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## The After-Visit Summary: An Opportunity for Technical Communicators

Drew Jordan

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The After-Visit Summary:  
An Opportunity for Technical Communicators

By  
Drew Jordan

An Alternate Plan Paper Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Arts  
In  
English: Technical Communication

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Mankato, Minnesota  
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## Abstract

The After-Visit Summary (AVS) is a document patients receive while being discharged from a medical appointment. In this paper, I explore the aspects of patient education materials (PEMs), health literacy, and plain language in respect to the AVS with research from the fields of technical communication, health communication, and medicine. The narrative included depicts my own personal experience with the document to emphasize my push for action. The main objective for this paper is to urge technical communication scholars to analyze the AVS and evaluate it for areas of improvement. A benefit to both patients and practitioners, optimizing the AVS could contribute to more effective at-home care.

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## Introduction

*Back in 2018, I suited up for the first tournament of Minnesota State University, Mankato's Ultimate Frisbee fall season. As a senior on the team, the tournament itself was bittersweet enough; what happened in our second to last game was enough to make a grown man cry. After making a cut forward to advance to the disc, I was running in a straight line when I heard a loud popping noise accompanied by what felt like a hammer busting into the side of my knee; I collapsed to the ground with tears and a mouth so foul it'd make a sailor gasp. In that moment, I completely tore and ruptured my anterior cruciate ligament (ACL). The ACL is a tissue that helps control the back-and-forth motion of a person's knee— it's a pretty big deal. Along with not being able to finish out my senior season with the team, I was unable to walk and in an unbearable amount of pain.*

*After the initial Emergency Room visit, an ace bandage, and pair of crutches to last me through my MRI (magnetic resonance imaging, used to see inside the knee) the following week, the doctors discovered the rupture and called me in to discuss my results. In an appointment that spanned about an hour and a half, I learned about what happened to my knee and what I was going to have to do to fix it. Discussing surgery options, physical therapy schedules, goal points, and pain management were only a few of the many aspects of the appointment. I was given a document— my After-Visit Summary (AVS)— that summarized all that was discussed and worked on during my visit and sent on my way. Little did I know that I would become very familiar with these documents.*

*I probably got three or four AVSs a week before and after surgery. I referenced them often to make sure I was meeting goals and making sure my at-home care was sufficient. My*

***countertop and desk were covered with papers upon papers of information regarding my health. Although not being able to walk was definitely the worst of it, I can still remember the stress I felt staring at all of those papers, knowing I had to get everything right, and knowing I didn't understand the lot of it.***

In recent years, many layperson documents in the United States have been redesigned and updated to ensure they meet the needs of their intended audiences. One of these documents, the After-Visit Summary (AVS), was redesigned in 2018 and produced some positive outcomes (Federman, 2018, "Challenges"). Though this is a positive development, more work is needed to make this genre as patient-centered as possible, and technical communicators are well-equipped to do that work. Technical communication scholars have focused on medical genres such as lab reports and electronic health records (EHRs); health communication scholars have focused on the usability and understandability of the AVS. In this paper, I am bringing these perspectives together to show the areas in which technical communicators can use their skills and knowledge to optimize the AVS and produce better results for both patients and healthcare providers.

In the paper that follows, you will read all about the AVS and the aspects that come into play when thinking about the usability of the document: patient education materials (PEMs), health literacy, and plain language. I will be conducting a literature review to support my main point of encouraging technical communication experts to take another look at the AVS and identify how it can further be improved upon. I will also be conducting an analysis of an AVS I received during my plethora of appointments for my knee injury. The overall message is that

there is still work to be done with this widely used communication tool and that it is our job, as technical communicators, to make the document the best it can be.

## Background

The AVS is a paper or electronic document given to patients after a medical appointment, which is intended to summarize patients' health and guide future care, including self-management tasks (Federman et. al, 2018, "Challenges"). The AVS was created to help patients following their appointments; whether aiding in what prescription to take and when, or what exercises they should be doing at home, the AVS solved a need for patient at-home care. The three main purposes of the AVS include enhancing the ability of patients to remember the content of their clinical interactions, supporting patients in making better health decisions to improve their health outcomes, and improving the quality of information available in the patients' EHR (Pathak et al., 2019). A patient is usually given a paper copy of the AVS from their healthcare provider at the close of their visit and is uploaded to the patient's EHR for easy online access for patients and caregivers.

