Development and Preliminary Evaluation of a Clinical Decision Support Tool for Intimate Partner Violence Screening Among Women Veterans

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Submitted to: JMIR Formative Research
on: February 22, 2024

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Abstract

Background: Women veterans, compared to civilian women, are especially at risk of experiencing intimate partner violence (IPV), pointing to the critical need for IPV screening and intervention in the Veterans Health Administration.

Objective: To address IPV screening implementation barriers (e.g., providers' discomfort addressing IPV and making decisions about the appropriate type or level of intervention), this study developed and tested a novel IPV clinical decision support (CDS) tool for providers in the Women's Health Clinic (WHC), a primary care clinic within the Veterans Affairs Palo Alto Heath Care System. This tool provides intelligent, evidence-based, step-by-step guidance on how to conduct IPV screening and intervention according to patient factors.

Methods: Informed by existing CDS development frameworks, developing the IPV CDS tool prototype involved six steps. We then obtained preliminary provider feedback on user experience and clinical utility of the CDS tool by administering the System Usability Scale (SUS) and conducting semi-structured interviews with six WHC providers. SUS results were examined using descriptive statistics. SUS scores above 68 demonstrate above average tool usability. Interviews were analyzed using rapid qualitative analysis to extract actionable feedback to inform design updates and improvements.

Results: This study includes a detailed description of the IPV CDS tool. Providers indicated good tool usability (SUS score: M = 77.5, SD = 12.75). They found the tool helpful and needed in their practice, and emphasized that it increased their confidence in managing patients reporting IPV. However, providers expressed concerns regarding the tool's length/workflow integration, flexibility, and specificity of information.

Conclusions: Provider feedback on the IPV CDS tool is encouraging and will be used to improve the tool. This study offers an example of an IPV CDS tool that clinics can adapt to enhance the quality and efficiency of their IPV screening and intervention process.

(JMIR Preprints 22/02/2024:57633)
DOI: https://doi.org/10.2196/preprints.57633

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Running Head: IPV CLINICAL DECISION SUPPORT TOOL

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Keywords: intimate partner violence, clinical decision support, intimate partner violence screening, women veterans

Introduction

Intimate partner violence (IPV), defined as physical or sexual violence, stalking, psychological aggression, or coercion by an intimate partner,[1] is a serious public health issue that disproportionately affects women. In the United States, more than one in three women have experienced IPV in their lifetime.[2] Compared to men, women are more likely to suffer from negative IPV-related outcomes, such as physical injury, fear, and posttraumatic stress disorder.[1,3] Women veterans, compared to civilian women, are especially at risk of experiencing IPV, with up to 60% of women veterans in relationships reporting IPV victimization.[4,5]

To address the increased IPV risk for women veterans and in line with current recommendations by the United States Preventative Services Task Force,[6] in 2014 the Veterans Health Administration (VHA) issued a national directive recommending IPV screening and intervention across VHA facilities nationwide.[7] As part of this rollout, the Women's Health Clinic (WHC), a primary care clinic at the Veterans Affairs Palo Alto Heath Care System (VAPAHCS), began piloting a paper-based IPV screening and intervention protocol, but preliminary evaluations revealed significant implementation barriers. Barriers included providers' inadequate IPV training, competing demands, time constraints, discomfort addressing IPV and making decisions about the appropriate type or level of intervention. These findings align with those of a larger qualitative study examining the implementation of IPV screening and intervention in women's health primary care clinics across 11 VHA Medical Centers nationwide.[8] Such barriers are understandable given that providers screening for IPV are taxed with making complex decisions that require navigating varying risk levels associated with differing IPV interventions depending on the patient's circumstances. Providers must weigh a number of factors including patients' mental and physical health, characteristics of the abuse and of the perpetrator, lethality

risk due to IPV, and family and economic circumstances, to deliver care that minimizes risk of danger for the patient.

Provider-related barriers regarding IPV screening and intervention may be addressed through the use of clinical decision support (CDS). CDS tools are computer-based systems that guide individuals through a decision-making process by providing intelligently filtered information at appropriate times in the clinical workflow for the purpose of increasing healthcare quality and efficiency.[9] They can incorporate computerized alerts, clinical guidelines, patient-specific information and other contextual factors, documentation templates, and summary reports, among others.[9] CDS has been highly effective in the treatment of medical conditions, such as reducing cardiovascular risk in patients with Type 2 diabetes,[9] but the application of CDS to IPV screening and intervention is novel.

