

## **Appendix to Care Management Dosage**

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Table Appendix 1 lists the specifics of dosage and their definitions in greater detail than the paper. The Care Management Tracking database enabled us to track amount, frequency, and duration of services through a time tracking tool embedded in the visit documentation form. Breadth was culled from descriptions of the type of services, reasons for encounter, and through chart review by the primary author. For example, if a patient was seen for diabetes follow-up (reason for encounter), services provided may have included education and guideline adherence (recorded on structured form) as well as community advocacy (free-text: e.g. “arranged meals on wheels” or on a structured form). Communication may have been recorded in the database (calls to specialists or PCPs) or gathered through use of an electronic messaging system (Message Log).

Figure Appendix 1a-c demonstrates the general approach for each of the 5 clusters or patterns of care. Each of the 5, by definition, starts with the first care management contact. This contact is frequently the most lengthy, and in brief intense and active disease treatment, is primarily direct face-to-face minutes. For ongoing maintenance and resource aid, it is mixed indirect (away from the patient) and direct, and for active coordination, it is mostly indirect minutes. These coordinating services, such as contacting companies for free medications or services, contacting specialists, or connecting to community help, are an important part of the care managers’ role. For brief intense and resource aid, few, if any, further contacts are made after the initial bolus. The initial services for brief intense are multiple (average breadth 3.4 of 6), and some patients do receive a follow-up call. For resource aid, little else is done. Although we don’t generally recommend only resource aid – it was not a successful strategy – brief intense does have a patient population of interest. Newly diagnosed patients or those needing education and improved self-management skills who are ready to change seem to benefit most from this dose of care management, and show ongoing improvement over time. Patients with complex needs tend to do less well.

In active coordination, follow-up lasts at least until 3 months (the bolus of time seen in the average minutes) and tapers off by the end of the year. The breadth of services performed for these patients is the highest of any group – 4.4 out of 6. In general, these are patients with a combination of social, mental health, and physical needs who need extensive outside help. The social needs component is frequently very high on the list, and many resources are pulled in to help the patients.

For active disease treatment, these patients frequently have complex diabetes and need extensive medication and other changes over a period of time. The time is mostly spent educating and motivating patients, with many small adjustments according to guidelines. Follow-up occurs frequently over the first 6 months and again at 9-12 months. Patients with complex mental health and cognitive issues are also followed in this way.

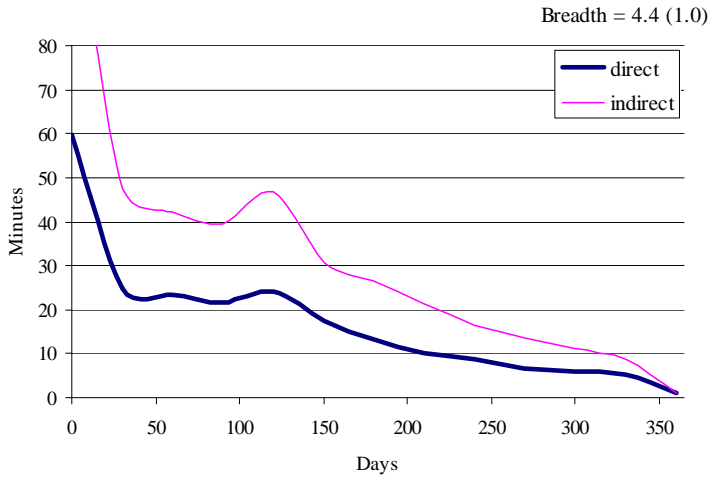
For ongoing maintenance, there is frequently a minor but persistent issue which requires monitoring by the care manager. For instance, a patient with depression who is initially suicidal will receive ongoing PHQ-9 testing even if they are reasonably well-controlled. Patients with cardiovascular disease or whose self-management skills are moderate will also receive follow-up in this manner. The breadth of services are limited and frequently involve ongoing motivation or guideline adherence.

Table Appendix 1. Dosage, process and outcomes measures

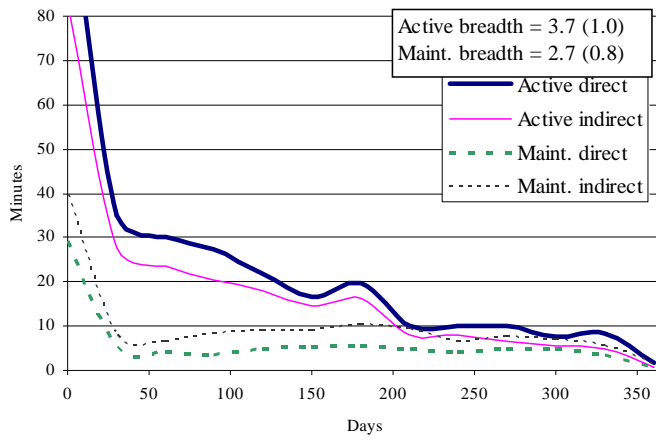
<b>Dosage component</b>	<b>Definition</b>
<b>Amount</b>	minutes spent by team on CM
Direct amount	... interacting with the patient
Face to face	... in person (visits)
Phone calls	... on the phone
Indirect amount	... away from the patient (coordinating)
<b>Frequency</b>	# of services delivered per patient
<b>Duration</b>	days of continuous follow-up
<b>Breadth</b>	# of different types of services used
General education	Education of patient/caregivers ... for general problem solving or general disease self-management.
Guideline adherence	Checking and performing certain tasks to ensure compliance with guidelines.
Motivational	Providing feedback and support to patient/caregiver.
Community advocacy	Linking patients to resources in the local or larger community.
Communication / collaboration	Discussing plan of care with the primary care team, including the physician, patient, nurses, etc.
Coordinating activities	Helping make appointments, reading history, filling out and having paperwork signed.
<b>Overall dosage</b>	Uncorrelated sum of all CM components.

# Figure Appendix 1. Patterns of care

## Figure 2a. Active coordination



## Figure 2b. Active disease treatment and Ongoing Maintenance



## Figure 2c. Brief Intense and Resource Aid