Before a redesign by the International Journal of Medical Informatics in 2018 (Federman et al., 2018, "Challenges"), patient satisfaction studies showed that patients infrequently referenced, used, or even retained their AVS, suggesting that the documents did not meet patients' needs (Ralston et al., 2007). The redesign had to do with a Federman et al. study on the EHR's influence on the AVS and noted clinical leaders' opinions on formatting and experiences. All participants reported the motivation of their respective AVS development committees was to improve the document because it was a sub-optimal patient education tool and represented their institution poorly (Federman et al., 2018, "Challenges"). The authors of

the study created mock-up documents accounting for known technical challenges in modifying the AVS and health literacy design principles to ensure clear and effective print communication, as specified in the Patient Education Materials Assessment Tool (PEMAT) and similar resources (Federman et al., 2018, “Challenges”).

Federman et al. identified six principal activities to consider when implementing AVS changes, including revising medical jargon, making sure the document maintains a “clean” appearance, utilizing a user-centered design, and shortening it (2018, “Challenges”). Along with another team that same year, Federman conducted an evaluation of the impact of the redesigned AVS before and after its introduction in an academic primary care practice compared to a concurrent control practice (Federman et al., 2018, “Evaluation”). Results of the study concluded that a patient-centered AVS increased the number of patients receiving it and that it helped them take their medications on time.

So, why keep looking for ways to improve the AVS if the most recent design has produced favorable outcomes? Simply, because the document is used for much more than reminding a patient to take their medication on time. The AVS contains loads of important information that patients need to be able to understand to optimize their at-home care; notes about what was discussed during the appointment, at-home exercise descriptions and graphics, and upcoming appointment dates are just a few of the sections a patient can find on their AVS. Understanding this information is often critical to patients’ recovery.

Along with that, it’s our job as technical communicators. Technical communication is a means of communicating complex content to a target audience. The AVS is a perfect example



of technical communication because it is a tool for communicating content to a specific audience.

## Patient Education Materials

***Throughout my first appointment, my surgeon provided me hand-outs and brochures that touched on a few of the things he was talking about. To be completely honest, I didn't take a second look at them after that day. However, I did follow one document to the best of my abilities: the AVS I was provided at the end of the appointment. Since this was late 2018, the document had already gone through its redesign. I read through it and looked up anything I couldn't figure out.***

Patient education can be defined as the process of influencing patient behavior and producing the changes in knowledge, attitudes, and skills necessary to maintain or improve health (AAFP, 2000). According to the American Academy of Family Physicians, patient education materials (PEMs) should cover the common health problems in a community, as well as frequently requested health promotion topics (2000). Examples of PEMs include patient discharge instructions, informational materials to help patients make informed decisions, informational materials created specifically for use in shared decision making, take-home instructions, information on nutrition or exercise, information to help educate to potentially change behaviors, pharmaceutical pamphlets explaining drugs uses and interactions, and information on conditions or symptoms found in online portals (Meloncon, 2017).

Written PEMs provide a vital source of information for patients; as more and more patients are using the internet to supplement or replace patient-doctor communication, PEMs

massively gained in importance during the latest years (Betschart et al., 2019). With the increase in use and importance, it is necessary to note that studies assessing the readability, suitability and/or comprehensibility of PEMs on a myriad of topics abound, and the evidence is clear that most education materials are too complex for patients with low health literacy (Shoemaker, Wolf, & Brach, 2014). Health literacy is a patient's ability to use and understand health information, which I will describe in more depth later in this paper.

The Patient Education Materials Assessment Tool (PEMAT) is a systematic method to evaluate and compare the understandability and actionability of PEMs (AHRQ, 2013, "Introduction"). The PEMAT was designed to be completed by professionals, including health care providers, health librarians, and others tasked with providing high-quality materials to patients or consumers (AHRQ, 2013, "Introduction"). The PEMAT helps these professionals select from the many PEMs available to determine those that are easier to understand and easier to act on (AHRQ, 2013, "Introduction"). Materials that score better on the PEMAT can be distributed to patients and consumers in hard copy, placed in an EHR system for providers to access at the point of care, or posted on patient web portals (AHRQ, 2013, "Introduction"). Since its development, the PEMAT has demonstrated strong internal consistency, reliability, and evidence of construct validity (Shoemaker, Wolf, & Brach, 2014).

