

COLLABORATION IN HOME HEALTH

Research Insights from HCI, academia



Goal of EHRs & Clinical shared care

Access & share detailed, complete health records within and between care teams in order to manage the safe and effective delivery of complex and knowledge-intensive healthcare.

Lack of Clinical meaning derivation

The data entry and data extraction **doesn't** attribute/represent **compounded clinical concepts** to derive clinical meanings

Dispersed clinical information

Much of the **fine-grained clinical information** on which future care depends is still **captured into paper records** or within **isolated** clinical databases.

Lack of ease of information consumption

EHR systems **do not support** the creation of and access to health records for a wide range of **information requirement contexts**

Why EHR information forms a basis to achieve meaningful and strong collaboration?

A critical reliance upon **comprehensive patient records** for the treatment decision-making for a given episode

The requirement to deliver **evidence-based** and quality-assured care

It is the most reliable **wealth of information** that maintains strong **patient context**

/ MOBILE FOR COLLABORATION/CLINICAL SHARED CARE

Single Use mHealth



Focuses on a single purpose for a single user, typically consumer initiated:

- Smart phones & wearable tech products that support the user to record data which may be communicated to others
- Consumer driven - wellness, diet & fitness

Integrated mHealth



Links apps & devices with the formal healthcare systems:

- Mobile Technology linking patients & healthcare providers
- Tailored to multiple end users: consumers, physicians & administrators

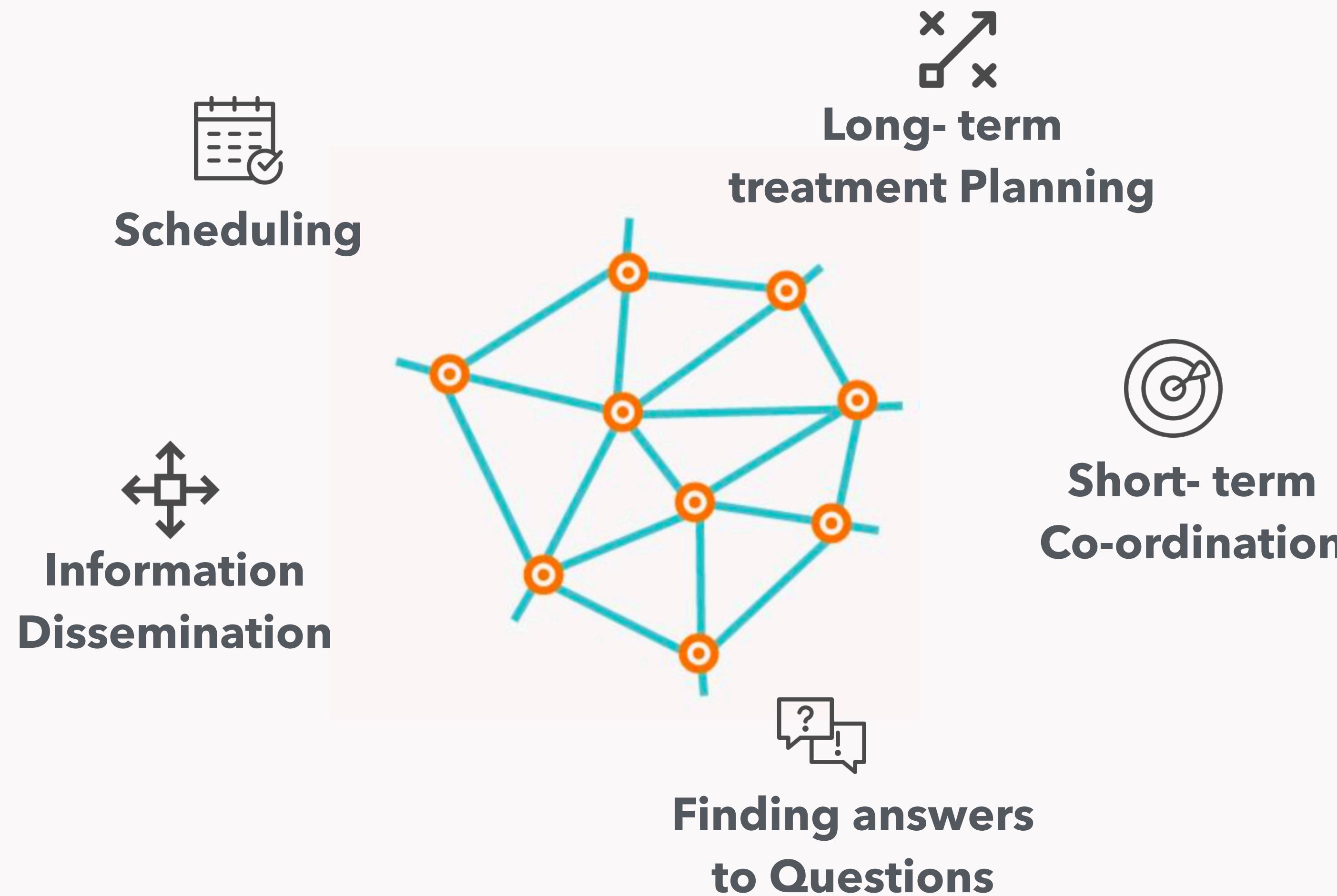
Complex mHealth



Leverages advanced integrated analytics for decision support:

