

Institute for Healthcare Policy and Innovation

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Executive Summary

This project - a collaborative partnership between the Institute of Healthcare Policy and Innovation (IHPI) and Team 4D aimed to examine the current method of data collection and data dissemination the team uses for the National Poll on Healthy Aging (NPHA) report. A team of 7-10 people within IHPI work collaboratively on the report. The team is lead by the Director of the Institute. Though the team is highly collaborative, the report generation process could overcome some inefficiencies. Team 4D was brought in to help examine the process and propose solutions moving forward to further enhance the situation.

Team 4D met with majority of the 7-10 person NPHA team and utilized observations and interviews to gather data from them. The team applied a user centred method - contextual inquiry to dive deeper in the problem and uncover findings, findings that were qualitative in nature. The team analysed the data and found higher level connections.

The report lays out the research methodology used to analyse the problem space, findings from the analysis and recommendations based on the findings. Key highlights from the analysis are listed below:

1. Hierarchy in position dictates the main mode of communication.
2. Even though value of different modes of communication are recognized, they aren't being used efficiently for appropriate tasks.
3. Need for standardized operating procedures for smooth workflow.
4. Current process does not allow real-time collaboration.

Background research

Overview: Institute for Healthcare Policy and Innovation (IHPI) is an organization consisted of researchers and clinicians studying issues related to health, health care, and health policy. Conducted by IHPI, the National Poll on Healthy Aging (NPHA) is a recurring, nationally representative household survey of U.S. adults ages 50-80. By disseminating information to the

public, health providers, policymakers on a regular time basis, the team advocates on health-related issues affecting the elderly in America (IHPI, 2018).

Institute of Healthcare Policy and Research

Acknowledging the existing state of the healthcare system, there is an overwhelming demand for health services researchers to evaluate and inform healthcare policy. The Institute for healthcare policy and innovation (IHPI) is a U-M based institute of scholars and researchers assessing the healthcare system and how it can be improved. Healthcare reformation is shaping the public domain in several ways, and IHPI is employing new investigations and existing university-based research platforms to measure this impact of healthcare reform on the public. Their researchers collaborate across teams focussed on issues of quality, safety, equity and affordability of healthcare services. These multidisciplinary teams of investigators have been converging to produce an authentic knowledge base of the ever-evolving and shifting healthcare landscape. The institute in the year 2017-2018 got 259 new awards with 45 awards of \$ 1 Million plus. The institute got \$133.8 M in new awards. \$880 M is already utilized in active sponsored research. HSR research expenditures of 168 M at the institute represent 10% of U-M total research expenditures. Healthcare is one of the most wicked problems of our times, posing significant barriers toward the nation's health with problems like inequitable access to lifesaving health services, unequal community resources, escalating costs requiring tough choices and threatening the economic well-being of families. Moreover, the landscape of healthcare is ever evolving with shifts in demographics, advancing technology, growing costs, and the political climate which threatens to leave specific communities more vulnerable than ever. At the same time, these advances support an optimistic vision for the future. With innovations and ideas brewing at every corner of the university, IHPI intends to build and promote platforms for cross-collaboration that poke at challenges that face us in healthcare. IHPI takes the wicked problem of healthcare as an inspiration to innovate and meet its responsibility towards the public. Bringing imagination, creativity, and vision to the research practice is a common motivation kindling the community's researchers and scholars. The institute also endeavours to strategically target areas of significance with broader collaboration to deliver the most meaningful impact. One of the fundamental drivers in IHPI's mission is to deliver actionable insights and policy recommendations. IHPI's missions aim to turn focus to the issues of values in healthcare and build a platform for the scholars from fields of medicine, economics, and policy at

U of M to connect and build relationships with industry professionals to advocate bringing higher value to the healthcare system. The institute comprises of more than 550 faculty. The researchers and members are part of organizations, public and private research organizations and U-M schools that the institute partners with. All members are united under institute's common purpose for strengthening healthcare innovation, overcoming disparities, making health care more affordable and creating policy impact. IHPI's U-M partners include the medical school, School of Public Health, School of Nursing, College of Engineering, College of Pharmacy, Ford school of Public Policy, Institute for Social Research, Ross School of Business, School of Dentistry, Law School, College of Literature, Science and the Arts, School of Information, School of Kinesiology, School of Social Work, And School of Art & Design.⁶ IHPI also partners with local institutions like The Centre for Healthcare Research & Transformation, VA Ann Arbor Healthcare System Centre for Clinical Management Research, Altarum Institute, Arbor Research Collaborative for Health and Mathematica Policy Research.

National Poll on Healthy Aging

The healthy aging initiative is one of IHPI's flagship projects and the focus of this report. It aims to generate substantial knowledge about the values and needs of older adults to promote higher quality, lower costs, and enhanced responsiveness of care provided for them. The survey taps into the perspectives of the population of Americans 50 years of age and older and their caregivers to inform providers, policymakers and the public on their issues related to the health and policy.⁵ The institute's initiative aims to promote healthy aging and generate new areas of discovery to benefit the target demographic.

Problem Background

The initial problem that IHPI approached the team with was about the analyzing current data collection and dissemination practices. Although they have explored the idea of developing a dashboard, but they are not sure and have no ways to determine if a dashboard is the most effective way of reaching a wider audience with their data. 4D's mission was to examine the process by which they currently collect and disseminate data, and also help them to determine if a dashboard which they have explored is the most effective way of reaching a wider audience with their data.

Dissemination needs to consider information, sources, audiences and channels. Practitioners and decision makers can be more effectively contacted through the social media, issue or policy briefings and so on. By using the idea of generalization, scientific discoveries are more likely to be applied to public health institutions and decision-making bodies.

For audience, there are two main kinds of audience of NPHA: the relevant researchers and faculties and the specific 50-80 year-old people. There are some difficulties in disseminating data via Internet to these two kinds of audience. As for the elderly people, researchers need to face a very complex social phenomenon in the investigation of the Internet use of middle-aged and elderly people. First of all, the elderly themselves are not a homogeneous group. Physically and psychologically, they have a variety of conditions. These conditions are reflected in the acceptance and use of the Internet. Secondly, researchers can not simply attribute their use of the Internet or attitudes to traditional variables such as socioeconomic status and educational level. It requires us to examine the daily lives of this group in the Internet society more carefully, and further question the behavioral representation behind it. As for the relevant researchers and faculties, this may be based on the history and developing of academic dissemination. After World War II, scientific and technological progress led to a sharp increase in the number of papers and doubled the number of journals. Academic journals flourished, and there were numerous journal categories in various fields. The number of papers also increased in a large number, which opened the peer review system. There are three kinds of peer review: single, double and public. The level of peer review is one of the preconditions and important guarantees for the quality of journals, which determines the influence of journals, and gradually forms the evaluation methods of paper citation and journal impact factors. These evaluation methods are now widely accepted by academia, so the researchers and faculties prefer to read papers published in formal scientific journals rather than on the website of a non-profit organization. However, internet has great potential and can become a really efficient and useful way for academic dissemination. Currently the process of the transformation from published journals to internet is just a part of the developing of academic dissemination, so the researchers and faculties will eventually accept this mode of academic dissemination and it will become the mainstream.

For channel, there are many kinds of channels for academic dissemination, which are generally divided into formal channels and informal ways. Informal means such as letters, e-mail, conference conversations, virtual colleges, academic community exchanges and academic network storage platforms. Formal means include academic conference reports, which in most cases refer to the dissemination of documents, such as a literature of books, papers, collections, research reports, and so on. All kinds of media can be summarized to one thing, which is rational communication.

Because our clients, IHPI and NPHA have chosen the internet to disseminate their data, so we only discuss the rationality of choosing publishing carriers, which is the internet here. The carrier of papers should be considered in terms of influence, and it is equally important for researchers to publish them quickly. In today's society, scientific and technological achievements are changing rapidly, and the Internet form matching with productivity has penetrated into every aspect of social life. New modes of sharing economy, such as electronic commerce and digital banks, emerge one after another. Internet plus has become a national strategy. In order to innovate the frontier academic field, the choice of new carriers for publishing papers should adhere to this idea. It is the general trend to publish papers quickly on the Internet. So internet can be a really efficient and useful way for academic dissemination if being used properly.

Besides this initial problem, through our interviews and analysis, we have found that they also need some improvement in their job roles' hand-off process, workflow and communication methods. Right now the team members use email at the most of the time. The value of email as well as face to face communication is recognized yet, but is not used for appropriate tasks. The hierarchy dictates the method of their communication and blocks the change of communication method in some extent.

Here are some common solutions of inefficient communications. The first method to improve internal communication in a firm is to establish and improve a standardized company meeting system, so that the company's various instructions, plans and information can be uploaded and transmitted, coordinate with each other, and coordinate the implementation of all indicators around the completion of the enterprise. Through monthly meetings, weekly meetings, dispatching meetings, symposiums, pre-class and post-class meetings and other forms, information can be quickly and effectively transmitted, so that everyone can proceed in an

original manner according to the plan with clear direction and goal, improve work efficiency and ensure the goal completion. The second is to launch "Rationalization Suggestion" activities for all employees of the company, and set up a Rationalization Suggestion Box and a Rationalization Suggestion Award. Whether it is technical transformation, cost control, administrative management and other fields, it is in full swing. From the development of enterprises to providing advice, or building up the spirit of ownership, and achieving good results, great gains have been made from all aspects of the economy. Third, the establishment of internal journals, which can be monthly issued, and sent to all levels of the company to effectively summarize the company's production and operation dynamics, integration of company information and unification of all staff thinking.