Along with utilizing the PEMAT and other tools like it, health care and information professionals can help to enhance health literacy by providing patient education resources that are written in plain language, or easily understood language at a basic reading level (Quesenberry, 2017).

## Patient Education Materials: The AVS

***With all of my physical therapy (PT) appointments before and after surgery, I didn't receive one brochure or leaflet regarding the PT exercises I was going to be completing at home. Although there were graphics depicted on my AVSs, I thought I'd be receiving more in-depth information or even more suggestions for exercises I could be doing to rehab quicker—this isn't to say that I'm not happy to have spared another tree. Most of the time, I would ask questions at the beginning of the following appointment to be absolutely sure I was doing them correctly. My physical therapist would go through it with me once and we would move on with the appointment. Sometimes embarrassed at having to ask, I'd revert back to instructional online videos on YouTube. Although I didn't have a problem looking exercises up, I can't help but think that there were PEMs out there at the time that could've assisted me at home, and that would be absolutely necessary for patients without internet access like I had.***

According to Betschart et al., written PEMs represent an indispensable source of patient information (2019). Well-formulated and well-presented healthcare information promotes health awareness, encourages self-care, and improves the effectiveness of clinical care (Betschart et al., 2019). In a 2016 study, Salmon et al. analyzed the content, format, and usability of AVSs to determine whether they were appropriately designed to ensure patient understanding of what occurred during the patient's clinical visit.

Salmon et al. obtained a convenience sample of clinical summaries from thirteen diverse practices across the United States and assessed their characteristics using validated measures; the authors also interviewed key informants at these practices to assess their views of the documents (2016). The summaries were generated by seven different EHR platforms. They had

small font sizes (median, 10 point) and high reading grade levels (median, 10). Suitability, measured with the Suitability Assessment of Materials (SAM) was low (median score, sixty-one percent) and understandability and actionability, measured with the Patient Education Materials Assessment Test (PEMAT), were fair to moderate (sixty-five and seventy-eight percent, respectively). Content and order of content were inconsistent across the summaries. Among physicians, forty-six percent found the summaries helpful for clarifying medications while thirty-eight percent found them helpful for conveying follow-up information. Results suggested that clinical summaries in the United States may often be sub optimally designed for communicating important information with patients. Authors concluded that a patient-centered approach to designing them is warranted (Salmon et al., 2016). This is where technical communicators come in.

### Patient Education Materials and Technical Communication

According to Renguette, design, creation, development, and assessment of PEMs can be enhanced with collaborations between technical communication practitioners and industry partners (2016). Similarly, Gouge's analysis of patient discharge information and instructions illuminated the AVS's failure to achieve some rhetorical aims, which suggested a need for an expansion of user experience theories and usability methods (2017). Gouge's findings led Meloncon to develop Patient Experience Design for PEMs, including the AVS (2017). Technical and professional communicators can provide important insights into the design of complex information found in most PEMs; thus, they become a site where the field's expertise can be actualized, as well as offer the opportunity to expand user experience as theory and advance usability as method (Meloncon, 2017).

Meloncon's approach to effective healthcare documents, Patient Experience Design (PXD), was developed in 2017. PXD brings together a number of important strands of existing scholarship; it combines key facets of patient-centered values, user experience, and technical communication (Meloncon, 2017). Meloncon states that PXD provides a defined path for technical communicators to be more directly involved in health care through the development of PEMs, as well as a variety of other types of information design— the field has long advocated for taking our skills and expertise into new areas, but in this case, PXD provides us the opportunity to better articulate the specialized knowledge we do have in a new arena (2017).

In his recent analysis *Cognition, Care, and Usability: Applying Cognitive Concepts to User Experience Design in Health and Medical Contexts*, St.Amant pulls from Meloncon's (2017) idea when he addresses that meeting the needs of users requires an understanding of the contexts where they interact with materials; in short, as each setting can contain its own unique conditions, how to safely engage in health and medical activities could vary based on location (2021). He argues that the better technical communicators understand factors of how context affects usability, the more they can research to determine audience expectations of usability in different contexts of care (2021). In discovering these expectations, technical communicators can further develop healthcare materials, like PEMs, that patients can use effectively (St.Amant, 2021). Introducing new theories for PXD is a huge step in the right direction and goes to show that as these new connections are made, opportunities for technical communicators to consider improvements on specified medical documents arise.

