Youth Providers 2.0 Initiative

Formative Research Report: Key Informant Interview and Web-Based Survey

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EXECUTIVE SUMMARY

In 2013, the Society for Adolescent Health and Medicine (SAHM) and the Heilbrunn Department of Population and Family Health at Columbia University launched the Youth Providers 2.0 (YP2.0) initiative, with support from the Agency for Healthcare Research and Quality. YP2.0 aims to improve dissemination of patient-centered outcomes research (PCOR) to adolescent and young adult (AYA) healthcare providers through the use of new media technologies. The goal is to provide clinicians and youth-serving professionals from a variety of disciplines with PCOR that guides adolescent clinical services. Beginning in the fall of 2013 through the spring of 2014, the YP2.0 initiative undertook formative research, utilizing both Key Informant Interviews (KIIs) and a Web-Based Survey (WBS), to identify training needs for providers who care for adolescents and gather the opinions of adolescent health and medicine specialists and leaders to explore: AYA health needs; priorities for training SAHM members and non-adolescent medicine (AM) specialists who provide care to AYA; barriers to receiving information about PCOR; and suggestions to enhance dissemination of PCOR on AYA clinical care guidelines and best practices. This report summarizes the findings of this needs assessment and offers recommendations for future training of adolescent health and medicine providers.

METHODS

The needs assessment for SAHM's YP2.0 initiative consisted of two phases: Key Informant Interviews (KIIs) and a Web-Based Survey (WBS). The KIIs were conducted between September 2013 and January 2014 by phone or in person with 33 adolescent health and medicine specialists and leaders in the United States and Canada who have a specialty focus in the care of adolescents and young adults, defined as individuals from ages 10 to 24 years. The WBS (n=368 respondents) was conducted via Survey Monkey from March 19, 2014 to April 16, 2014. YP2.0 staff distributed the link to the WBS via email to SAHM's membership list and to SAHM's discussion-based listserv, which includes both SAHM members and non-members. Respondents were also asked how technology informs their practice and to provide suggestions about training needs for health care providers, the most effective training methods, and best ways to increase access to new training materials.

RESULTS

Adolescent health and medicine providers highlighted many important issues for the training of all providers who see AYA patients**.**

Identifying Training Needs of All Providers Who See Adolescents

Respondents highlighted the importance of the field of adolescent health and medicine but articulated that having a small, select group of specialists was not adequate to care for all adolescent patients. These sentiments underscored the idea that there are two different workforces seeing adolescents—those who are specialty trained and those who are not. Respondents clearly identified the need to increase the number of adolescent medicine providers. Respondents felt it important that SAHM address the training needs of this broad range of providers who see adolescents as well as the training needs of those just beginning their training and those who are already board certified and practicing.

Identifying Innovative ways to Deliver Training

Respondents discussed the components of effective training, which included considerations of different training methodologies as well as barriers to training. Cost emerged as a key barrier, although respondents indicated that they would be more likely to be willing to pay for training if CME was available. Respondents also identified the need to provide training that serves a variety of learning styles, works within common time constraints, and varies in levels of interaction. Respondents clearly thought technology may provide ways of circumventing some of the barriers to accessing training, although some respondents expressed concern about the replacement of more traditional, in-person training methods or felt wary of using new technology because of a lack of experience. Others expressed both

the real promise in using technology-based training methods and also expressed the need to improve the use of technology for training purposes.

Internet, Social Media, and Technology in Practice

Respondents also emphasized the increasing use of technology in keeping up to date on new research, in patient care, and in communication with patients. Respondents emphasized their use of mobile apps and EHRs/EMRs. Several respondents suggested generational differences in comfort with and overall use of technology.

Patient Centered Outcomes Research

Respondents also highlighted the need for building the evidence base regarding key adolescent health topics and interventions, which could inform both clinical care and training of providers in patient informed decision-making. The training approaches and methods highlighted in this report can be used to disseminate PCOR in ways that match both the interests and the needs of the variety of providers that serve adolescents.

RECOMMENDATIONS

- Resources and training materials and tools need to be developed and shared with providers on the topics identified as primary adolescent health issues: sexual and reproductive health (e.g., contraception, STIs, HIV, pregnancy), access to care (e.g., transition to adult care, insurance access), mental health issues (e.g., depression, referral/access, screening, treatment), positive youth development (e.g., self-esteem, parent communication), and healthy eating/nutrition.
- Training opportunities should be nuanced and reflect the broad range of providers seeing adolescents and their varied levels of training, including whether they have specialty training and the length of time they have been practicing. Both populations need training and resources focused on sexual and reproductive health and mental health/psychiatric issues. Key training needs identified for non-specialty trained adolescent providers included additional emphasis on psychosocial assessment, providing confidential care, and adolescent growth and development. Specialty trained adolescent providers need focus on motivational interviewing, advocacy, and interdisciplinary teamwork.
- Training should be made available to adolescent providers in formats that are easily accessible to providers within their time constraints, low cost or free, and that allow provision of CME.
- Given the limited number of providers who have adolescent specialty training and with fewer trainees going into adolescent medicine, SAHM should explore training or certificate programs for those not board eligible or who are interested in learning more about caring for adolescents but may not be interested in a three-year fellowship.
- A range of providers are using technology in practice; however, not all providers are comfortable with different modes of technology or may be unaware how best to use technology in their practice. Trainings and supports should be developed to support providers who are less adept at using technological modalities in training and clinical care settings.
- SAHM's website should be updated with additional content so it can serve as a clearinghouse for information and training around the key adolescent health topics identified and a way for PCOR to inform AM practice.