In these ways the hierarchy will no longer block the transformation of communication method and the whole communication process will become more efficient.

Competitive Analysis

The competitive analysis focused on one of the main problems of the project: workflow streamline. In this section, the strengths and constraints of example workflows will be introduced as of how they influence the effectiveness of a workflow. More specifically, strategies and tools developed by organizations to help streamline the workflow will be discussed.

Strategy 1: A better involvement of indirect work roles

When there are multiple work roles on a project, involving indirect work roles when necessary is as important as clearly divide the work and determine the person who has the main responsibility. In the process of a report generation which involves data analysts, researchers and graphic designers, the workflow can be non-linear to achieve best accuracy and representation throughout the report visualization.

Take an example of a workgroup of the National Forum on Education Statistics, the group identified its data analysts as the group that were most familiar with the data and best qualified to evaluate data integrity, therefore the data staff had responsibility for determining data meaning and ensuring data accuracy. With the core responsibility defined, although a data analyst was not

intensively required for the entire report generation process, he or she would constantly be involved in the project as to being notified of whatever changes the project had and engaging in quality reviews in all visualization activities (National Forum on Education Statistics, 2016). In this way data experts can not only provide a thorough explanation for the data being presented, they will be able to become familiar with the whole document generation process and offer helpful insights in data collection and data visualization.

To generalize the example, any roles on a project team that is not directly communicating with each other may have gaps or possibilities in between, which can be considered more about. Since the report generation process introduced by the Education Statistics group highly resembles that of the IHPI project, the finding can be very useful as a reminder for all team members and a method for the project director to plan on.

Strategy 2: Checklists and templates

As for specific tools developed for a better effectiveness of the workflow, checklists and templates have been widely adopted as a good way to provide a set of standards, eliminate gaps, trace possible changes and keep everybody on the same page.

A good example of benefiting from checklists and templates is the [American Academy of Neurology] (<https://www.aan.com/>) (AAN) American group's project on improving the referral process among care providers and neurologists. The workgroup developed multiple types of checklists and templates that provide critical information and reminders for care providers and neurologists to communicate better in the general referral process.

With a problem in its current workflow, the workgroup found it hard to complete the patient hand-off process between two practitioners effectively. The information of the patient often experienced a paucity where medical history and diagnostic tests performed were a few steps behind the transfer of the individual, which led to possible loss of important resources, delayed intervention and more rounds of communication between specialists (Kreimer, S., 2014).

In order to target the pain points and solve the problem, the AAN group developed a set of toolkits to help them streamline the process, which included two types of help materials. The first

package is a set of checklists for practitioners to check if the information provided to the next person is sufficient enough, and to prevent ambiguity and errors. The second one consists of templates created for communication and early preparation between various groups involved in the referral process. To be more specific, advice and conclusions from the first person in the central workflow, will be recorded on the templates and read over with the checklists before being handed to the next individual. In this way, the giver of the information gets more clued in as to what the receiver side may be looking for, and the receiver can have an anticipation on what to prepare. This quick sprint can happen between primary care and specialty/ subspecialty practices, primary care and hospitalist practices, and a few more different types of consults. Up to now, several types of toolkits have been developed to tap the needs of different role combinations, which made the process more clearly directed and efficient. By implementing new toolkits in the workflow, the practitioners were able to ensure the transmission of highly complete and original information in a predictable amount of time.

This example shed light on the IHPI project as to developing a quick method to streamline the workflow. In this example, the initial toolkit was developed by a three-person workgroup with the neurological conditions (the materials handed from the first work role) most commonly referred by primary care physicians (the second work role) (Kreimer, S., 2014), which suggests an efficient way to build from existing materials without many staff to work on. Since the IHPI report generation team usually has less than ten people working simultaneously, this method can be a good one to think about if the main issue is around gaps of hand-offs.

Strategy 3: Data-Sharing software

While checklists and templates provide a way to organize hand-off materials among different work roles at the end of each step, data-sharing software is used by some workgroups to enable real-time editing and discussion.

For example, due to an increase in time spent on regulatory paperwork, a group of researchers in the Loyola University Medical Center developed a software tool with its database derived from an existing act that is being updated once in a while. The software provides a way for physicians, technologists and managers to share data in a secure environment, and quickly adjust to changes of the act (Wagner, R. H. et al., 2017). The software has a tabbed-notebook design for its

interface, with each tab corresponding to a stage of the process. By using the interface like a notebook, a user will be able to enter different features such as “Schedule” and “Verify Patient Data”(Wagner, R. H. et al., 2017). There is also has a repository where all users can share documents in (Wagner, R. H. et al., 2017). After being put into use, the database has been used very frequently by different work roles and the overall efficiency was improved.

While IHPI currently does not have an online space for data-sharing although multiple versions of a document can go back and forth between different work roles, a software that provides secured information sharing can be a potential advice to improve its workflow. However, it is worth noticing that if multiple people are editing a document simultaneously in the shared space, there might be a conflict appear after committing all the changes.

Strategy 4: Faculty development workshops and training sessions

Workshops and training sessions designed specifically for the purpose of communicating a common objective and a way of doing things efficiently have been conducted as well. According to the report of a project carried out by the Advanced Technological Education centers (ATE), the faculty development workshops were rated as the most successful dissemination strategy, in that the activity provides opportunities for focused attention and continuous interest from recipients (Owens, T., 2001). Although faculty researchers here were categorized as external resources by ATE, in IHPI project the faculty members have been closely involved in report generation projects and were encouraged to be the lead of the team, and therefore an important role in its workflow besides being part of the dissemination process.

In another example project of the National Dissemination Center for Career and Technical Education (NDCCTE), diverse modes have been used to improve the effectiveness of communication both internally and externally. Channels including electronic, print, and person-to-person were being compared in terms of their pros and cons. The project mentioned that, in order to achieve high interactiveness in the dissemination, training sessions and conference presentations were carried out to get feedback from professionals regarding data materials and educational products (Owens, T., 2001). Regular meetings with the National Advisory Board and other community colleges have been conducted as well to enable the efficient exchange of opinions toward the dissemination (Owens, T., 2001). This example

emphasized that in-person communication can be very useful in keeping the focused attention of the audience, exchanging opinions and solving the questions as soon as they arise. While IHPI is having a great amount of communication online and new faculty collaborators are joining in the work process regularly, developing quick workshops can be a helpful option to think about.

Project Brief

Initial problem

The National Poll on Healthy Aging is a nationally representative household poll of U.S. adults between ages 50-80. The principal aim of the project was to enable timely dissemination of information to the public, healthcare providers, policymakers and advocates on issues related to health, healthcare and health policy affecting older Americans. The project aimed to examine the current method of collection and dissemination of data for this specific demographic. The team at IHPI was interested in exploring the concept of a dashboard and determining if that is the most efficient way to go forward.

Project goal

The goal of this project is to help IHPI streamline their process for generating and editing their older adults reports. Our team planned to do this by using the contextual inquiry methodology. More specifically, our team conducted interviews and observed members of the IHPI team in their workplace about their role in the report generation process. Through the analysis of this data, we hoped to uncover areas in IHPI's current report process that could be improved to increase efficiency for the majority, if not all team members.

Methodological Overview

To understand the team's process of data collection and dissemination for the report it was extremely crucial to understand the specific work function of each member on the team and how their workflow developed collectively in a collaborative manner. Since our problem space dealt with the quality and effectiveness of work it was essential that we employed appropriate

qualitative methods. We used a user-centered approach - the contextual inquiry method to understand the perspectives of all the stakeholders in the problem and have a panoramic vision on the issue. As the name states, contextual inquiry is a method applied to obtain context-rich data where the users are embedded. We utilized both interviews and observations as part of the process. A crucial part of this process was to observe users in their natural work environment, therefore we conducted the interviews with the team members at their respective offices/workstations. The interviews were 75-90 minutes long and were guided by an interview protocol. The interview protocol (Figure 20) comprised of questions to understand the member's overall role and then specific questions to their job role with regards to the problem statement. The interviews had at least two team members present with one being the interviewer and the other taking notes. The team conducted 6 such interviews. The team came together to write and interpret notes that were eventually utilized for analysis. The interviewees consisted of the Director, Production Manager, Assistant Director, Faculty Collaborator, Data analyst, and the Multimedia Designer. The interviews were supported with prior background research into the client. Due to time constraints, it would not have been possible to interview the entire IHPI team. The team chose to interview 6 members to strategically cover all areas and jobs roles that went into preparing the report. For analysis, the notes were converted into individual post-it affinity notes with the team accumulating over 400 such notes from across all interviews (Figure 17 & 18). The team then organized the notes into bigger groups to form hierarchies and uncover higher level findings. This brought out common themes and consequential emerging problems from the data set, which are further outlined in the next section.

