

Overview: The Digital Activity Improvement Measure (D-AIM) is a smart-phone app with which people can self-track the occurrence of a limited set of important activities and see how their activities change over time and with planned interventions. The D-AIM opens to a screen with 12 buttons (and another set of buttons one swipe away). The default button labels are categories of important adult activities like “Time with Family” identified by earlier research but the button size, locations, and labels are user-configurable. Tapping a button records the date, time, and button identity. Press and hold allows editing of the data stream for that button. A swipe allows review of a chronological list of all entries. Another swipe provides a weekly graph of the data. Both are scrollable through all older data. One may also show just the entries in for one event, either as a list or a graphic. (D-AIM screens are shown below.)

There is a capability for the D-AIM to link to a website that will keep the data, allow 24/7 access, facilitate management of multiple end-user accounts, and ultimately may provide more graphical analyses. To maintain user privacy, the web-connection is enabled for designated sets of users by the installation of D-AIM host software on an organization’s server.

Core strengths of the D-AIM system:

- 1) Fast, easy, convenient, precise data collection: open the app and tap a button.
- 2) Simple operation: open the app and tap a button; taps and swipes like other apps.
- 3) Simple, intuitive data display: swipe for a list of all data entries, swipe again for a graphic of the previous week’s data.
- 4) Simple, intuitive weekly graphic shows when things happened over last 7 days at a glance; swipe for older data, week by week.
- 5) Simple, intuitive data edit and drill-down: press and hold to edit, swipe for list of entries for that event, swipe again for weekly graphic display of that event.
- 6) User empowerment: End users retain complete control over the data, so the system can only be deployed in service of the goals of the end users; as a corollary, users have incentive for rigorous honesty in recording.
- 7) User empowerment: the buttons are easily re-labelled so that users track the events of interest, importance and utility to them.
- 8) User empowerment: goals may be set and users can track goal attainment.
- 9) Expandable: data export to websites or spreadsheets is possible.
- 10) Expandable: multiple end-user accounts can be managed through a simple website interface.

Business model: the D-AIM will be supplied as an underlying data collection and analysis engine that can be branded for a specific organization, population, or use. Organizations may connect with users’ data through the internet or intranet by installing D-AIM software on a server. Additional customization and features such as geotagging data entries, photo or video capture, more sophisticated data analyses, and so forth may be negotiated with the D-AIM team.

General use: D-AIM serves as a general tracking tool for events of interest that happen repeatedly that the user wants to track or manage, and that are not regularly scheduled or more easily recorded in some other way. For example, a busy manager who has difficulty regularly getting out from behind the desk might decide to use the D-AIM to record when she takes time to just walk around her Department and greet workers. After a few weeks, when the habit of “managing by walking around” is well established, she may choose something else to record, such as insights about how the business works, unreported exceptions to quality standards, personal feelings, medication usage, late arrival at meetings, unplanned disruptions to her planned activities, and so forth. Similarly, a life coach may deploy the D-AIM with clients to address a variety of issues.



Quality Improvement: The D-AIM is a perfect generic tool for organizations, businesses, and individuals who want to use a data-driven quality improvement cycle in the context of nimble, agile measurement and analysis. It is not designed for one problem, but rather for a series of reoccurring events. It is not positioned as competition for automated data collection systems, but as a rapid and easily deployable supplement, ideal for unpredictable events. As soon as a user recognizes a problem or opportunity as likely to repeat, a D-AIM button can be configured for fast and easy recording. The D-AIM data then facilitate the recognition of temporal patterns in recorded events and the assessment of progress in solutions. The data then may lead to either successful local (and perhaps low-cost) solutions, or additional investment in more expensive data collection or solutions.

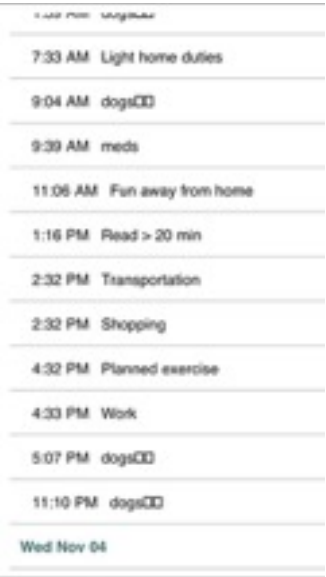
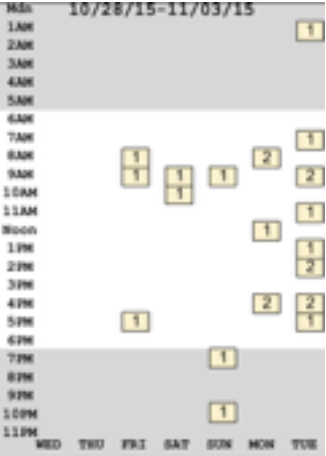
Clinical environments: In addition to its use in a health care quality improvement, the D-AIM is a fundamental tool to help build client empowerment and goal attainment. It allows therapy clients to set quantitative goals for specified activities (e.g., “5 communications with friends next week”) and track their progress toward goal attainment and greater independence while providing themselves and their clinicians with a detailed record of activity. Clients can select three to five goals to work on for a few weeks, and will experience success, setbacks, persistence, and choices in tactics and strategies, but the data allow the reality of these events and outcomes to become the material for growth and clinician coaching. If a web-enabled version is used, then the client data are available 24/7. Conversations can be focused upon successes and empowerment; as needed clients move on to other goals and issues, but because the client controls data collection, the focus must remain upon empowerment and client goals.