While PEMs benefit from technical communicators' ideas about evaluation assessments, design, and context, it's important to recognize that these materials can also be used to aid in

the health literacy crisis in the United States. Meloncon is quoted as saying that one of the primary avenues in which health literacy comes to the fore is in PEMs (2017). In the following section, you'll learn about health literacy and the part it plays in the fields of medicine and communication, as well as what it has to do with the AVS in particular.

## Health Literacy

***Thinking back to the first appointment after my MRI results came in, I had the mindset of “OK. Go to the doctor and do what they think is best; they’re the experts, they know what to do to get the best outcome.” It wasn’t until I was given options and asked the question, “What do you want to be able to do in life?” that I realized I was in over my head. Partially grief-stricken and absolutely confused, I sat as my doctor spat out information about different surgery options, physical therapy goals for before and after surgery, medications, restrictions, different knee braces that I’d be wearing, etc. It was completely overwhelming. Although my doctor was in the room with me, I felt alone, confused, and scared out of my mind.***

Health literacy is defined as having skills and competencies needed to find, comprehend, evaluate, and use health information and concepts to make educated choices, reduce health risks, and improve quality of life (Zarcadoolas Pleasant, & Greer, 2003). Graham and Brookey refer to limited health literacy as a hidden epidemic (2008). The Agency for Healthcare Research and Quality (AHRQ) has reported that a total of 90 million Americans lack health literacy and numeracy skills to productively participate and engage in their own health care (Meloncon, 2017). Patients may not understand necessary information because of inadequate health literacy skills (Duggan, 2006). According to Duggan (2006), it is likely that many patients lack skills to integrate health information in ways that encourage action. In a

2001 study (Rudd), almost fifty percent of adults who either didn't complete high school or are older than 65 scored at or below the lowest measured literacy level (Duggan, 2006). Various research measures have been used to establish the relationships among limited health literacy, health care, and health outcomes as well as the impact of interventions on individuals with limited health literacy (Clancy, 2009). These measures include the Test of Functional Health Literacy in Adults (TOFHLA) and the Rapid Estimate of Adult Literacy in Medicine (REALM) (Clancy, 2009). Age and ethnicity are both factors to take into account when interpreting health literacy/patient understanding.

According to the National Assessment of Adult Literacy's (NAAL) 2003 report, the Health Literacy of America's Adults, seventy-one percent of adults older than age 60 had difficulty in using print materials, eighty percent had difficulty using documents such as forms or charts, and sixty-eight percent had difficulty interpreting numbers and doing calculations (2006). A preliminary study also found that the level of health literacy is lower in ethnic minority groups compared to the ethnic majority (Avci, Kordovski, & Woods, 2019). Disparities in health literacy are important to understand because it is crucial for patients to comprehend information and instructions included in documents, forms, or any other health-related report to actively maintain their health. Recent changes in health care in the United States have made it important for health information to become easier to access, understand, and use. Making medical decisions without adequate information can lead to poor health outcomes. Providers are being incentivized to improve the quality and value of patient-centered communication and care.

## Health Literacy and the After-Visit Summary

***I always tried to remember to ask the questions I thought I'd have when I got home, but as an imperfect human, memory failed me sometimes. I did \*almost\* everything right. Thinking back, I probably should've taken notes at my appointments, but then again, should I have had to do that? Taking control of my health is my responsibility, so I should be the one making sure I'm understanding every piece of information I'm given, right?***

No— regardless of a patient's health literacy level, it is important that staff ensure that patients understand the information they have been given (AHRQ, 2015). According to Horowitz et al., the AVS is an important piece of a larger puzzle needed to improve health and general health literacy for all patients (2014). There have been numerous studies conducted on how patients of different ages, ethnic backgrounds, and health literacy levels feel about the AVS. Notable amongst these are Nouri et al.'s 2020 study and Pavlik et al.'s 2014 randomized trial.

Nouri et al. conducted a study to gauge the use and usefulness of AVSs among Latinx and Chinese patients in the United States as part of a larger study of communication and language barriers in a primary care setting (2020). The study included only patients with self-reported Latinx or Chinese ethnicity as they make up the two largest ethnic-linguistic minority populations who receive care in the practice and across the United States (United States Census Bureau, 2017). Eighty-six percent of participants reported AVS use; among those who reported AVS use, almost sixty-five percent found the document to be very useful. Overall, it was found that Chinese participants found the AVS to be less useful than Latinx patients (Nouri et al., 2020). From this study we can see trends in usage and usefulness of the AVS and how patients



with different ethnic backgrounds react to and understand the document. As a tool designed specifically for the purposes of aiding patients, it's critical to view high-points and disparities that the document can hold for each individual user with differing levels of health literacy.