CDS, in the IPV context, can optimize the clinical decision-making process by efficiently guiding providers through IPV assessment, documentation, and intervention. Results from Kaiser Permanente, one of the first integrated health care systems to adopt a CDS approach to IPV screening and assess its impact on clinical care, have been promising.[10] They show that integration of a clinical reminder in the electronic health record to screen for IPV coupled with prompts on questions to ask as well as “smart links” to IPV materials (e.g., safety planning tips, IPV community resources) was associated with a significant increase in mental health referrals.[10] However, more sophisticated and interactive IPV CDS tools that can offer providers intelligent step-by-step guidance on how to conduct IPV screening and intervention according to patient factors have yet to be developed. For example, existing tools fail to differentiate between women reporting high levels of physical violence who may need extensive resources and a safety plan, or lower levels of psychological aggression (e.g., yelling) who may not need as intensive

resources. A more advanced step-by-step IPV CDS tool can enhance the quality of IPV screening and intervention by being sensitive to patient factors and facilitate the decision-making process for providers.

This study sought to describe 1) the development of a novel, interactive step-by-step IPV CDS tool prototype for providers in the VAPAHCS WHC and 2) preliminary provider feedback on user experience and clinical utility of the CDS tool. This study provides an example of the process used to develop an interactive step-by-step IPV CDS tool and how such a tool may be used to address IPV screening and intervention implementation barriers in a primary care clinic. Interactive, step-by-step IPV CDS has yet to be applied in the VHA and other health care systems more broadly, and holds considerable promise for ensuring efficient implementation of best IPV care practices and, consequently, improving the value, accessibility, and quality of healthcare delivered to women veterans and civilians.

Methods

The study's process for developing and testing the IPV CDS tool was informed by existing CDS development frameworks, which generally include scope and design, development of a prototype, testing of the prototype with relevant individuals in an iterative process, testing of the prototype under real world conditions, and final development of the tool.[11] We adapted this process to fit the IPV context and focus here only on the initial three development and testing phases.

Aim 1: Develop the IPV CDS Tool Prototype

Step 1: Identify Scope of the IPV CDS Tool

Using observations and informal evaluations, we identified barriers to providing IPV care (e.g., provider discomfort addressing IPV and making decisions about the appropriate type or

level of intervention). Based on this information, we determined the goal (to develop a step-by-step, interactive IPV CDS tool), the target users (VAPAHCS WHC providers), and the scope of the tool (IPV screening and intervention).

Step 2: Literature Review and Consultation with IPV Experts

We conducted a literature review to identify current IPV care best practices and clinical recommendations. We sought literature related to IPV screening (e.g., who, when, and how to screen) and interventions (e.g., types of interventions, how to communicate with an individual experiencing IPV). The focus was on brief interventions that may be conducted by health care providers in primary care. We specifically examined the literature for recommendations on which interventions may be most effective and appropriate according to the type (e.g., physical violence, psychological aggression) and level (e.g., high vs. low) of IPV. For areas in which there was not a clear recommendation given a lack of evidence, we consulted with IPV experts, including health care workers (i.e., clinical psychologists, women's health primary care providers, social workers) with IPV expertise, IPV researchers, and VA's IPV Assistance Program (IPVAP) coordinators (i.e., staff dedicated to assisting with VHA IPV screening and prevention services).

Step 3: Incorporate IPV-related VHA and Clinic Resources

We collected IPV-related VHA and VAPAHCS WHC clinic resources that would allow us to tailor the IPV CDS tool to the VAPAHCS WHC setting (e.g., IPV patient brochures already used by the clinic, lists of phone numbers for local police stations, documents to complete mandated state reporting for IPV, elderly abuse, and child abuse). We also incorporated VHA's national IPV recommendations (e.g., use of the Extended - Hurt, Insult, Threaten, Scream IPV screening tool (E-HITS)[12] and materials (e.g., example safety plan template for IPV

victimization).

Step 4: Identify CDS Components

We used the Framework for Classifying Decision Support Systems[13] to identify core components of the IPV CDS tool and determine its format, structure, and features. This framework outlines 24 axes as part of the CDS workflow, each of which we considered for potential relevance. For example, we determined how to deliver IPV-related information to providers (e.g., online), the reasoning method used to present information (e.g., built-in rule-based algorithms), the extent to which providers can interact with the tool (e.g., pop-down menus, fill in the blank), and the extent to which the tool can be customized for each patient (e.g., tool shows safety planning information for patients reporting higher levels of IPV but not for those reporting lower levels of IPV and no safety concerns).