Findings

Based on the examination of the data our team collected and analyzed, we discovered some interesting pieces of information. While some findings highlighted potential areas of improvement in the current report generation process, interviews and observations also uncovered an overwhelming sense of trust and respect that the individuals working on the National Poll on Healthy Aging have for each other and the work that they do.

Finding One: Proactive planning with regards to deadlines, scope of the reports, and specified hierarchy of order reduces retroactive confusion among team members.

Evidence:

i. We found that team members desire to have access to an updated timeline of the report process as well as upcoming deadlines that they need to meet throughout the entire report process. This lack of access to an updated timeline has lead to confusion in expectations and deadlines, which has lead to delays in work and an increase in back and forth communication in order to solve these confusions. One individual stated “I would like to have all timelines and any updated deadlines in one place to easily reference”, while another concurred with “one obvious place for referencing the agendas and timelines would be helpful”.

ii. Through our analysis, we found that individuals on the team feel that another area with potential for improvement is there being a lack of designating one point of contact for each member with can lead to accountability issues and confusion. This lack of a designated point of contact on the team has lead of communication breakdowns, duplication of communication, and confusion regarding report decisions.

Finding Two: Team members enjoy email communication due to its notifications and sequential nature of updates, however, individuals find it hard to track decisions and changes made to the report over email.

Evidence:

i. All team members stated that email was used for the majority of the team’s communication, including making decisions and sending report versions back and forth. Since the report generation is a very iterative process that takes many rounds of edits and decisions being made throughout, multiple team members shared that they felt this process was “inefficient”. Team members also stated that they feel they “can not track the decision making process” over email and when decisions do get made, they can “get lost” or “be hard to follow” via email.

ii. While email is the main for of communication for the team and the reports, face-to-face communication is preferred for decision making. Team members value the face-to-face meetings that occur throughout the report generation process because they allow for easier, immediate, and clear back and forth communication while making decisions.

Finding Three: The team sees value in documenting decisions and communication that is immediate, easy to access, and all in one place since team members work on many different tasks simultaneously.

Evidence:

i. Multiple members of the team send out emails containing both previews of topics or questions that are going to be discussed during on upcoming meeting, or a follow-up email recapping what was discussed in the meeting, along with any decisions made.

Team members liked these preview or follow-up emails because it help them track decisions that were made and topics that were discussed.

ii. Team members expressed wanting easier access to report documents and for all of these files to be organized in one place. Having report documents easily accessible at all times is also an important feature that team members expressed would make their roles more efficient.

Finding Four: Hierarchy of position is dictating the main modes of communication for the team, yet they have the least involvement in day to day activities.

Evidence:

i. Due to the respect and admiration that was extremely evident that the entire team has for the individual in charge, they have assimilated to this individual's preferred mode of communication, even though it is not the most efficient for all job roles. The personal beliefs of the individual in charge regarding different types of communication and editing platforms is a strong influence on what the rest of the team uses. Emails for this individual are preferred because they are only notified about things they "need to see" and they "enjoy the notifications of the email". When it comes to the report editing platform used, the team uses Microsoft Word because the team leader believes "Microsoft Word is a better product" and they are "a creature of habit".

ii. Even though the team leader is dictating the main mode of communication (email), and the report generation platform (Microsoft Word), they seem to have the least amount of

day to day interactions with the project. For example, this individual is also in charge of many other projects and holds many other prestigious job roles for the University of Michigan. Due to these factors, this individual only has time to “comment and send the report back via email”. They also prefer email for communication because they “only want to be notified about things [they] need to see”.

Finding Five: Due to a lack of standardized organization and archiving methods for the reports, team members have created their own individual methods.

Evidence:

i. Multiple team members create their own personal timelines based off of the team one that is sent out, which includes personal deadlines, not just team based ones. Individuals have also started using their different project management softwares to help themselves stay organized and archive work. Team members expressed having one organizations method would be preferred and would help reduce the back and forth communication.

Finding Six: Since every report has one new member, the faculty collaborator, there is a need for more standardized report generation procedures to ensure a quick and smooth transition and workflow for these members.

Evidence:

i. There is a need for standard yet flexible expectations for these changing members of the team. It was stated by multiple in team members that as of recently, the faculty collaborators have been made the lead of each report. While this is empowering for them, the continual changes in the lead of the reports creates inconsistencies in expectations. This is true both for the faculty collaborator and the rest of the team if the lead of each report is not a constant or a member of the team. Faculty collaborators expressed enjoying the additional support received in report drafting. The audience for these reports is very different than the audience these faculty collaborators are used to writing for. Due to this, the additional support and guidance in this area is extremely beneficial to them.

Finding Seven: The current editing process does not allow for real-time digital collaboration which causes confusion for team members.

Evidence:

- i. Current editing practices do not allow for adequate real-time editing updates which leads to confusion in the individual editing process and duplication of work. Members of the team expressed that not knowing “who is working on which version of the report at any given time”, which leads to confusion and possible duplication of work if two people are working on the same version. Knowing where other members are will help individuals “plan accordingly with [their] edits”.
- ii. It was also found that the editing process both for individuals and as team may be taking longer than necessary because there is currently no way for team members to know or reference which editing changes were incorporated from the previous report document into the new one. This causes members to have to “[re]read the whole [document] again every time” a new version is sent. Other members discussed having to pull up the previous version of the report and placing it side by side with the newest version just to be able to see which edits were incorporated and which were not. Having a way to track the changes and edits from one version of the report to the next would help eliminate this extra work for team members during the report editing process.

Finding Eight: Different report file formats and naming techniques across team members increases time and workload on individual and team based editing tasks.

Evidence:

- i. Due to the lack of standardized file naming practices, there is an increase in the number of report versions with little to no indication of which is the latest version of the report to edit. This leads to an increase in the number of versions of each report, which causes team members to “feel like there are a million file versions” of each report, as well as overwhelmed. During the interviews, team members had very different takes on whether there was a file naming policy for the different versions of the reports. Some members admitted to “not always changing the file version name”, while some expressed there being “no strict file labeling of versions”, to others communicating that everyone is supposed to save their version with “<name-date>”. This lack of standardized file naming practices and confusion of whether or not one exists causes more work for individuals.

ii. The lack of standardized file naming practices also causes issues in report access and retrieval. Team members expressed it being hard to identify and therefore retrieve which version of the report is the latest one that they should be editing. This process of identification and retrieval was said to take “too much time” for team members.

iii. The requirement of different file formats for individual tasks causes inefficiencies in team communication. Multiple members on the team need to use different software tools for their portion of the report generation, which causes inconveniences in communication by increasing individual task time by having to constantly change file formats. Although the use of multiple file formats is necessary for some parts of the report generation process, the transferring of the information into shareable formats and vice versa becomes an added task and time commitment for individuals.

Recommendations

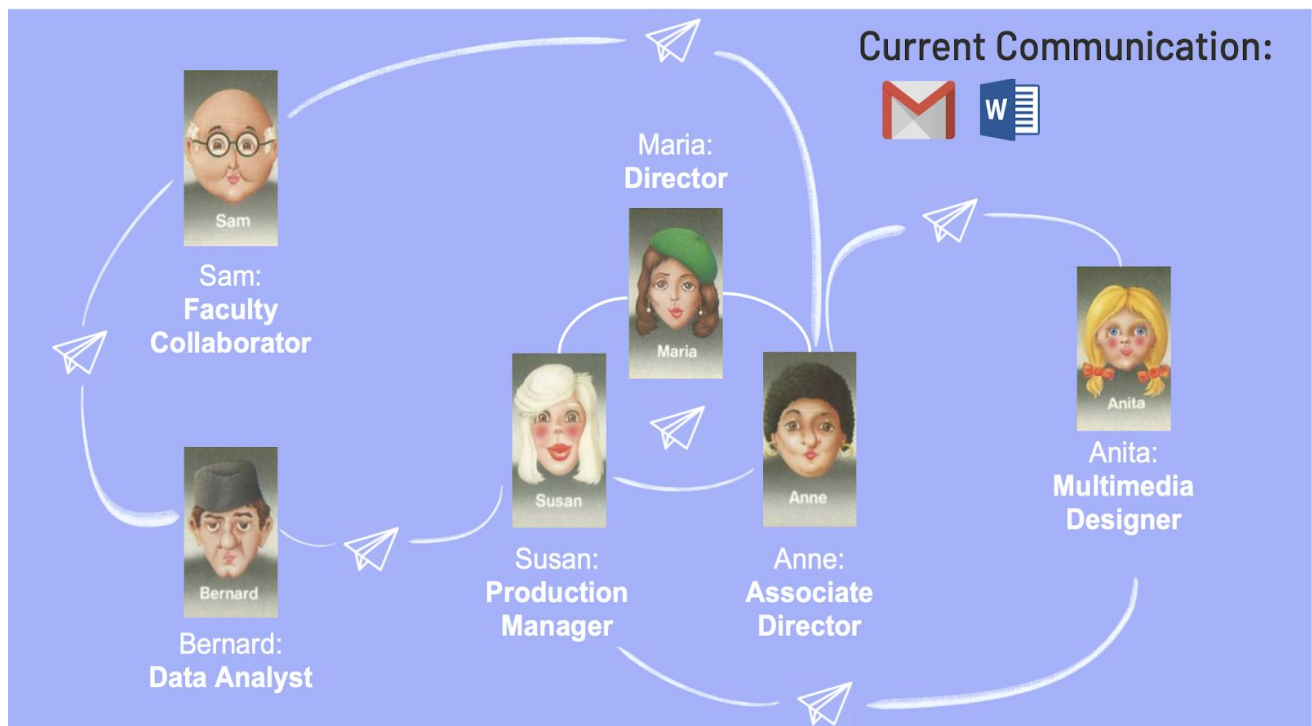


Figure1: Current modes of communication among team members (images taken from Guess Who game)

Primary Recommendations

Based on all of our findings, we came up with two main solution recommendations. The first one is more realistic which we think would be easier for team members to adopt in a short time because Microsoft Word is the method they are currently using, and the second one is more ideal since it can incorporate more powerful features.