Pavlik et al. conducted a qualitative survey and randomized trial testing information recall that involved 272 adult primary care patients; the average age of the group was 52 years old (Pavlik et al., 2014). Sixty-four percent of the trial group were recognized as having an adequate health literacy level. Average medication recall accuracy was fifty-three percent after two days and fifty-two percent after three weeks. Satisfaction with AVS content was high while recall of specific content categories was low (Pavlik et al., 2014). A study conducted the year earlier found that those with lower health literacy have poorer ability to recall information (McCarthy et al., 2012). It is also important to note that this study was conducted before the AVS's 2018 redesign. Information recall is an aspect of health literacy that needs to be considered when thinking about the AVS.

From both of the studies mentioned above, we can see correlation between age, ethnic background, health literacy and the AVS. It is important for content creators to recognize that while English is the most commonly used language in the United States, several other languages are prevalent in the country including Spanish, Italian, German, French, and Polish (United States Census Bureau, 2013). Also noteworthy is that in 2016, approximately nine percent of the United States population reported to the census that they do not have a firm grasp of the English Language (What Percentage of People in the U.S. Speak English?, 2020). Opinions about the AVS from those with different backgrounds are crucial to optimization of the document and

the improvement of health literacy. Technical communicators specialize in identifying and responding to the needs of diverse audiences.

### Health Literacy and Technical Communication

Although health literacy is often thought of as a health communication topic, it is crucial that technical communication experts be involved. Technical communication professionals can collaborate with interdisciplinary professionals such as healthcare providers and health communicators and help improve patient-centered language and practices across a multitude of media and document types and contribute to solving such problems as the health literacy crisis (Meloncon & Frost, 2015). Renguette came to similar conclusions when referencing patient-centered communication and care (2016).

It is absolutely imperative that information given by healthcare providers addresses the needs of those with low levels of health literacy. A tool that can help with these individuals and others that may suffer from lower levels of health literacy is plain language, which is a tool used to promote patient understanding and help combat low health literacy. In the next section, you'll learn about plain language and why its importance as a communication tool spans as high as the United States government.

### Plain Language

***I was sitting in the room with my doctor after discussing the MRI results. Being a student in English Literature at the time, I was able to keep up with the medical jargon through the first few terms. It wasn't until I showed a confused expression that my doctor snapped out of it and began using patient-centered language, again. An honest mistake, absolutely. A critical mistake, could be. Lucky for me, as an extrovert I'm usually pretty good***

***about asking questions when I have them, but there are many people who aren't like that. I'd try to make sure I was asking the right questions: "What does 'cruciate' mean?" or "What's the difference between an autograft, an allograft, and a synthetic graft?", but sometimes I'd get so distracted by the intimidating words that by the time I caught up, we'd be onto something else. It may just be the Minnesotan in me, but I wasn't trying to be rude and ask him to go over something he'd discussed again just because my mind was elsewhere.***

According to Graham and Brookey, most people with low literacy are very ashamed of it and therefore have become very good at hiding the problem (2008). Patients aren't communicating their confusion with their healthcare providers because they don't want to be viewed as unintelligent. The use of plain language combats this problem by decreasing the cognitive load of health-related communications, which assists in countering systematic inequity (Cheung, 2017). Plain Language is used to support patient-centered care, which has been on the rise since the National Institutes of Health found that its benefits include improved patient outcomes, improved patient satisfaction, and better job satisfaction for clinicians (Lewis et al., 2012).

The Plain Writing Act of 2010 defines plain language as writing that is clear, concise, well-organized, and follows other best practices appropriate to the subject or field and intended audience (What is plain language?). It is important to understand that plain language applies to more than just words; it involves many aspects of documents such as easy to read design features and logical organization (United States Government Publishing Office, 2008). The plain-language principles are not new, but with the plain-language approach, a technical communicator makes a conscious decision to use the strategies as an ethical obligation. The

overall goal is to ensure that most, if not all, users will understand information (Matveeva, Moosally, & Willerton, 2017). In fact, beyond government, industries and professional groups have recognized the value of serving their consumers through documents written in plain language (Matveeva, Moosally, & Willerton, 2017).