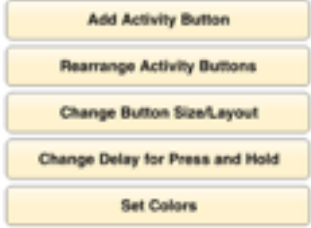
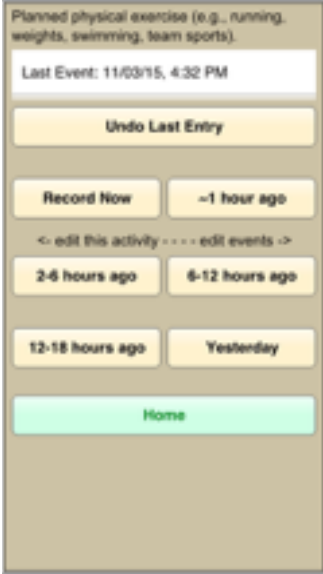
Note that the D-AIM is not designed to address any particular clinical population or disability, but rather it will help any users of smart phones that wish to use data to improve. As such it will help people in many different situations. For example, persons who have chronic pain and who have completed all medical treatment for pain management may use the D-AIM in the context of psychological treatment. Agencies serving persons with developmental disabilities such as cerebral palsy may use the D-AIM to more successfully help clients transition to independent living. Community mental health agencies may offer the D-AIM to specific clients to more successfully address daily living issues. Vocational agencies that seek to facilitate client employment may help clients use the D-AIM to track job-productive activities. While the D-

AIM will not solve every problem for every person, it is a critical basic tool that counselors and agencies can use to help clients empower themselves in an enormous range of situations.

D-AIM screens:

	<p>1. The "HOME" screen shows the default buttons that a person would see upon opening the D-AIM. Tap a button to record its action.</p> <p>Swipe down on "HOME" to get to "HOME2"</p> <p>Swipe left to see "History" (#3 screen, below) or swipe right to see "Preferences" (#9 screen).</p> <p>Touch and hold a button to get to the "Edit" screen (#3, below).</p>
	<p>2. The "HOME2" screen is a secondary action recording screen for events of lower frequency or importance.</p>

 <p>7:33 AM Light home duties</p> <p>9:04 AM dogs</p> <p>9:39 AM meds</p> <p>11:06 AM Fun away from home</p> <p>1:16 PM Read > 20 min</p> <p>2:32 PM Transportation</p> <p>2:32 PM Shopping</p> <p>4:32 PM Planned exercise</p> <p>4:33 PM Work</p> <p>5:07 PM dogs</p> <p>11:10 PM dogs</p> <p>Wed Nov 04</p>	<p>Swiping the "HOME" screen gives the "HISTORY" screen.</p> <p>3.The "HISTORY" screen scrolls to show all data, beginning with the most recent. A sample list is shown, with the dates and times of all recorded events..</p>
 <p>10/28/15-11/03/15</p> <p>1AM 1</p> <p>2AM</p> <p>3AM</p> <p>4AM</p> <p>5AM</p> <p>6AM</p> <p>7AM 1</p> <p>8AM 1 1 1 2</p> <p>9AM 1 1 2</p> <p>10AM 1</p> <p>11AM 1</p> <p>Noon 1</p> <p>1PM 1 1</p> <p>2PM 2</p> <p>3PM 2</p> <p>4PM 1 2</p> <p>5PM 1</p> <p>6PM 1</p> <p>7PM 1</p> <p>8PM</p> <p>9PM 1</p> <p>10PM</p> <p>11PM</p> <p>WED THU FRI SAT SUN MON TUE</p>	<p>4. Swiping sideways on the History screen accesses the "Weekly Graphic" screen, which shows time of day on the vertical axis and days of the week on the horizontal axis, ending with today. Each block shows the number of events recorded in that block for that hour.</p> <p>Pressing any block goes to the detail of that block's data; for example, pressing the "1" at 1 AM on Tuesday would reveal a late walk with the dog.</p>

	<p>A swipe to the right from the Home screens brings up Preferences, which allow the user to customize the D-AIM functions.</p>
	<p>3. Touch and hold a button on the Home to reach the "EDIT" screen, which lists all events of that type recorded so far and allows the user to correct an error, tap to add a new entry, or return to the "Home" screen. Swiping to the left shows the data list for the event being edited, and another swipe shows the Weekly Graphic for that event alone.</p>

<div>Self action button layout:</div> <div><div>3 x 4</div><div>2 x 3</div><div>Cancel</div></div>	
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