We also recommend the ideal solution but we still provide them with a realistic one, because we find that Microsoft word is currently being well adopted by all the team members, however it has a crucial problem that it does not allow real-time collaboration. Therefore starting from this point, we found a quick solution for the team, which is a web-plugin provided by Microsoft starting from 2016. So it's another shortcoming of this realistic solution because every team member needs update their microsoft word to the new version, at least not older than the 2016.

Case study on word web plug in

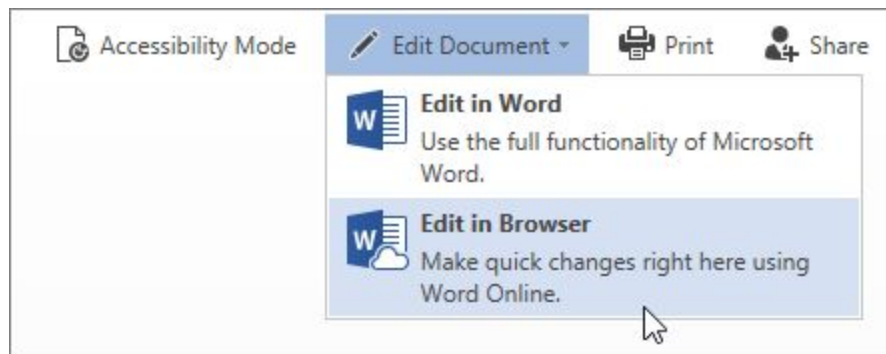


Figure2: Original edit document option in Microsoft Word (Microsoft.com, 2018).

Word online is a word file solution based on Microsoft's own cloud. It is part of the Microsoft office online set and can be visited without subscription. Register for free Microsoft account. Word's online interface is similar to the Microsoft version of Microsoft Word, so it is very easy to be understood.

Word is saved into online folder. Word online also covers the desktop version of Microsoft Word, and you can click on the button to switch to the desktop application. All changes in one version

can be synced to another version automatically. But you can't work with web applications or desktop applications. Word online still has real time cooperation and allows multiple people to process the same document at the same time. This feature works with word online, windows and Mac desktop applications and mobile applications. IOS and Android apps are free and you can check the running documentation.



Figure3: Real-time collaboration feature in Microsoft Word (Microsoft.com, 2018).

Word online is the best choice to use word documents (actually using desktop applications) because it maintains the original format of word documents. It is a good solution to the display or editor. That is, there are some drawbacks. You must run on the network. Cannot edit local file. Not all desktop word versions are available. All basic knowledge is there, but you should not use a more expensive tool. For example, you do not have titles, table of contents, creation, applications, or high-grade review tools. If these contents appear in the document, you can see them. You can't use them. Word Online also has a few restrictions on printing, and you might not be able to fine-tune your prints as you would in the desktop app.

Currently the team members only edit their word document offline and can only track the changes via email. However, the web plugin allows them to edit it online and see other's presence and the changes they are making.

Case study on Slack

While recommending Microsoft Word web-plugin to enable real-time co-authoring for the workgroup in a relative short period of time, we suggest a solution that may help streamline the process in a more comprehensive way.

As a collaboration hub, Slack is a cloud-based software that supports real-time communication in various forms, and enables easy file operations by integrating other softwares as plug-ins (Slack website: <https://slack.com/>).

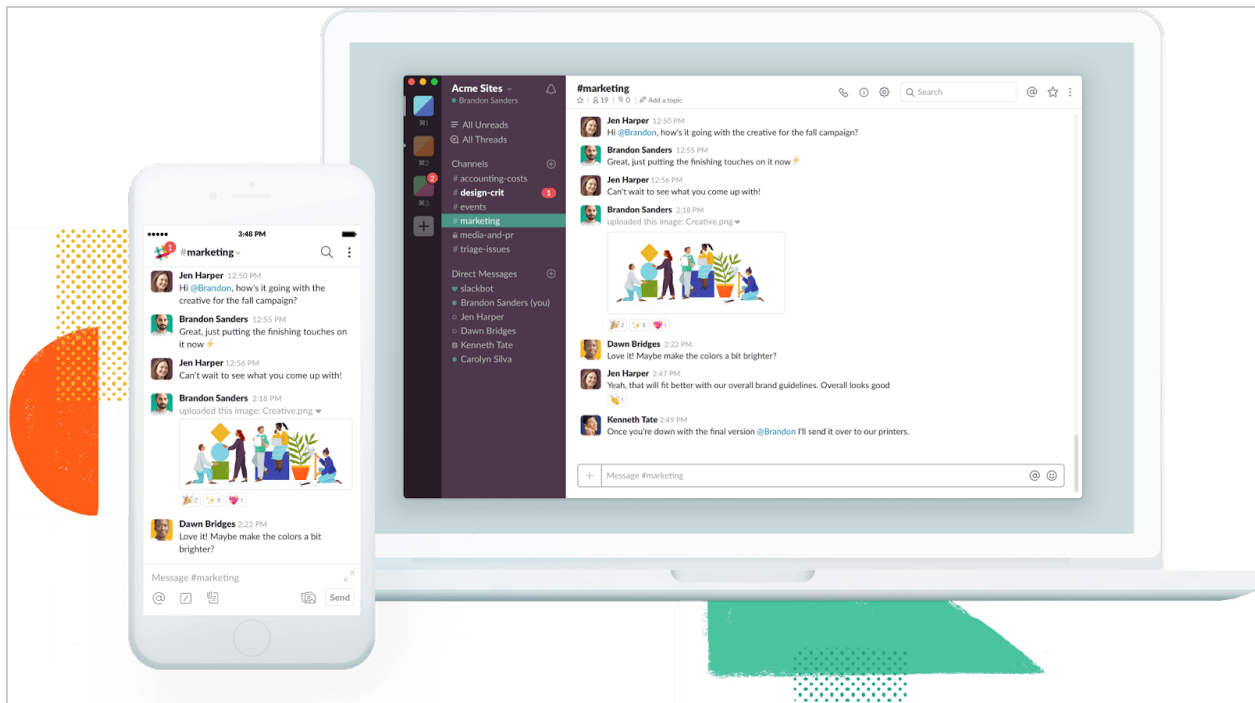


Figure4. Slack on mobile and desktop. (Slack.com, 2018)

There are four main features of Slack that make it a effective real-time collaboration tool:

Feature 2: It can be used across multiple platforms including mobile, tablet and desktop (Figure4).

Slack can be used across multiple platforms. Once logged in, Slack automatically syncs history from all the other devices and keeps everything on the same page. Communication-wise Slack allows messages, audio and video calls. Screen-sharing is also available so that work can be shared remotely. As for file-sharing, files can be drag-and-dropped easily into Slack, and then be tracked by time, format, etc. Also it is very powerful in terms of integrating other tools as plug-ins, such as Google drive, Dropbox, GitHub, and much more.

Feature 3: It organizes conversations in a practical and effective way by using channels. Both public and private channels can be created easily under the project umbrella. (Figure5)

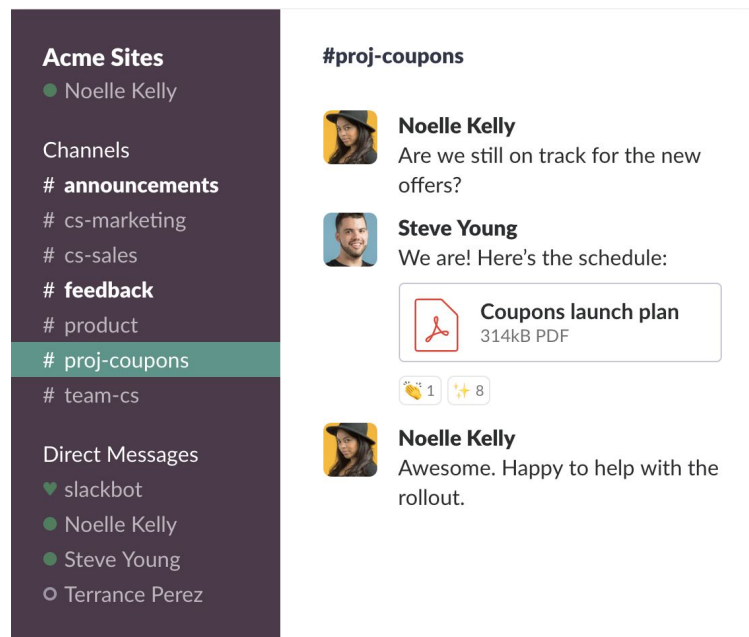


Figure5. Different channels under a workplace (“Acme Sites”). (Slack.com, 2018.)