Step 5: Tool Design

Using information collected in Steps 1-4, we designed the prototype, using Qualtrics, an online survey platform.[14] Future work will focus on adapting the IPV CDS tool to the electronic medical record system.

Step 6: Initial Revisions

After developing the IPV CDS tool prototype, we obtained initial informal feedback from IPV experts (i.e., health care workers with IPV expertise, IPV researchers, and IPVAP coordinators). The IPV CDS tool was revised according to this initial feedback, at which point the tool was ready for preliminary testing.

Aim 2: Obtain Preliminary Provider Feedback on the IPV CDS Tool

Recruitment

Consistent with purposeful criterion sampling,[15] the sampling pool consisted of all

primary care providers involved in IPV screening at the VAPAHCS WHC. Five of 11 invited providers declined to participate or did not respond to recruitment efforts. We recruited providers until data saturation was reached, resulting in a total sample of six VAPAHCS WHC primary care providers. This quality improvement project was determined to be exempt from IRB review.

Approach

Providers participated in a 30-60 minute interview using video-conferencing software and a semi-structured interview guide based on the Health IT Usability Evaluation Model (Health-ITUEM).[16] The interview asked providers to engage in different tasks (e.g., complete a safety plan using the tool) and answer questions related to usability and implementation (example interview questions in Appendix). Following the interview, providers were asked to complete the System Usability Scale (SUS),[17] a 10-item standardized measure for assessing usability (e.g., I felt very confident using the tool—*strongly disagree* (1) to *strongly agree* (5)). SUS scores above 68 demonstrate above average usability. Interviews were audio-recorded and transcribed.

Statistical Analysis

Interview data were analyzed using rapid qualitative analysis[18,19] to extract actionable feedback to inform design updates and improvements. First, two authors (FR, JW) used a template to summarize each transcript to identify patterns and illustrative quotes according to the following domains: design and layout (appearance); information and content (specificity, amount, and quality of information); features and functionality (technical capability); real world application (use of the tool in everyday practice); implementation (use of the tool in own practice and clinic); and overall impressions. The authors then met to review their summaries of provider feedback across domains and resolve discrepancies. Next, a matrix was created from these summaries, displaying subject domains and the corresponding responses and quotes from each

participant. The matrix was used to create summaries of each domain that included recurring patterns, specific recommendations, and quotes.

Results

Aim 1: The IPV CDS Tool

The IPV CDS prototype is a computerized tool which WHC providers could access with the appropriate link. The tool has two main sections: 1) assessment and 2) intervention. The assessment section includes a validated IPV screening tool (i.e., the E-HITS per VHA guidelines) with follow-up questions inquiring about risk of lethality due to IPV (also per VHA guidelines) to be administered to each patient during the health encounter. Information provided within the assessment section determines the information displayed in the intervention section by use of a decision tree. See Figure 1 for an illustration of the decision tree embedded within the IPV CDS tool. Overall, depending on the information provided within the assessment section, patients are categorized as having a negative or positive IPV screen. For patients who have a negative IPV screen, the IPV CDS tool recommends that providers provide universal education regarding healthy relationships as is recommended in the literature.[20] The tool offers a script and links to handouts that providers can use to engage patients in this discussion.

Patients who have a positive IPV screen are categorized into one of three categories based on the patient's reports of IPV in the past year: 1) verbal/psychological abuse only and low current risk of danger due to IPV, 2) physical or sexual violence and low current risk of danger due to IPV, and 3) any type of IPV and high current risk of danger due to IPV. Before displaying information regarding the appropriate intervention, the tool shows summaries of the IPV assessment and the recommended intervention. The IPV CDS tool, then, displays separate screens for each step in the intervention process. These steps differ according to the IPV and risk

category. For example, for patients in Category 1, the tool recommends that providers, with the patient's permission, provide tailored IPV psychoeducation, assess the health impact of IPV, hand the patient a pocket card with local IPV-related resources, schedule a follow-up appointment, and refer the patient to the IPVAP coordinator. Additionally, providers are advised to ask for methods of safe contact and consent to document IPV-related information in the electronic health record. Finally, the tool displays a tailored summary of the assessment results and intervention components that the provider can copy and paste into their clinical note. For patients in Category 2, the tool recommends an additional step for providers to inform patients of an online safety planning tool (MyPlan).[21] For patients in Category 3, the tool recommends a second additional step by providing instructions on how to complete a safety plan with the patient or assisting the patient in calling the Domestic Violence Hotline. Across all categories, the tool provides links to important documents (e.g., safety plan template, state reporting forms) and tailored example scripts incorporating trauma-sensitive language that providers can use to communicate with patients.