#### Plain Language and the After-Visit Summary

***Throughout my adventures in and out of the clinics, I always wanted to impress my doctors with the progress I had made; I was making progress at my PT appointments and rehabbing at home the best I could with what directions my AVS gave me. I wanted the best results to get back up and active as soon as possible. Although there were written instructions and undescriptive graphics for some exercises, I didn't understand what I was reading. The instructions weren't quite clear enough. There was always something I needed more clarification on. It was actually pretty inconvenient because I was still struggling to walk, so I would have to go to my room on crutches and get my laptop.***

Readability expert Mark Hochhauser has studied the language of medical consent forms and contends that truly informed consent is not possible if the language is too complex for patients to understand (Cheung, 2017). Similarly, in her Tedx talk, Fisher-Martins argued that people cannot be active, participatory citizens if they do not understand the documents that inform them of their rights and responsibilities (Cheung, 2017). While the AVS is not a medical consent form, it is another form of health-related document; if the language used is too complicated for users to understand, then plain language isn't being appropriately utilized. A 2017 randomized experiment conducted by Ancker et al. was done to determine whether

parental misinterpretations would be reduced by instructions that followed best practices for plain language.

The authors selected examples of dosing selections from AVSs in commercial electronic health records. Participants included a demographically diverse sample of 951 parents and adult caregivers with an average age of 36 years old— thirty-eight percent had less than a 4-year college education. Participants received comprehension questionnaires with either original AVS instructions or instructions revised to comply with federal and other sources of plain language. The revisions were associated with an eight percent increase in correct answers overall; health literacy and health numeracy were strong and independent predictors of comprehension (Ancker et al., 2017).

Ancker et al.'s study concluded that a relatively simple intervention of revising text was associated with a modest increase in understanding of medication instructions (2017). Along with that, the authors noted that revising EHR output to replace complex language with patient-centered language in an automated fashion is a potentially scalable solution that could reduce medication administration errors by parents (2017). In addition, Federman et al. stated in the conclusion of their evaluation of the redesigned AVS that improvements in the patient-centeredness of the AVS may improve its usefulness as a document to support self-management care (Federman et al., 2018, "Evaluation").

In recent news, to see how plain language and clear layout can improve the effectiveness, efficiency, and satisfaction of an AVS, AllianceChicago designed a new AVS to compare against the current EHR-generated AVS used by the community health centers within

the AllianceChicago network. The new AVS was tested through usability tests and semi-structured interviews with patients and their families. Interviews revealed that patients preferred the new version of the AVS to the current EHR-generated AVS (Sieferd, Mohanty, & Holden, 2019).

Although plain language was utilized within the redesigned AVS, it is clear that there are still areas where improvements need to be made. Understanding and optimizing PEMs is a route both technical communicators and healthcare providers can take to further improve the AVS.

#### Plain Language and Technical Communication

The goals of implementing plain language into layperson documents are similar to that of the technical communicator: producing clear and understandable language for the intended audience (reader). Matveeva, Moosally, and Willerton state that many technical communicators— and instructors of technical communication— use plain language principles whether they know it or not (2017). On another note, Garwood notes that plain language work is, unironically, far from simple; writers must account not only for problems in the text, but also for problems caused by what is left out— what is opaque for one is invisible to the other (2013).

Within plain language and technical communication, there is also the topic of ethics. The Society for Technical Communication recognizes six ethical principles which technical communicators should observe in professional activities: Legality, Honesty, Confidentiality, Quality, Fairness, and Professionalism (1998). Plain language offers communicators a

framework and foundation for carrying out their work while holding to the code of ethics (Matveeva, Moosally, & Willerton, 2017).

As with health literacy, when discussing plain language, we have to consider diversity within the US. In 2017, Jones and Williams investigated how plain language, examined through a social justice perspective, is implemented in mortgage documents and what the implications are for African American homebuyers (Jones & Williams, 2017). The authors argue for a broader understanding plain language guidelines in order to move beyond ethical action and to encompass inclusivity (Jones & Williams, 2017). Ultimately, the authors' takeaways included that adopting a human-centered approach, considering government recommendations as minimum standards, and addressing writing style and document design from a user's perspective are best practices for professional and technical communicators to support inclusivity (Jones & Williams, 2017).