By using email, a person can get a Slack account and join different workplaces (e.g. IHPI). Channels are created in one workplace to further divvy up the team for any reason relevant to work organization (e.g. the core team, front-end, first meeting). Conversations happen separately in each channel and if being shared, can be checked and searched at any time. This allows clear purpose-oriented team and file organization. For IHPI team, since collaboration can happen between different faculty collaborators and the team at the same time, different channels can be a possible solution to organizing work in a clear fashion.

Feature 3: It enables quick search of historical messages and files (Figure6). Multiple filters are provided to make the search more accurate and efficient.

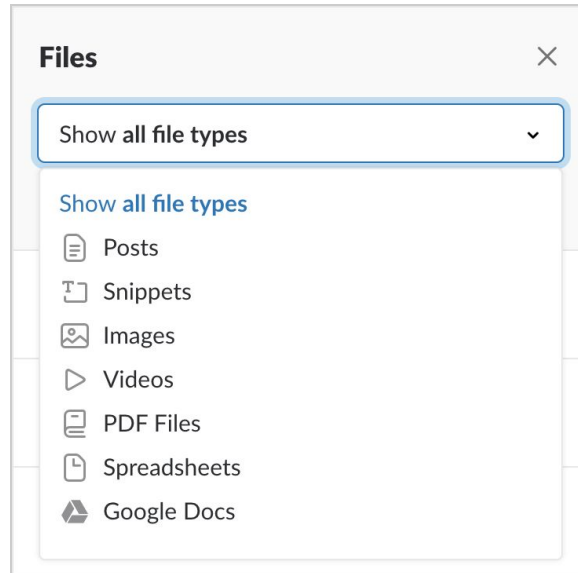


Figure6. Search Files in Slack with filters.

Files can be shared in Slack easily either by uploaded or drag-and-dropped. Each file will be displayed with its name, time, formate, creator, annotation, and platform (from slack or other third-party services such as GoogleDrive or Dropbox) (Figure7). Each file in a channel can be tracked by time, format and multiple other filters. Search in all channel is also available.

Feature 5: It integrates other apps and services so that various online workplaces can have a shared console to be viewed and track changes (Figure7).

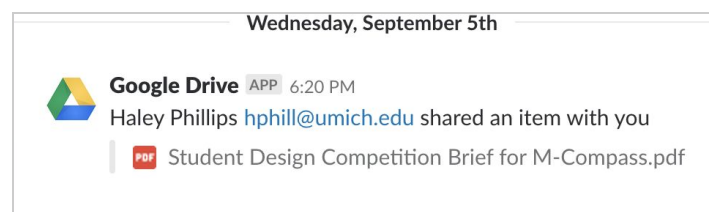


Figure7. Google Drive as Slack plug-in.

One of the most powerful feature of Slack is its third-party services integration and APIs can also be added for service customization. For example, by adding the Google Doc plug-in into Slack, files in Google Doc can be shared in the channel with its source, name, format, time, creator and preview (optional). Options available for the Google Doc such as setting up permissions can be

done directly from Slack as well. This feature reduces back and forth for both individuals and the team in terms of different tools being used and file-sharing breakdowns.

From the reasons above we recommend Slack as a tool for collaboration in the long run. There are currently free and paid plans for Slack (pricing plans: <https://slack.com/pricing>), the main differences between the free and paid plans are in the storage for messages and files, the available number of people in screen sharing, and the amount of security options provided. If using Slack we recommend starting from the free version as it includes fundamental yet powerful features already, and if concerning security issues consider more about upgrading.

Secondary Recommendations

Our findings also uncovered that since every report includes one new outside member, the faculty collaborator, and these individuals often struggle with understand the context and audience for these types of report writing. Based on this, we recommend connecting past faculty collaborators with current or future collaborators to help these individuals with not only the transition onto the team, but also with how to write for this type of report and audience. This additional and available support from faculty colleagues could help ease not only the work on IHPI members in getting the faculty collaborators prepared for the report generation process, but it could also increase transitional comfortability for collaborators.

We additionally recommend not designating the faculty collaborator the lead on each report. Since this role is constantly changing with each report, this constant change in role adds both additional pressure for faculty collaborators and confusion for team members who would benefit from consistency and standardization.

Our findings also uncovered a lack of standardization and confusion regarding the file naming procedures for the different report versions. We recommend creating a standardized file naming procedure that is mandatory for all team members to follow. The addition of this step would increase ease of access to reports, and reduce back and forth communication and confusion among team members, which ultimately leads to increased efficiency in the report generation process.

Recommendations Summary

Primary Recommendations

1. Use of Microsoft Word: Web Plug-in to enable real-time collaboration in pre-existing system
2. Use of Slack- a tool for augmenting the collaborative nature of work and facilitating communication within team

Secondary Recommendations

1. Connecting faculty collaborators for better knowledge transfer about the report process and smooth onboarding.
2. Not assigning lead roles to faculty collaborators as they are transitioning members.
3. Standardized file naming system for enable ease of file access and version control.

Conclusion

In the process of examining and investigating the current practices of data collection and dissemination the team at IHPI employs, team 4D conducted a thorough contextual inquiry. The inquiry revealed inefficiencies in the process and recognized areas of growth. The team understood the value of deeper inquiry and data-driven insight, that lead to uncovering higher level information deviating from the original problem statement. The team while trying to conjecture the real problem was successful in identifying tacit and implicit characteristics of the problem. While the initial problem dealt with understanding the process and inefficiencies in the process, the inquiry led the team to find out the hierarchy in position played a significant role in the use of inefficient practices. The team ultimately recommended and supported the use of technological tools like the Microsoft web plugin and Slack to better compliment the already existing collaborative spirit among the team. The recommendations were made keeping in mind both the ideal and real scenarios in which these might be utilized.

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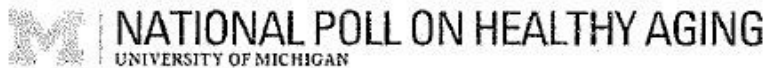
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Appendix A - IHPI Research Workflow



National Poll on Healthy Aging Processes and Guidelines for Faculty Collaborators

For background on the NPHA and to see previous reports, please visit our website:
www.healthvagingpoll.org

NPHA Core Team

Preeti Malani, MD, MSJ, MS - Director

Jeffrey Kullgren, MD, MS, MPH - Associate Director

Erica Solway, PhD, MPH, MSW - Associate Director

Dianne Singer, MPH - Production Manager

Matthias Kirch, MS - Data Analyst

- half-team for child report

→ controls access to the shared folder

NPHA Consultant

Sarah Clark, MPH

- meetings don't need to include everyone

- child team - edit in meetings

NPHA Communications Team

Trish Meyer EdM - Manager, Strategic Initiatives & Programs

Kara Gavin, MS - Research & Policy Media Relations Manager

Christina Camilli-Whisenhunt, MPA - Communications & Marketing Manager

Mark Lubin, MS - Communications Specialist

Emily Smith, MA - Multimedia Designer

Lauren Hutchens, MPH - Editor

Eileen Kostanecki, MA - Director, Policy Engagement & External Relations

- main communication is email

- adding collaborators - causes lower efficiency
↓

not starting from scratch - Benefit

Figure13: the team members and each one's job role in IHPI.

Dianne, Erica, Preeti - decide which topics go out when

Poll Module Ideas

- Erica maintains a running list of poll topic suggestions/ideas ✕
- NPHA team members in collaboration with AARP and IHPI faculty generate poll topics ideas.
- Preeti and Erica serve as NPHA liaisons to solicit ideas and partnerships with IHPI faculty.

Question Development

1st develop Qs

- Faculty collaborators meet with NPHA Core team to discuss module idea, research objectives, scope of research questions, and review the process of NPHA from question development through dissemination of results.
- Faculty collaborator(s) develops first draft of questions, target is 10-12 questions per module. Note: Survey vendor Ipsos (formerly GfK) collects demographic and other health profile data annually. [Add new link to KnowledgePanel when available, and health profile Qs] and our NPHA polls usually include a series of health and household information I questions that can be used across modules.
- NPHA Core team edit and refine questions over 3-4 meetings and via email with faculty collaborators. The question develop process typically lasts about 8 weeks with 4-5 cycles of edits. → meet weekly
- Module order is determined. (Preeti, Erica, and Dianne)
- Survey program instructions and formatting. (Dianne)
- Review of formatted pretest. (NPHA Core team and faculty collaborators)

↓
given contact
or
know they want
to collab w/

Fielding Surveys

- Survey is sent to the vendor. (Dianne) → 1 week to do programming
- Pretest survey links are tested on computer and mobile devices. (NPHA Core team and faculty collaborators) → link v. paper
- Survey pretest is conducted over 3 days with 100 respondents. Pretest data is sent to faculty about 1 week after closing the pretest. (Dianne)

- Pre-test w/ 100 subjects

→ write-in edits/
comments

Dianne does 1st testing

↓
sends to core team
↓
faculty collaborator

- Grammar
- Format
- Style

Figure14: the outline and schedules of IHPI including poll module ideas, question development and fielding surveys.