Aim 2: Provider Feedback on the IPV CDS Tool

All providers interviewed were female and practicing women's health physicians. Of providers who provided demographic information (n=5 of 6), three self-identified as Asian and two as White. Similarly, three providers were between the ages of 30-39 and two were 60-69. Four providers indicated five or more years of medical experience. The mean SUS score across providers was 77.5 (SD = 12.75), suggesting good tool usability.

Next, we describe provider feedback on six core domains for assessing the preliminary tool. Table 1 shows sample quotations related to each domain.

Design and Layout

User friendly. Providers expressed that the tool was user-friendly due to its predictable presentation and the reasonable amount of information on each screen.

Sequence of steps. Some providers thought the order in which steps were presented was logical but others made recommendations about how to improve the order of steps, e.g., injury reporting should come before safety planning.

Length. Providers indicated that the tool had many steps, which would take significant time to complete. Solutions suggested were including a navigation menu that lets steps be skipped, simplifying and reducing the number of steps, and including ways to opt out of steps. Another suggestion was to enable parts of the content to be hidden and expanded.

Information and content

Level of detail. Providers liked the tool's detailed information (e.g., example scripts for communicating risk of harm to patient, phone numbers and links to safety plan, injury reporting form) and thought it could serve as a resource where information is stored and organized. Providers thought the tool would be particularly helpful for providers who are less experienced with IPV care or may facilitate disseminating IPV-related information to other providers.

Need for additional information. Providers requested adding additional information, such as more details about injury, police, and child abuse reporting. Providers requested more tailored information that would facilitate the screening and intervention process (e.g., list of domestic violence shelters in the area).

Features and Functionality

Strengths and weaknesses of features. Providers liked various features of the tool, such as the ticker at the top that indicates how much of the process they have completed or the ability to copy and paste patient disposition from the tool into a note. However, participants also

indicated features to strengthen the tool, such as populating the tool along the way to decrease documentation at the end or having a menu to access specific information.

Real World Application

Need for tool. Providers liked the IPV CDS tool and found it clinically useful because it could help address anxiety related to not knowing how to appropriately conduct IPV screening and intervention. Providers indicated that the IPV CDS tool would help them provide IPV care, especially providers less familiar with IPV screening and intervention. Some suggested it could serve as a training tool for new providers. Providers particularly found the example scripts in the tool helpful for discussing IPV with patients. When a patient is seeking help for a non-IPV related issue, providers thought the tool could be too time consuming and leave little time to address other healthcare problems; however, providers felt it was important to prioritize IPV.

Implementation

Feasibility. Overall, providers thought implementation of the IPV CDS tool was feasible because it provides all of the necessary information to complete IPV screening and intervention. One recommendation to ensure successful implementation was to appoint a champion to teach staff about the tool.

Providers stated that primary care providers, social workers and psychologists would all want the IPV CDS tool, though each would use it differently, and some may not need all aspects of the tool. Most thought the tool should be implemented in primary care, while ensuring that other non-primary care providers are aware of information provided in the tool.

Competing demands. Most providers said time to complete the tool was the main barrier to implementing the tool. Providers have to complete screenings for multiple conditions, so agenda setting and prioritizing can become a challenge.

Overall Impression

Providers liked the IPV CDS tool, found it helpful for addressing patients reporting IPV, and thought it increased their confidence in conducting IPV screening and intervention. The main drawback was the length of the tool, and providers recommended streamlining the content to accommodate the time constraints of clinic visits.

Discussion

This study sought to develop a novel and interactive, step-by-step CDS tool for IPV screening and intervention to be implemented in a VHA women's primary care clinic. Findings indicate that the IPV CDS tool shows promise for enhancing IPV screening and intervention. Providers found the tool helpful and needed in their practice, and stated that it would increase their confidence in managing patients reporting IPV. These findings suggest that IPV CDS tools developed to function like the one described here can effectively increase the quality of IPV screening and intervention in primary care and may help improve IPV-related outcomes (e.g., increase use of mental health treatment, reduce IPV victimization).

However, findings also highlighted several important enhancements that must be considered in future tool revisions or when developing similar IPV CDS tools so that they are well received by providers. For instance, one issue is designing an IPV CDS tool that is comprehensive and informative yet sufficiently concise to fit the clinic workflow. When designing the current IPV CDS tool, we incorporated IPV care practices recommended by the literature and experts. Yet, many providers indicated that the tool, when encountering high risk patients, was too time-consuming, leaving little time to address any other needs. On one hand, when CDS tools disrupt the clinic workflow, providers may be less likely to use them or more likely to override the tool recommendations, diminishing the tool's clinical value.[22] On the other

hand, while it is critical to ensure that information displayed within the tool is concise, removing or skipping certain screening or intervention practices may negatively impact the well-being and safety of the patient. Therefore, it is essential, when designing IPV CDS tools, to find solutions that meet the needs of providers but also do not compromise patient health. Solutions include: 1) keeping only the tool components that are most critical to patient safety or 2) conducting rigorous and iterative testing of the tool, improving the tool until it meets the demands of providers, patients, and the clinic.[22] This helps maximize the tool's adoption by ensuring that it is feasible, acceptable to both providers and patients, and can be well integrated into the clinic workflow.

An equally important issue is designing an IPV CDS tool that is flexible (i.e., there is flexibility within the tool and with how the tool is used). CDS tools that are more flexible can help providers feel greater autonomy over their practice, rather than being told what to do, and thereby increases adoption of the tool.[23] When considering flexibility within the tool, it is critical to determine features or functions that help providers flexibly navigate the tool and have easy access to important information. For instance, providers in this study requested a menu they could use to navigate the IPV CDS tool.

When considering flexibility with how the tool is used, it is critical to determine the intended purposes of the tool. For example, providers in this study questioned whether the IPV CDS tool could be used for additional purposes including as an educational tool for less experienced providers and a check list for more experienced providers. IPV CDS tools that serve multiple purposes may result in greater uptake and impact but may be more challenging to design, as they can include more sophisticated technological features and must meet the demands of differing target audiences and contexts. One solution is to consult with providers prior to

designing the tool to determine which features and uses of the tool may be most helpful in improving IPV care.

Even when IPV CDS tools are flexible and fit the clinic workflow, it is important that they be specific. Providers in this study indicated wanting more specific and tailored information in the tool (e.g., list of local shelters). While including this information can help facilitate and increase efficiency of the IPV care process, IPV CDS tools that have highly specific and tailored information may not be generalizable to other settings and may need frequent updates when information changes. To help address this, it may be necessary to conduct regular monitoring of the tool to ensure that information is still accurate.[22]

The aforementioned provider concerns will be used to inform the next iteration and testing of the IPV CDS tool. IPV CDS tools that address these concerns have greater adoption potential and, therefore, increased capacity to positively impact IPV care. Despite room for improvement, our findings suggest an important need for our IPV CDS tool to improve the quality of IPV care.

Limitations

This study had several limitations which point to areas of future research. Our findings are based on only women's health physicians and one clinic. While this clinic provided us with an ideal setting from which to obtain feedback from providers, future studies should gather data from other settings and differing providers who also conduct IPV care. As our focus was only on usability of the IPV CDS tool, additional evaluation is needed examining potential improvements in clinical outcomes, such as increased IPV screening by providers and decreased IPV victimization among patients. We did not interview patients, thus, research is also needed examining patient perspectives on the acceptability of the IPV CDS tool.

Implications for Practice and/or Policy

This study offers an example of how other clinics and healthcare systems can adapt the current interactive, step-by-step IPV CDS tool to address the needs of their providers and ultimately enhance the quality and efficiency of their IPV screening and intervention process. This study also highlights various challenges that may emerge when creating such tools regardless of the setting and offers solutions to address these challenges. Findings demonstrate that interactive, step-by-step CDS tools for IPV screening and intervention are promising. Such tools have the potential to transform IPV screening and intervention in primary care by standardizing the process, increasing the frequency at which it is performed, and guaranteeing that patients experiencing IPV are receiving the recommended care to improve outcomes. However, additional research is needed to further determine their clinical utility.

Conclusions

We developed a novel clinical decision tool to assist women's health care providers with IPV screening and intervention. Initial user experiences are encouraging. Widespread adoption of similar decision tools may help streamline IPV screening and intervention processes and increase use of best practices. When screening or best practices are ignored, even by well-intentioned providers, patients experiencing IPV are put at increased risk of harm. In contrast, when screening and best practices are implemented, as facilitated by tools like the one described here, patients have better health outcomes.

Acknowledgements

Contributors: We thank Dr. Meenadchi Chelvakumar at Stanford University for her contribution to this work.

Funders: This work was funded by the U.S. Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development, Health Services Research and Development (HSR&D) Service and supported in part by the VA Office of Academic Affiliations. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States Government.

Conflict of Interest

The authors declare that they do not have a conflict of interest.

Abbreviations

E-HITS: Extended - Hurt, Insult, Threaten, Scream

Health-ITUEM: Health IT Usability Evaluation Model

IPV: Intimate partner violence

IPVAP: Intimate Partner Violence Assistance Program

IRB: Institutional Review Board

SUS: System Usability Scale

VAPAHCS: Veterans Affairs Palo Alto Health Care System

VHA: Veterans Health Administration

WHC: Women’s Health Clinic

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Table 1. Provider feedback on the IPV CDS tool

Themes	Sample Quotations
Design and Layout	
User friendly	"I think the design is really user-friendly. Like, it's very easy to kind of go through each of the screens, and the response to each question follows in a very methodical manner. There's no part of it where I'm like—Oh, what's going on? Why am I on this screen? … The amount of information on each page is very reasonable, too." [Provider 002]
Sequence of steps	"…because you can't give a safety plan without actually knowing what's going on physically with the patient, because the plan will then depend upon what you find." [Provider 005]
Length	"If there was a way to pare this down to less screens. I think it's really, really good information." [Provider 002] "You know those PowerPoints, you begin with a bullet or two, people digest that, then you click down on other additional information. So it's not too much information right up front." [Provider 005]
Information and Content	
Level of detail	"This is really nice for continuing knowledge of providers to know that these are the forms and these are the phone numbers, so that when, just between colleagues, as these cases come up especially in the VA, they can kind of informally disseminate that knowledge. And it's good learning for the colleagues, for this to be embedded in their heads, since they're going to be doing it at every wellness visit." [Provider 002]
Need for additional information	"…we could populate our own shelters in here, because I will guarantee you, primary care doesn't know where those shelters are." [Provider 003]
Features and Functionality	
Strengths and weaknesses of features	"…it's nice that you have the ticker at the top that kind of lets providers know how far into the process they are." [Provider 002]

	"I think filling the tool along the way is best. Like, anything to decrease the amount of documentation we have to do after the fact, I think is best. And if it happens as we go on, like that's the most efficient way." [Provider 001]
Real World Application	
Need for tool	"If somebody uses the tool and [a patient] screens positive, especially with the high-risk questions, it's basically going to be very, very time consuming to do this follow up, and it probably will be the bulk of the visit. That is not a bad thing, because if somebody is having that level of IPV, I don't really want to talk to them about their blood pressure. I want to talk to them about this." [Provider 006] "As a screening tool, I think it's a bit lengthy and a bit wordy, especially if you're thinking of somebody who doesn't have any exposure to this, maybe only has learned about IPV once or twice in medical school and maybe once or twice in residency. But I think it's really, really good for training, for providers to sit down and be able to read through this in a relaxed setting." [Provider 002]
Implementation	
Feasibility	"This takes over the visit and it can put a little wrench in your schedule, but it's no different from kind of the other times that that happens in primary care…And a tool like this is really great, because it lays it all out for you." [Provider 002] "I think the physicians will be using a lot of it. I think a lot of us really buy in to screening, but don't always feel super comfortable with the next steps, if somebody discloses, so I think this would be super helpful." [Provider 006] "[Providers who are not PCPs] would want to know what information is in the tool, so that it aligns with how they talk to the patient as well, but they will not be doing the screening themselves." [Provider 001]