Although mortgage documents differ from health-related documents, there are parallels between the two when it comes to user understanding amongst those with different backgrounds. The use of plain language is a step toward a human-centered approach.

### [A Plain Language Critique of My After-Visit Summary](#)

Below I have provided a few samples from an AVS that I received after a pre-surgery physical therapy appointment. Unfortunately, since it's been over three years since I received these documents, I no longer have the in-print copies containing graphics and other basic health information that was included. Shown are what I have been able to access through my EHR at the Mayo Clinic. Personal information has been blocked out in some images for privacy.

I will be assessing the information provided on this AVS for use of plain language. I have not been professionally evaluated for my level of health literacy. However, I did use the Agency for Healthcare Research and Quality's (AHRQ) Health Literacy Measurement Tool, the SAHL-E, to determine where my health literacy level lies. Although imperfect, the SAHL-E suggested that I have strong health literacy. Even so, I struggled with my AVS, so imagine what someone with a lower level of health literacy would experience. I will be referencing Gouge's (2017) work in patient discharge communication, Jones and Williams' (2017), and St.Amant's (2021) User Experience Design notes.

**Home exercise program:**

10/16/18: standing hip abd - standing on R kicking with left, hamstring sets - DR

10/15/2018: HEP to go for quad sets, heel slides with use of green Thera-Band and straight leg raises with brace intact RO

**GOALS:**

1. Patient will demonstrate left knee 0-120 degrees prior to ACL reconstruction in 2 weeks.
2. Patient will have a 40 or greater out of 80 on the lower extremity functional scale in 10 weeks to indicate an improvement in overall function.
3. Patient will demonstrate independent in gait using axillary crutches in 10 weeks.
4. Patient will demonstrate independent and safe gait up and down 10 steps in 10 weeks with use of 1 rail and 1 crutch

*Figure 1: After-Visit Summary notes regarding goals of treatment and at-home care rehabilitation exercises.*

In Figure 1 above, listed are the goals and at-home rehabilitation exercises that were set by my surgeon and physical therapist. As you can see, there are terms and acronyms that are not used commonly by the average layperson such as ABD, HEP, gait, and axillary; the at-home exercises are also non-specific— they say, “Kick”, I ask, “How high?” Medical jargon is not plain language. As previously stated, these AVS's were generated after the document was redesigned, which included the implementation of patient-centered (plain) language. With an adequate level of health literacy, am I supposed to be able to understand what these terms and acronyms mean?



**AFTER VISIT SUMMARY** Organization logo

**Drew M. Jordan** [Redacted]  
 10/15/2018 7:30 AM Department of Physical Medicine and Rehabilitation in Mankato, Minnesota 507-594-5965

**Today's Visit**  
 You saw Rhonda K Omtvedt, P.T. on Monday October 15, 2018. The following issue was addressed: Deficient Anterior Cruciate Ligament Knee Left.

**Reminder: Please bring a copy of these discharge instructions with you to your follow up appointment(s). Refer to your Patient Appointment Guide for your preparatory instructions and for your most up to date appointment information. If you fail to come prepared, your appointment may be rescheduled.**

**Additional Information**  
 Please give a copy of your list of medicines to your primary care provider. Update your list of medicines when your medicines or doses change. In case of an emergency, carry your list of medicines with you at all times. If you take other medicines not on this list, please call your primary care provider for instructions.

**Your Medication List** as of October 15, 2018 11:59 PM

**Always use your most recent med list.**

<b>aspirin</b> 325 mg tablet	Take 1 tablet (325 mg total) by mouth daily. Recommended to minimize risk of blood clot. Once completed, resume the usual dose of aspirin your primary provider may recommend.
[Redacted]	Take 1 tablet by mouth every 6 (six) hours as needed for pain for up to 10 days Indication: Prolonged Acute Pain/Traumatic Injury. S/p ACL reconstruction
[Redacted]	Take 1 tablet (7.5 mg total) by mouth daily.

Figure 2: After-Visit Summary main page on EHR— includes summary of visit, additional information, and medication list.

Figure 2 depicts the main AVS page I accessed through my EHR at Mayo Clinic. It is my opinion that this particular page utilizes plain language guidelines. Jones and Williams recommend the following design choices: different typefaces for different types of information, sans serif and appropriate typeface, visual cues to emphasize important text, white space, left justified/ragged right text, appropriate line length, and short paragraphs (2017). When comparing these guidelines to Figure 2, online version of this AVS checks every box.