Appendix B - Drafts of UI Reports and Modules

earliest Draft of UI Report

8/5

Outline for UI Module

I. Intro

Urinary incontinence, or the involuntary loss of urine, is associated with older age and is especially prevalent among women.

II. How common is UI among women 50-80?

Nearly half of women surveyed reported urinary incontinence over the past year. Of women reporting urinary incontinence, 41% describe their leakage as problematic and 1 in 3 had leakage episodes almost daily. Urinary incontinence episodes occurred most commonly with coughing/sneezing, trying to get to the bathroom, laughing, and exercise. Most women with UI reported self-managing their incontinence with pads or protective undergarments (60%) and 40% of women also reported doing pelvic floor exercises or Kegels to help their symptoms. Fifteen percent of women reported limiting their fluid intake to help reduce their urinary incontinence.

In addition to the physical discomfort, women with urinary incontinence also reported significant psychological stressors. Half of women with UI expressed concern about their incontinence getting worse and 40% reported embarrassment regarding their urinary leakage. More than 1 in 3 women worried about smelling of urine to others and 15% modified their wardrobe to incorporate dark colors or layers to better hide accidents.

III. Talking to a doctor about UI

Overall, only 30% of women said they had spoken to a doctor about their urinary incontinence. Women who viewed their incontinence as a problem or felt embarrassed by their UI were more likely to have sought medical treatment. Furthermore, women with 3 or more healthcare providers in the past year were more likely to have brought up urinary incontinence with a doctor. Most commonly, women addressed urinary incontinence with their primary care physician (50%), while 24% talked to an Ob/Gyn and 22% spoke to a Urologist.

So what prevents women from seeking medical treatment for urinary incontinence?

About half of women with bothersome incontinence said they had not spoken to a doctor because they were uncomfortable discussing this issue or they did not see urinary incontinence as a health problem. 50% of women said they would feel more comfortable discussing urinary incontinence with a woman physician than a man.

IV. Implications

So is urinary incontinence really a health problem? The answer is yes. While aging may be a risk factor, urinary incontinence is not a normal part of aging. Urinary incontinence can negatively affect quality of life and sometimes can be a sign of other underlying medical problems. Among women in our survey, urinary incontinence was associated with poorer self-rated health, asthma/COPD, diabetes, multiple sclerosis, and sleep disorders.

Other medical conditions associated with urinary incontinence are dementia and other neurologic disorders, chronic constipation, urinary tract infections, and obesity.

Figure8: the earliest draft of UI report.

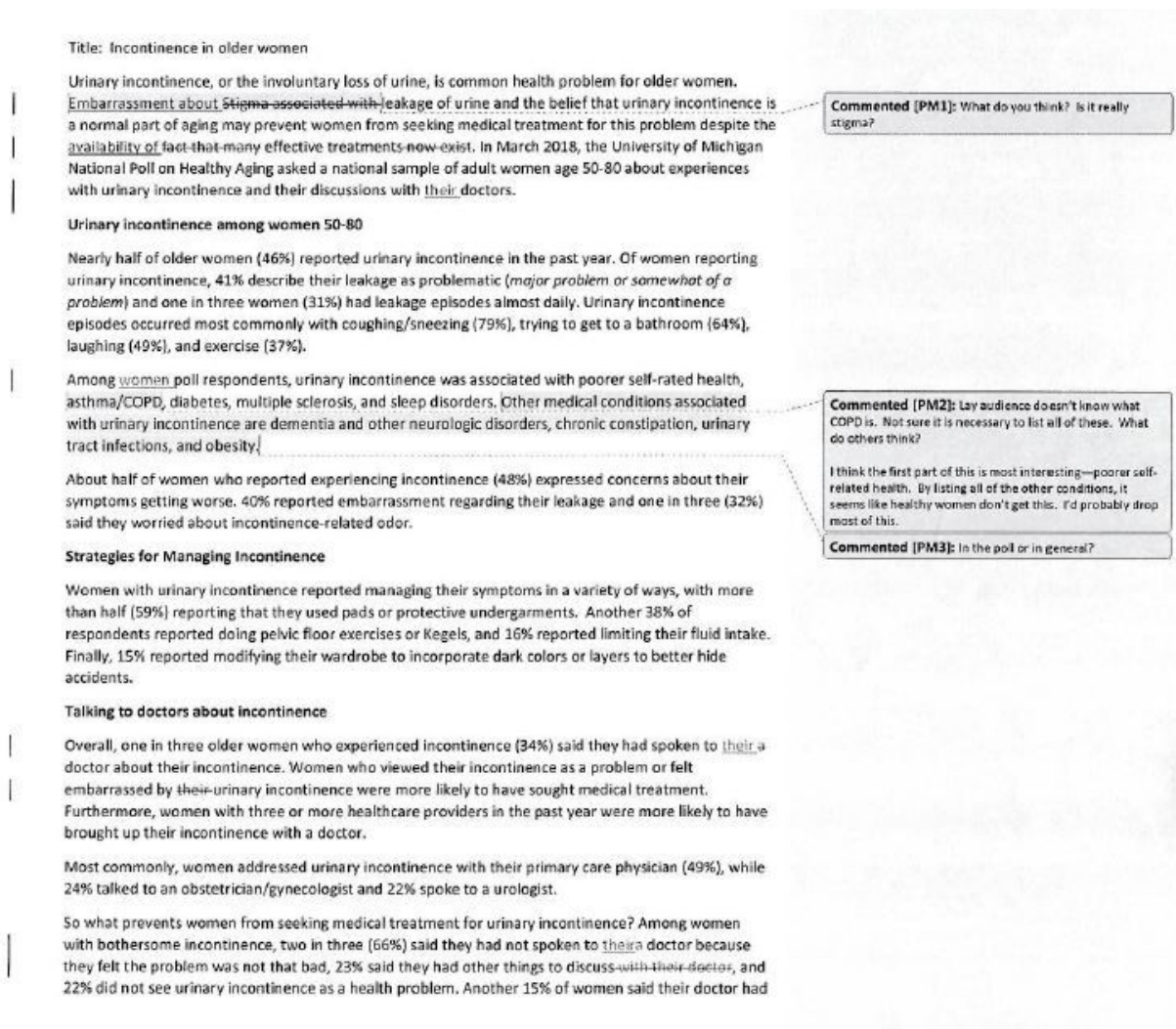


Figure9: the 2nd draft of UI report.



NATIONAL POLL ON HEALTHY AGING

UNIVERSITY OF MICHIGAN

UI Final

November 2018

HEALTHYAGINGPOLL.ORG

Urinary Incontinence: An Inevitable Part of Aging?

Urinary incontinence, or the involuntary loss of urine, is common among older women. Embarrassment about urine leakage and the belief that urinary incontinence is a normal part of aging may prevent women from seeking medical treatment for this problem, despite the availability of effective treatments. In March 2018, the University of Michigan National Poll on Healthy Aging asked a national sample of women age 50–80 about experiences with urinary incontinence and related discussions with their doctors.

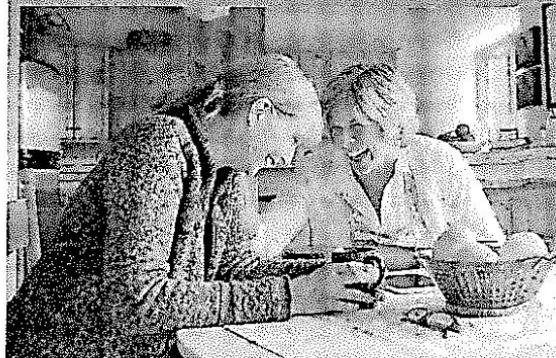
Urinary Incontinence in Older Women

Nearly half of older women (46%) reported urinary incontinence in the past year (43% for those age 50–64 and 51% among those age 65–80). Of women reporting urinary incontinence, 41% described their leakage as problematic (*major problem or somewhat of a problem*), and one in three women (31%) had leakage episodes almost daily. Urinary incontinence episodes occurred most commonly with coughing/sneezing (79%), trying to get to a bathroom (64%), laughing (49%), and exercise (37%).

Among women who reported experiencing incontinence, about half (48%) expressed concerns about their symptoms getting worse in the future. Forty percent reported embarrassment regarding urinary leakage and one in three (32%) said they worried about incontinence-related odor. Fifteen percent reported modifying their wardrobe to incorporate dark colors or layers to better hide accidents.

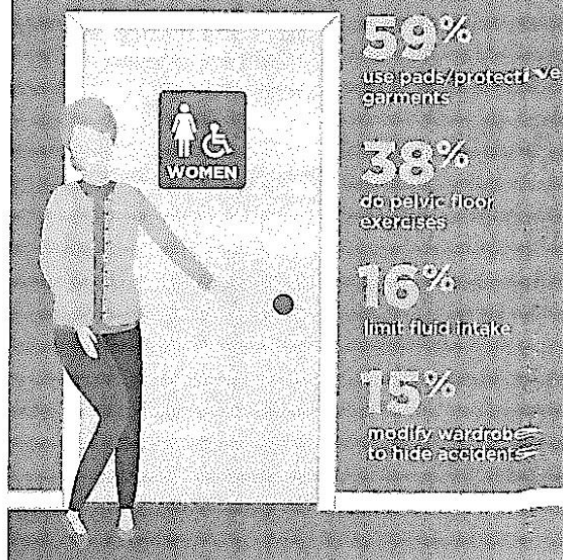
Strategies for Managing Incontinence

Women with urinary incontinence reported managing symptoms in a variety of ways, with more than half



Strategies used to manage urinary incontinence

AMONG WOMEN AGE 50–80



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MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

Directed by



INSTITUTE FOR
HEALTHCARE POLICY & INNOVATION
UNIVERSITY OF MICHIGAN

Figure10: the final draft of UI report.

for UI Module I

Title: Incontinence in older women

incontinence (UI), or the involuntary loss of urine, is an increasingly associated with older age, especially prevalent among women common health problem for older women. Stigma associated with leakage of urine and the belief that urinary incontinence is a normal part of aging may prevent women from seeking medical treatment for this problem despite the fact that many effective treatments exist. In March 2018, the University of Michigan National Poll on Healthy Aging asked a national sample of adult women age 50-80 about experiences with incontinence and their discussions with

common is UI Urinary incontinence among women 50-80?

half of older women (46%) surveyed reported urinary incontinence over in the past year. Of those reporting urinary incontinence, 41% describe their leakage as problematic (major problem or hot of a problem) and 1 in 3 women (31%) had leakage episodes almost daily. Urinary incontinence episodes occurred most commonly with coughing/sneezing (79%), trying to get to the bathroom (64%), laughing (49%), and exercise (37%). All of the previously listed activities associated with incontinence are either unavoidable aspects of daily life or health-promoting positive behaviors enhance quality of life. While any urine leakage can diminish quality of life, urinary incontinence events women from participating in health-promoting behaviors such as exercise can have a initially negative impact on overall health.

Is urinary incontinence really a health problem? The answer is yes. While aging may be a risk factor, urinary incontinence is not a normal part of aging. In addition to limiting healthy physical activity, urinary incontinence can also be a sign of underlying medical problems. Among poll respondents, urinary incontinence was associated with poorer self-rated health, asthma/COPD, diabetes, multiple sclerosis, sleep disorders. Other medical conditions associated with urinary incontinence are dementia and neurologic disorders, chronic constipation, urinary tract infections, and obesity.

Physical well-being is not the only aspect of health impacted by urinary incontinence. We know from studies that urinary incontinence also affects emotional well-being and has been clearly associated with feelings of social isolation, loneliness and depression. In our survey, women with urinary incontinence also reported significant psychological stressors with about half (48%) expressing concerns their symptoms getting worse. 40% reported embarrassment regarding their leakage and more than 1 in 3 women (32%) said urinary incontinence-related odor was something they worried about.


Management

Women with urinary incontinence often self-manage their symptoms in a variety of ways. With the aging population, the market for incontinence products has increased exponentially over the last few decades. In the U.S., retail sales for adult incontinence products is now estimated to be over \$2 billion per year, with incontinence pads representing the largest part of this market. In our survey, use of pads in 10 Most (59%) with UI reported self-managing their incontinence with pads or protective undergarments

**Singer, Dianne**
12:52 PM Today 

Replace: "Outline for UI Module I. I" with "Title: Incontinence in older women"

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**Preeti Malani**
4:02 AM Aug 23 

Intro sentence is a bit flat—too academic. Even..."occurs common among women". We are only talking about women. "Prevalent" better for academic writing not this report.

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**Singer, Dianne**
12:52 PM Today 

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**Swenson, Carolyn ...**
12:52 PM Today 

Figure11: the writing up for the draft of UI module which is written in Microsoft Word in Aug 1st, 2018.

Title: Is Urinary Incontinence Really a Health Problem?

Urinary incontinence, or the involuntary loss of urine, is a common health problem for older women. Embarrassment about urine leakage and the belief that urinary incontinence is a normal part of aging may prevent women from seeking medical treatment for this problem, despite the availability of effective treatments. In March 2018, the University of Michigan National Poll on Healthy Aging asked a national sample of women age 50-80 about experiences with urinary incontinence and related discussions with their doctors.

Urinary Incontinence and Other Health Issues

Nearly half of older women (46%) reported urinary incontinence in the past year (43% for those age 50-64 and 51% among those age 65-80). Of women reporting urinary incontinence, 41% described their leakage as problematic (*major problem or somewhat of a problem*) and one in three women (31%) had leakage episodes almost daily. Urinary incontinence episodes occurred most commonly with coughing/sneezing (79%), trying to get to a bathroom (64%), laughing (49%), and exercise (37%).

Among women who reported experiencing incontinence, about half (48%) expressed concerns about their symptoms getting worse in the future. Forty percent reported embarrassment regarding urinary leakage and one in three (32%) said they worried about incontinence-related odor. Fifteen percent reported modifying their wardrobe to incorporate dark colors or layers to better hide accidents.

Strategies for Managing Incontinence

Women with urinary incontinence reported managing symptoms in a variety of ways, with more than half (59%) reporting that they used pads or protective undergarments. Another 38% of respondents reported doing exercises to strengthen the pelvic floor (“Kegels”), and 16% reported limiting fluid intake.

Talking to Doctors about Incontinence

Overall, one in three older women who experienced incontinence (34%) said they spoke to their doctor about urinary leakage (28% for those age 50-64 and 44% among those age 65-80). Women who viewed incontinence as a problem or felt embarrassed by it were more likely to have sought medical advice. Furthermore, women who saw three or more doctors in the past year were more likely to have brought up incontinence with at least one of their physicians.

Women most commonly addressed urinary incontinence with their primary care physician (49%), while 24% talked to an obstetrician/gynecologist and 22% spoke to a urologist.

What prevents women from seeking medical treatment for urinary incontinence? Among women with incontinence, two in three (66%) said they had not spoken to their doctor because they felt the problem was not that bad, 23% said they had other things to discuss, and 22% did not see urinary incontinence as a health problem. Another 15% of women said their doctor had not asked about urinary incontinence, 10% were uncomfortable discussing urinary leakage, and 4% did not think the doctor could help. About half of women (53%) said they find it easier to talk about urine leakage with a female physician.

Figure12: the writing up for the revised draft of UI module which is written in Microsoft Word in Oct 18th, 2018.

Appendix C - NPHA Sample Reports

Vision and Eye Care in Older Adults

Maintaining good vision is an important aspect of overall health. Older adults are at increased risk for age-related eye conditions like cataracts, glaucoma, macular degeneration, and diabetic eye disease. Those with poor vision are also more likely to experience falls, social isolation, and decreased independence.

Many vision problems can be prevented or corrected with proper medical care. However, identifying those who are at risk or affected by or at risk for these problems can be challenging. In March 2018, the University of Michigan National Poll on Healthy Aging asked a national sample of adults age 50-80 about their vision and their experiences getting eye care.

Self-Reported Vision and Health

A large majority of respondents reported wearing glasses and/or contact lenses (86%). Of these, the majority of older adults who said they wear glasses and/or contacts, the majority felt that their corrected vision (when corrected (if they used glasses or contact lenses)) was excellent or very good for "seeing things far away" (64%) and "for seeing things up close" (56%). About one in four (27%) older adults reported being diagnosed with cataracts, glaucoma, macular degeneration, or diabetic eye disease. Respondents who reported excellent or very good corrected distance vision were also more likely than those with poorer vision to report excellent or very good overall physical health.

Vision and Primary Care Providers


Among respondents who get regular medical check-ups, two out of five (42%) reported that their primary care provider asked about their vision, and about one in seven (17%) reported having their vision checked using an eye chart at a primary care visit. Respondents who reported that their primary care providers talked to them about vision or checked their vision were more likely to also report having had an exam with an eye doctor in the past two years (91% vs. 77%). Those who noted that their primary care providers asked about vision were more likely to have a history of diabetes (59% vs 37%), lower household incomes (50% <\$30,000 vs 40% >\$60,000), and/or a history of eye disease (49% vs 39%).

Eye Care & Exams

Overall, 89% of older adults believed that it was "important for someone like them" to have an eye exam every 1-2 years, and 82% of all respondents reported having their eyes checked by an eye doctor (ophthalmologist or optometrist) during that time. One in ten older adults (10%) believed that they should get regular eye care but had not done so in three or more years.

Most respondents got an eye exam either to have their glasses prescription checked (34%), to make sure their vision was okay (30%), or because they were having a problem with their eyes or vision (18%).

One in ten older adults (10%) believed that they should get regular eye care but had not done so in three



Hutchens, Lauren
1:12 PM Today

✓

✕

Add: "and"

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Singer, Dianne
1:12 PM Today

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Add: "Eye"

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Erica Solway
8:55 AM Aug 16

Resolve

⋮


I'd suggest "Eye Care"

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Singer, Dianne
11:14 AM Aug 16

Agree

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Singer, Dianne
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Delete: "Vision"

Figure15: the writing up for the revised draft of vision module of NPHA reports on Aug 13th, 2018.

