event of no weight alert, providers will receive a report for every enrolled subject each Monday. The report will contain their discharge weight and their weights in the last week.

Providers response to weight alerts will be monitored mainly via chart review. The nature of the response (including but not limited to phone call, office visit, ER referral, paracentesis referral, medication change, or dietary counseling) will be documented. If after 2 business days, if there is no EPIC documentation of a provider response, the provider will be email queried about whether or not they responded to the weight alert. If there is no response from the provider, there will be no further communications to the provider about that weight alert.

In addition, we will ask for the scales to be returned via the following process:

- Patients’ will receive envelopes with instruction, etc

Exit Interviews
At the end of the 4-week study period, subjects, caregivers, and hepatology providers will be asked for an exit interview. The purpose of these exit interviews is to evaluate facilitators and barriers of the intervention, explore root causes of outpatient ascites management failures, and explore desired features of the ultimate digital tool (to be designed in the future).

The exit interview will be a 15-minute semi-structured interview. Both physician and non-physician investigators will perform the semi-structured interviews. The full interview script for each type of exit interview (subject, caregiver, and hepatology provider) is included in this IRB submission as an attachment. The topics of this interview include facilitators and barriers of the intervention, exploring root causes of outpatient ascites management failures, and exploring desired features of the ultimate digital tool.

The interview will be semi-structured in that there are pre-determined questions, but the interviewer will be permitted to ask additional related questions or ask clarifying questions beyond this script.

Telephone and in-person interviews will be audio recorded utilizing ABC system. Subjects, caregivers, and hepatologists will all be notified when they are being recorded, and this will be a component of informed consent.

Chart Review
The following information will be extracted from the chart after obtaining informed consent:

- Age
- Gender
- Etiology of cirrhosis
- Diagnoses during current admission
- MELD
- Serum creatinine
- Diuretic doses
- Information about provider response to weight alerts (notes, medication changes, etc)

Data Storage and Usage
Data obtained from chart review, and other collected variables will be logged in an Excel spreadsheet saved on a secure server, and accessed only on password-protected and encrypted computers. The audio files will remain saved on the audio recording device in a locked cabinet on Warren 10 until they are transcribed. These audio files will be transcribed by a professional service. The original audio files will be stored in a locked cabinet on Warren 10. These will be destroyed within 5 years of the date they were recorded.

Data analysis
The chart review, weight transmissions and data from xyz site will be downloaded and merged together via study ID. The study coordinators will have their own logins and passwords to these sites.

URLs to websites:
Vendor contacts to websites: