Lessons learned: key implementer perspectives on successful introduction and administration of electronic tablet-based patient-reported outcome (PRO) measures in routine HIV care

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AIMS

Mechanisms of successful ePRO implementation are relatively understudied. We sought to learn about the successes and challenges of integrating electronic patient-reported outcome measures (ePROs) into HIV clinical care in order to inform development of a PRO Integration Toolkit. We present lessons learned from five key implementers regarding successful ePRO implementation in routine HIV care.

METHODS

We conducted semi-structured 1:1 phone interviews with key PRO implementers directly involved in the introduction and ongoing administration of PRO measures at three geographically diverse U.S. HIV primary care clinics within the Centers for AIDS Research Network of Integrated Clinical Systems (CNICS), in which >70,000 completed ePROs assessments have been completed. Sites were Fenway Community Health (Boston, MA) University of Alabama-Birmingham 1917 Clinic, and University of Washington's Madison Clinic (Seattle, WA). Interview topics included role in ePRO implementation, process steps, challenges and lessons learned and considerations for new clinics considering ePRO implementation. We transcribed audio-recorded interviews and identified themes as well as stages in successful PRO implementation.

RESULTS

Key stakeholders (n=5) included two clinic directors/physicians, an Information Technology director, and two PRO project managers. Essential stages of successful PRO implementation were:

1) Secure broad stakeholder buy-in at the outset
- including clinic leadership, providers, administrators, and relevant support staff

2) Solicit provider input
- to select most clinically relevant PRO domains/instruments

3) Demonstrate value to stakeholders
- In evidence-based terms of:
  - a) improved identification of symptoms/behaviors
  - b) potential time saved (e.g., by prioritizing patient concerns, replacement of paper forms)
  - c) health outcomes
  - d) potential to integrate PRO data to automatically populate electronic health records (EHRs)
  - e) improved ability to report on health metrics to satisfy regulatory requirements

4) identify staff to lead PRO implementation
- oversee implementation
- monitor patient progress during administration
- address ongoing support needs

5) create risk protocol
- to address high-risk symptoms/behaviors, such as suicidal ideation

6) design well-tailored feedback
- for ease of provider use, e.g., with data viewable across multiple time points.

7) train providers and staff
- technical training for staff administering assessment
- risk protocol training
- score interpretation for providers

8) allot time/space for administering PROs
- build time into visit for PROs to minimize clinic flow impact
- private space needed especially if questions are of a sensitive/private nature

9) carefully pilot PROs prior to launch
- to assess time burden, flow impact, ease of device use, technical needs

10) promptly resolve technical problems
- device, Internet connection, PRO platform

RESULTS cont.

Providers valued the potential for closer integration of PROs into EHRs, including the ability to query PRO data for clinical purposes.

Key Quotes

Stage	Quote
On stakeholder buy-in	So, for me the lessons learned were definitely having the buy-in part of senior leadership from the beginning. Project manager, FCH. …the thing that's going to be important to clinicians is "don't make my day more complicated, it's already ridiculously complicated. So, if it's going to make things go better, I'm all for it." Physician, UW
On soliciting provider input	There are things at each specialty that are very important and that in turn might not be important to me. You have a conversation about domains…what do you want to know about your patients that would allow you to do a better job? Physician, UAB
On demonstrating value to stakeholders (providers)	People don't tell their provider they are going to commit suicide because of that relationship [with them], that social desirability bond. I had this happen to me in 2001 and I've never forgot it. This checks everybody periodically and I can't tell you how many providers are surprised when they [find out via PROs], your patient is suicidal …we've had providers say that's ludicrous, I just spoke to them and they're fine. We've had that provider walk into the room and ask the patient, have the patient say "no, I'm having a terrible time, I just didn't want to tell you because I didn't want to upset you." When this happens there is a fundamental change for that clinician, that clinician is now a believer…you did something that helped preserve their patient's life. Physician, UAB
On demonstrating value to stakeholders (patients)	A value proposition to the [patient] is" listen, I am going to collect information from you that is going to allow me to do a better job, and rather than me spending a bunch of time in a visit asking you questions to get this information, if you fill this information while you are waiting for me, I will be able to use that time to connect you to services and to provide care for the issues that come up." That's a value proposition for [the patient]. Physician, UAB
On piloting	When I first started with [PROs] here, we only had 4 different [PRO] assessments and now we have 10, so it was very much a graduated response. First testing to see what works out… piloting is very important and then from there being able to make changes and tweaks to the program as needed. Project manager, FCH.
On delivery of PRO results	[PROs] help the physician cover a lot of topics that they ordinarily don't have time to review…the physician can review, this person is having sex with 20 other people and they are not taking their HIV medications and they are using a lot of methamphetamine, you're like, "oh, great, they might have told me that." I'll walk right into the room and you've got that information right in hand. So, that's the kind of value that the PROs have to have, they have to be onsite, they have to be immediately delivered, and if they can be delivered in the context of a note…if there's a way to import that data right into the note so that it makes documentation easier, not harder, then you've got everything. Physician, UW

CONCLUSIONS

Successful integration of PROs in primary HIV care requires key stakeholder buy-in through clear demonstration of value added and involvement in domain selection, PRO feedback development, risk protocol development, and piloting. Designation of key personnel to train new staff and address issues at the patient, flow, and IT levels are also critical to successful implementation.

ACKNOWLEDGMENTS

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  Castellino S, Moss L, Wagner D, et al. Metabolism, excretion, and mass balance of the HIV-1 integrase inhibitor dolutegravir in humans. *Antimicrob Agents Chemother.* 2013;57(8):3536-3546.

  Walmsley S, Antela A, Clumeck N, et al. Dolutegravir (DTG; S/GSK1349572) plus abacavir/lamivudine once daily statistically superior to tenofovir/emtricitabine/efavirenz: 48-week results from SINGLE (ING114467). Abstract H-556b. Presented at: 52nd Interscience Conference on Antimicrobial Agents and Chemotherapy; September 9-12, 2012; San Francisco, CA.

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