Vision and Eye Care in Older Adults

Maintaining good vision is an important aspect of overall health. Older adults are at increased risk for age-related eye conditions like cataracts, glaucoma, macular degeneration, and diabetic eye disease. Those with poor vision are also more likely to experience falls, social isolation, and decreased independence.

Many vision problems can be prevented or corrected with proper medical care. However, identifying those who are affected by or at risk for these problems can be challenging. In March 2018, the University of Michigan National Poll on Healthy Aging asked a national sample of adults age 50–80 about their vision and their experiences getting eye care.

Self-Reported Vision and Health

A large majority of respondents (86%) reported wearing glasses and/or contact lenses. The majority felt that their vision (when corrected if they used glasses or contact lenses) was *excellent* or *very good* for "seeing things far away" (64%) and "for seeing things up close" (56%). About one in four older adults (27%) reported being diagnosed with cataracts, glaucoma, macular degeneration, or diabetic eye disease. Respondents who reported excellent/very good vision were more likely to report excellent/very good overall physical health than those with worse vision.

Vision and Primary Care

Among respondents who get regular medical check-ups, two out of five (42%) reported that their primary care provider asked about their vision, and about one in seven (17%) reported having their vision checked using an eye chart at a primary care visit. Respondents who reported that their primary care providers talked to them about vision or checked their vision were more likely to also report having had an exam with an eye doctor in the past two years



Vision and Primary Care

AMONG ADULTS AGE 50–80 WHO
RECEIVED REGULAR CHECK-UPS

Does your primary
health care provider ask
you about your vision?

42%
Yes

58%
No



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Figure16: the writing up for the final vision module of NPHA reports on Aug 27th, 2018.

Appendix D - Affinity Wall Analysis

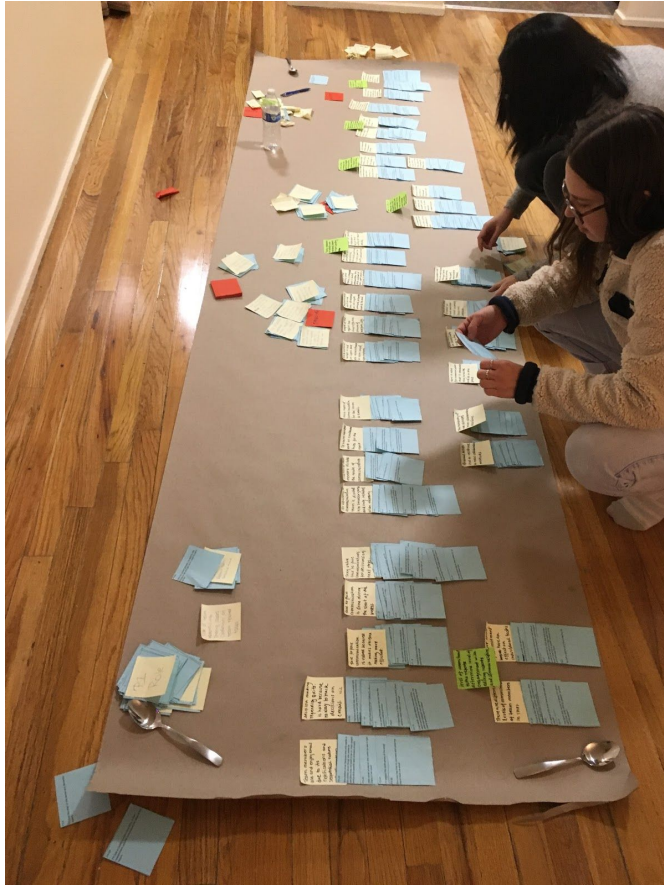


Figure17: the process of making the affinity wall and analysing the main problems of the workflow process.

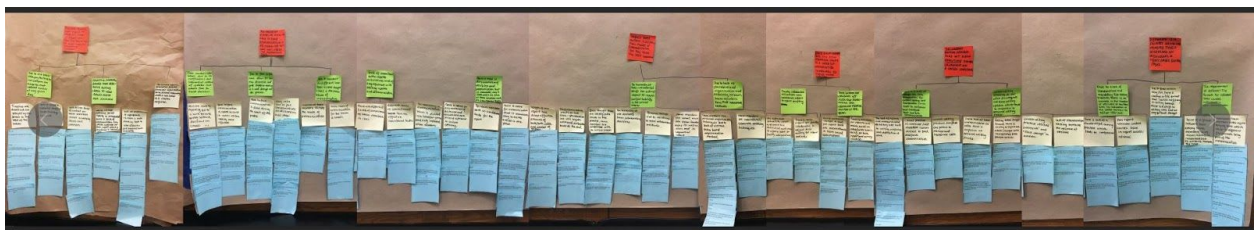


Figure18: the final affinity wall.

Appendix E - Brainstorming

| | | Proactive planning reduces retroactive confusion and communication: Real-time collaboration & Timeline | | |
|---------|----|---|------|----------|
| | | Solution Ideas | cost | good for |
| Alli | 1 | Walkie Talkies | | |
| | 2 | Trello | | |
| | 3 | Basecamp | | |
| | 4 | Collaboration work times (same location) | | |
| | 5 | Dropbox | | |
| Gowri | 6 | Slack | | |
| | 7 | Online running real-time checklist -Firestubs | | |
| | 8 | Real-time co-authoring microsoft word web plug-in | | |
| | 9 | Asana - Project Management System | | |
| | 10 | Calendar mapping meeting times before the cycle begins and using "gotomeeting" software for collaboration over video conferencing | | |
| Si | 11 | Faculty training workshops | | |
| | 12 | Google drive | | |
| | 13 | Telegram | | |
| | 14 | (GitHub) | | |
| | 15 | | | |
| Xueying | 16 | Teamwork.com/project-management-software | | |
| | 17 | Real-time meeting (related people sit together to complete a draft of paper) | | |
| | 18 | monday.com | | |
| | 19 | Trello | | |
| | 20 | Asana | | |

Figure19: the brainstorming of our final solutions.

Appendix F - Interview Protocol

CONTEXTUAL INQUIRY

INTERVIEW PROTOCOL

Institute of Health, Policy and Innovation

Problem Statement

IHPI is encountering the problem of complicated internal handovers and dissemination strategies due to the involvement of multiple workgroups in creation of a report and disseminating results. Therefore IHPI is looking for-

- i) Ways to help communication between workgroups be more effective and its reports reach out to target audience more easily,
- ii) Improved method to streamline their distribution process for each report (stakeholders change based on the contents of the report).

Interview Protocol

Introduction

Hello, my name is [x], and this is [y], we're master's students at the University of Michigan School of Information, School of Architecture, and/or the School of Art and Design. As you've hopefully heard, my class is doing a consulting project with IHPI (Institute of Health Policy and Innovation). We're here to understand better how the process by which you are currently collecting and disseminating data for your 50-80 year-old demographic and see if there is some way to improve these processes. This interview will take about 60-90 minutes, during which time we'll go through some questions, and I might ask you to show me how you actually conduct your work. Throughout, I'd like you to treat me as if you're describing the situation to someone who isn't familiar with IHPI or your mission. I'm here to learn from you.

A couple of things before we start. To the extent possible, we will take your comments to be confidential. We will combine all of the comments from all of the interviews we're conducted so that your comments are not easily traced to you. If we quote you in our final report, we will do so without identifying your name or specific role. If there's anything you really don't want on the record, even if it's anonymized, please let me know that, as well. Also, this interview is entirely voluntary on your part. If for any reason you want to stop, please let me know. We can end the interview at that point with no repercussions for you

of any kind. If you wish, I can also throw out my notes of what you've told me until that point.

Do you have any questions for me? All right, then let's proceed.

[Once the interview is underway] Oh, and by the way, do you mind if I take an audio recording? This is just so that my team doesn't miss anything. No one at your organization or otherwise will have access to the recording and it will be deleted after this project concludes. Thanks.

Overarching question for inquiry -

What are the work roles in IHPI's National poll of healthy aging and what does the workflow look like? What are areas of intervention in the hand-off process and dissemination to make them more efficient?

Questions for Core Team Members

[Preeti Malani, MD, MSJ, MS- Director]
[Erica Solway, PhD, MPH, MSW- Associate Director]
[Dianne Singer, MPH- Production Manager]

Pre-questions

1. Can you explain your role at IHPI?
2. How long have you been at this job?
3. How have you been liking doing this job? Why?

Work-related questions (The most recent experience)

4. What does a typical day for you look like?
 - When you came in yesterday, what was the first thing you did?
 - Second, third, so on..
- Is this process the same everyday?
 - If not, what determines a change to your routine?
- What is your role with the healthy aging reports?
 - Is this role the same with every report?
- Can you think back to the last report that was generated, which parts of the process were you involved in?
 - Can you describe this a little more?
 - Did you have a plan or an outline of milestones?
 - If yes, how did you decide on them?

Figure20: our team's final interview protocol of IHPI.