- Support decisions based on analysis of complex data generated through various apps/connected to other systems
- Focus on optimal management of a specific disease

5 Areas where Collaboration is needed



/ COLLABORATION - Scheduling

Problem Statement: It is difficult for home care workers to coordinate their schedules so that unwanted conflicts are avoided, and so that desired meetings are possible.

- Except home health Aides, all other disciplines schedule their own visits
- No formal procedure for sharing schedules, and generally only accessible to the individual worker.
- Different factors affecting the schedules for different disciplines: 1. Variations in caseloads; 2. Unpredictability of travel;
- Some disciplines' schedules are fairly regular than others'. E.g.: Nurse visiting every morning to give insulin.
- Home worker can determine the schedules of other disciplines by asking the patient. However, the patient as information holder is not always a successful strategy.

Collaboration Need:

- One wants to avoid conflict either by knowing other's schedule or by informing their schedules to others
- Another is finding opportunities for face-to-face collaboration.

/ COLLABORATION - Information Dissemination

Problem Statement: It is difficult for home care workers to disseminate information to other members of the treatment team.

"There have been times, I felt where it would be nice if there was somewhere we could put a note where everyone could see it"

- Voicemail and paging are the most commonly used medium or even pass handwritten notes to the office staffs combination of techniques to disseminate information

On difficulties of reaching members of other disciplines:

"They are out in the district the same hours we are and sometimes you can't get a hold of them. We don't know their hours, they don't know our hours, so in most cases it's very difficult."

- One of the common ways of handling information dissemination problems in SDH is through the use of a designated third party. The client care coordinator commonly serves in this role.

Collaboration Need:

- Some information that should be disseminated may not lend itself to inclusion in an EHR due to its informal nature. For example, one type of information that home care workers regularly need to share with others is information about problems with patients' pets or family members.
- A tool for disseminating information in a way that is separate from the legal record would prove valuable.

/ COLLABORATION - Finding answers to Questions

Problem Statement: It is difficult for home care workers to get questions answered by other group members in a timely fashion.

"It is hard to call a nurse from a patient's home and discuss another patient over the phone, so sometimes we have to make a point of coming back in here (to the office) so that we can call a nurse."

- Typical delays in communications: The recipient does not receive the question until they check their voice mail/messages, and the questioner does not get the response until they in turn check their voice mail/messages. Similar delays are introduced with handwritten notes and messages passed through third parties.
- E-mail or instant messaging systems are potential solutions. However, even though these solutions make it easier to send a message to a person, they do not address the problem of getting a reply in a timely fashion.
- Another issue with these potential solutions is preserving the message context.

Collaboration Need:

- Associating message context closely with the patient's for sender and recipient and make communication happen in a timely fashion

/ COLLABORATION - Short Term Co-ordination

Problem Statement: It is difficult for home care workers to coordinate treatments with each other so that the treatments are complementary.

"A lot of it would be about cardio-respiratory patients where we are both in to see the patient a fair amount. They are in there fairly regularly giving them their meds or monitoring their blood pressure or things like that. We are in there maybe less frequently, but they will be monitoring maybe the status of their chest and they let us know if things have changed and whether we need to see the patient today, not Thursday, that type of thing."

- **Loosely coupled coordination:** is beneficial to know the recently given treatment(discipline: therapy, nursing) by team members.
- A visualization technique to show recent visits by time and discipline, for example, would provide the home care worker with enough information to decide when their own treatment would be most optimal.
- **Tightly coupled co-ordination:** is where a higher level of awareness may be necessary to guarantee that specific team members know the patient's status and the actions that have been performed by others.
- Most disciplines were able to cite specific situations in which they must use tightly coupled coordination with other disciplines. For example, OT often works closely with nursing on pressure relief and positioning issues.

Collaboration Need:

- Awareness of treatments and the changes brought about by treatments as they make the goals and actions of all home care team members interdependent.
- Guarantee that the actions taken by all home care workers work together toward outcomes that are beneficial to the patient.

/ COLLABORATION - Long term Planning

Problem Statement: It is difficult for home care workers to formulate shared treatment goals and care plans for particular patients.

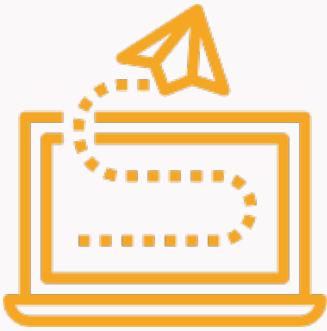
"It would be very useful to know what's going on (with other disciplines) because we sort of look at the whole picture and everything impacts on what we do with this person."

- After the initial treatment team has worked with a patient for a period of time, the common plan and common goals often need revision. The joint process of goal and plan formulation and revision does not often occur due to scheduling difficulties
- Home care treatment teams do not meet regularly and none of the methods of communication available in home care (as previously discussed) are conducive to two-way group communication, comprehensive care plans and team goals
- Home care workers are prone to focus on individual discipline-specific goals as time passes instead of on shared treatment team goals.

Collaboration Need:

- Each team member to develop specific plans and goals that work toward common group goals.
- Information access and regular revisions of team members' treatment activities and the outcomes of those activities.

/ DESIGN APPROACH TO COLLABORATION NEEDS



What has happened?

- 📋 Modern computerised health information systems limit the ability of users to extract clinical details in a form that can be communicated to other such systems
- 📋 Few products can import clinical information received from external systems. However, these products support the clinical shared care process are condition-specific. Ex: management of diabetes or for antenatal care.
- 📋 Most national health services have adopted a suite of messages to support purchaser-provider communications, organisation and service administration, billing, and to communicate healthcare interventions for public health purposes.



What is suggested?

- 💡 Interoperability and faithful communication underpinning the specification of an EHR to preserve the contexts, in addition to data quality and clinical service governance.
- 💡 New technologies sometimes create new work for busy clinicians—In particular, one goal should be to try to quantify and minimize additional work burdens on providers from use of new IT.
- 💡 Given the nature of the communication (e.g. notifications, updates, and cautions) and the variable availability of home care workers, asynchronous communication facilities such as email and instant messaging seem like a natural fit to this setting. However, it is important that communication facilities are integrated with the information in the EHR.
- 💡 Many providers will view electronic medical records and decision support systems as a burden in case of absence of way to convey/express the clinical information and providers may find ways to circumvent intended use (for example by typing very short notes that convey less information than their hand-written notes)

/ COLLABORATION SOLUTIONS TO KNOW

<https://www.carecenta.com>

- Visual Scheduling with Smart Coordination
- Automated Case Discharge and Schedule Status Changes
- Authorization & Notifications

<https://wheniwork.com/features>

- Staff Scheduling: Shift Trades & Drops allows employees to drop or trade shifts using When I Work
- Instant group text msg: TeamTxt expands on our 2-way text message service, which is included in all of our plans.
- Human Resource Management: Time-off, availability, other availability factors

Users: Any field staff that requires scheduling, communication

<https://www.simplepractice.com/therapy-notes>

- Add a new client and send intakes immediately. Email notifications to patients once intake is done.
- Scheduling: An intuitive, professional way for clients to request appointments online. Appointment reminders: a simpler way to reduce no-shows. Sync with iCal, Google Calendar and Outlook.
- Notes: Fully customize your notes and forms with our simple, intuitive template builder. Create multiple choice questions, checkboxes, dropdown menu options, and short or long answer boxes.

Users: Patients, Back office, Therapists

/ COLLABORATION SOLUTIONS TO KNOW

<https://www.clearcareonline.com/mobile-app>

- Access Info. on the Go: Upcoming schedules, client contact info and assessments, and shift/tasks details
- GPS Clock in/ clock out: Clock in and out of a shift with a single tap, right from their mobile device
- Update Task/Add Notes: Provide change in condition and include general comments right in the app.

Users: Primarily Home Health Aides

<https://www.alayacare.com/care-worker-mobile-application>

Alaya Shift Offers

- Distribute schedules and shift offers directly to care providers via the [AlayaCare Mobile App](#) and via email
- Schedulers and coordinators can find the most suitable replacement employee in minutes
- Right information for clinician to decide: Service information; Scheduling Information; Service Location
- Off-line capabilities to prevent lost data entry

Users: Co-ordinator, Scheduler, Nurses

<https://www.mendfamily.com/>

- Member Engagement/Assessment
- Intelligent Reminders & Messaging
- Patient-Generated Health Data
- Improvement Activities: Integration of patient coaching practices between visits;
- Seamless Integrations with all many EHRs and healthcare providers/suppliers' systems

Users: Physicians, hospital staff, Co-ordinator, Scheduler, Nurse, Home health staff

/ Resources:

- https://www.mckinsey.com/~/media/mckinsey/dotcom/client_service/Healthcare%20Systems%20and%20Services/Health%20International/HI11_56%20HealthCareBeyondMed_R6.ashx
- https://www.researchgate.net/publication/226959625_Electronic_Health_Records
- <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/life-sciences-health-care/deloitte-uk-connected-health.pdf>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4029126/>
- <http://hci.usask.ca/publications/2001/homecare.pdf>