Competing demands	"There's a lot of screening for all kinds of primary care things…And it's really hard to address all of those things in one appointment [especially] if it's for some more acute thing." [Provider 001]
Overall Impression	
	"I think it would make [my confidence] go up, for sure, in a much more concrete way. I think I had ideas before about what I can do in the clinic, but this tool gives me concrete steps of like calling the hotline, and some of the things that I would have to search for online that I wouldn't be able to find quickly, are all in this tool." [Provider 001]

IPV CLINICAL DECISION SUPPORT TOOL

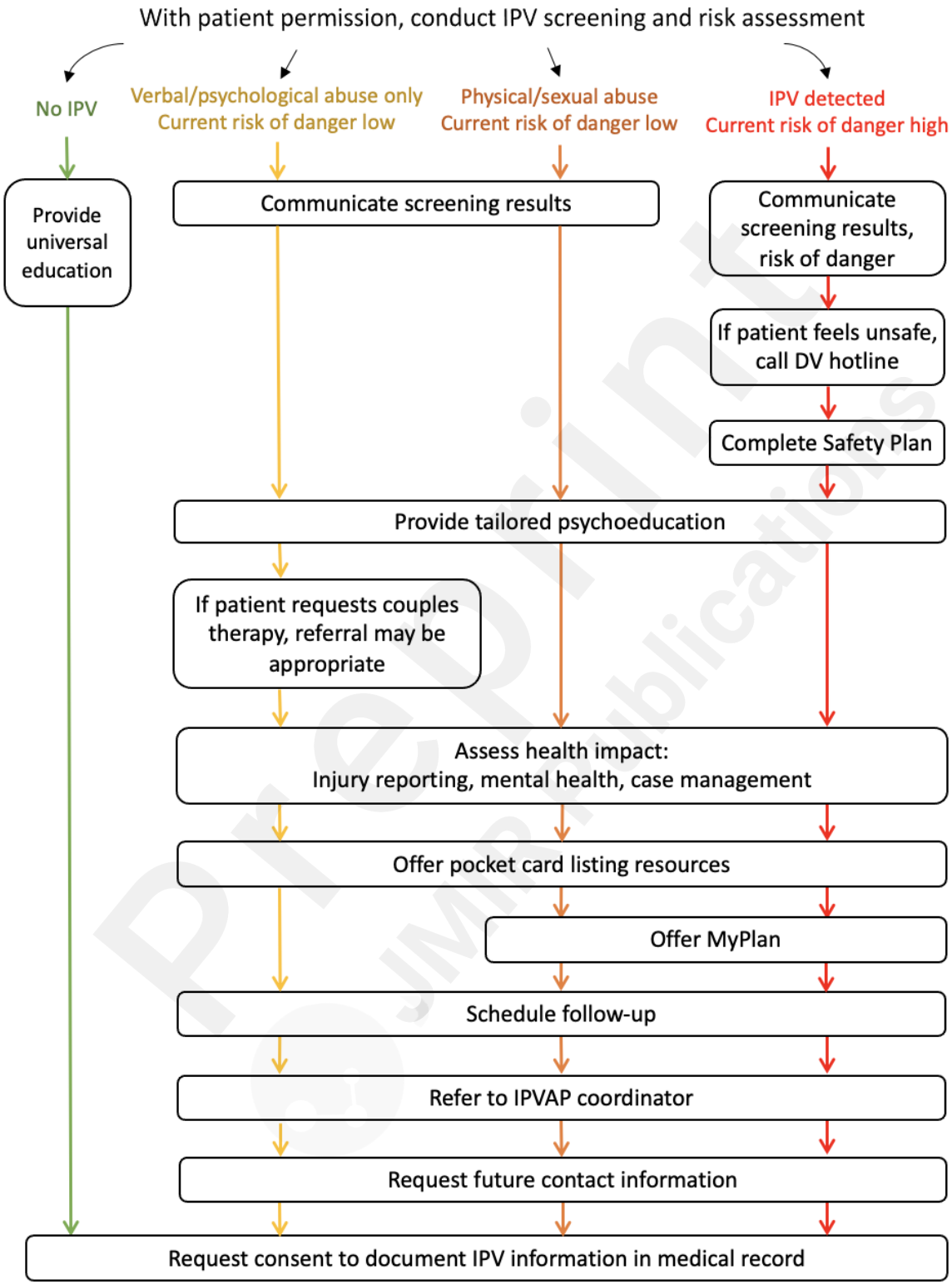

Figure 1. Decision tree embedded within the IPV CDS tool