Among those that Gouge (2017) states are the design principles for which scholars in health and medical communication advocate, Gouge (2017) recommends legible typography

and size, spaces between lines and letters that facilitate reading, and that medications are not listed more than once, nor are they crossed off. Figure 2 meets these guidelines.

However, where Figure 2 falls short of the advocated expectations is a matter of how much information is presented on the online version of the AVS, as well as when it is appropriate to use alphabetical order. According to Gouge, methods should be used for identifying, prioritizing, or otherwise drawing attention to the most critical medication, medications should be listed in order of importance, and the documents should be interactive (i.e. allowing patients to check off doses taken) (2017). Although the medication list is blocked out for privacy, I can tell you that the medication list is sorted by alphabetical order, and not in order of importance— notice the second listed medication needed to be taken every six hours while the others listed were only once daily.

As previously referenced, something noteworthy about the online version of this AVS is that this is all there is. Aside from a few random notes and a summary of how I was feeling that day, the amount of information is insufficient. Unlike the in-print copy, basic health information has been excluded, there aren't upcoming appointment dates listed, and the at-home rehabilitation graphics are missing, among other things. This information may be listed somewhere else on Mayo Clinic's patient portal, but not in this document, which is not exactly user-friendly. If a patient chooses to access their AVS online instead of receiving a paper copy, they'd have to search through multiple tabs of information to find content relevant to each particular appointment, as each portion is spread throughout the site. St.Amant quotes Meloncon (2017) in saying that effective healthcare is often a matter of usability and goes on to

explain that if individuals cannot effectively use something to achieve a healthcare objective, then successful care often cannot be provided (2021).

Gouge expresses that graphics, visuals, and images should be used to aid in comprehension (2017). As referred to earlier, the graphics that were included in the print version of my AVS, but that are absent from the online version. From what I can remember, they were black, poorly drawn outlines of a 2-dimensional human figure in certain exercise positions. Sometimes these images would include arrows to indicate which limb should be stretched which way, and sometimes they'd be accompanied by very short descriptions of the exercise, "Bend knee to 15°". As mentioned previously, I found these graphics to be problematic and often had to search online how to do the exercise. This is a clear example of where the AVS can be improved both online and in print. The print version's graphics were poor quality, but at least they were there for guidance— the online version doesn't include the graphics at all.

Experts agree that visuals are helpful in promoting health literacy (Osborne, 2006) and assist in decreasing cognitive load (Roy, 2008). I can't help but think of how beneficial it would've been to be able to go to the online version of my AVS to see clearer depictions of the exercises I was supposed to be doing. I also think that this highlights an area that could completely change the online AVS for the better— including actual photos and educational videos of how the exercises are supposed to be done for patient reference. Although just a suggestion, I believe including these additions to the online AVS could promote a change in PEMs and where they can be further used.

After examination of Figures 1 and 2, I have concluded that the use of plain language and design principles highlighted by Gouge (2017), as well as Jones and Williams (2017) are equally utilized and underutilized in the online portrayal of this AVS. Clear and hierarchical typography is used throughout; however, medications are not listed in order of importance, and visuals are nonexistent. I regret that I did not save any of the in-print AVS's I received, even for a keepsake; I feel that this evaluation would've been more interesting and further in-depth if I had kept one.

## Conclusion

***Even though I had a positive experience with my doctor and clinic, the AVS represents one way in which my experience could have been even better. I shared my experience to give a first-hand perspective with what I went through with the AVSs that were provided to me pre- and post-surgery. Since then, my knee has made a full recovery and I have been able to return to everyday activities and sports.***

In conclusion, the AVS is a document that can be improved upon. Although redesigned in 2018, there are areas of technical communication and health communication that can be further researched and implemented to make the document the best it can be for patients and healthcare providers. As a PEM, the AVS could benefit from a more patient-centered approach (Salmon et al., 2016), and with that, aid in the health literacy epidemic (Graham & Brookey, 2008). Health literacy needs to be taken into account when thinking about the AVS; patients cannot be active participants in their healthcare if they don't understand the information being provided to them. The AVS can be used as a tool to improve health literacy, as well. Influenced by the Plain Writing Act of 2010, plain language was utilized in the AVS's redesign, yet there are

still areas in which improvements can be made. I urge technical communication experts to take another look at the AVS and ask, “What’s next?”

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