This formative research has served as a starting point for several activities of the YP2.0 project.YP2.0 has already begun working within SAHM to address some of these recommendations, particularly regarding making SAHM's website a clearinghouse of adolescent health and medicine information through new Clinical Care Resource Guides and keeping SAHM's membership updated through *SAHM's Weekly Adolescent Health News Roundup*. The findings of YP2.0's formative research will continue to inform future activities of the project.

ABSTRACT

Youth Providers 2.0's (YP2.0) formative research included an initial needs assessment utilizing both Key Informant Interviews (KIIs) and a Web-Based Survey (WBS) to identify training needs for providers who care for adolescents. Respondents identified a broad range of key adolescent health issues, including specific topics such as sexual and reproductive health, mental health, access to care, positive youth development, and healthy eating. They expressed concerns about current approaches to the care of adolescents including the training of providers and effective interventions with patients. Respondents highlighted the inability of adolescent medicine (AM) specialists to see all adolescents and the importance of AM training for non-specialist providers. This report identifies methods for training providers and strategies for effective implementation. The training approaches and methods identified can be used to improve dissemination of patient-centered outcomes research (PCOR) in ways that match the interests and the needs of providers that serve adolescents.

INTRODUCTION

In 2013, the Society for Adolescent Health and Medicine (SAHM) and the Heilbrunn Department of Population and Family Health at Columbia University launched the Youth Providers 2.0 (YP2.0) initiative, with support from the Agency for Healthcare Research and Quality (AHRQ). YP2.0 aims to improve dissemination of patient-centered outcomes research (PCOR) to adolescent and young adult (AYA) healthcare providers through the use of new media technologies. The goal is to provide clinicians and youth-serving professionals from a variety of disciplines with PCOR information that guides adolescent clinical services. Activities of YP2.0 that have already been implemented include an *Adolescent Health Weekly News Roundup*, the development of comprehensive Clinical Care Resource Guides, and a section of SAHM's website. The YP2.0 initiative undertook this needs assessment to gather the opinions of adolescent health and medicine specialists and leaders in order to explore: AYA health needs; priorities for training SAHM members and non-AM specialists who provide care to AYA; barriers to receiving information about PCOR; and suggestions to enhance dissemination of PCOR on AYA clinical care guidelines and best practices. This report summarizes the findings of this needs assessment and offers recommendations for future training of adolescent health and medicine providers.

METHODS

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The WBS (n=368 respondents) was conducted via Survey Monkey from March 19, 2014 to April 16, 2014. YP2.0 staff distributed the link to the WBS via email to SAHM's membership list and to SAHM's discussion-based listserv, which includes both SAHM members and non-members. Email reminders were sent out weekly for four weeks. The survey link was also distributed via SAHM's social media channels, including Facebook and Twitter, and was shared by SAHM members on their personal social media accounts. The survey's time period overlapped with the 2014 SAHM Annual Meeting, where announcements regarding the WBS were made verbally and through slides during plenary sessions. The WBS link was shared with over 1200 individuals via these methods. The WBS data were analyzed using the frequency of responses and descriptive statistics. Respondents were also asked to provide suggestions about training needs for health care providers, the most

effective training methods, and best ways to increase access to new training materials. Both the KIIs and WBS were approved by the Columbia University Medical Center IRB.

This report presents responses from both the KIIs and the WBS by topic, highlighting the recommendations that came forth from both groups of respondents. In general, KII responses are presented first, followed by the WBS responses. KII quotations and WBS write-in responses are also used to illustrate specific ideas.

RESULTS

Demographics & Adolescent Work Experience

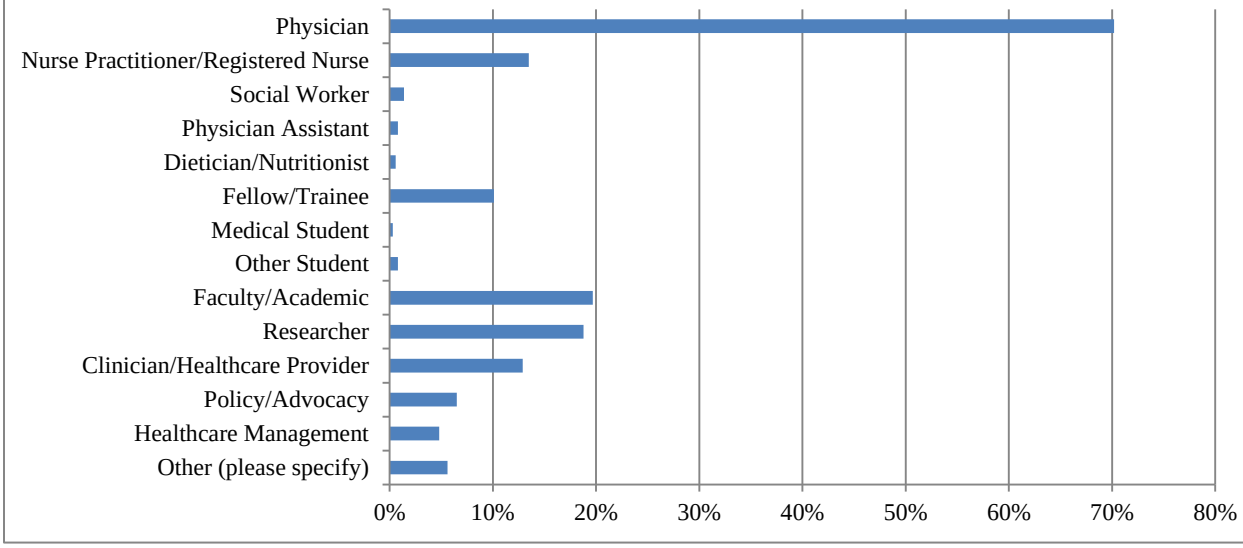
Key Informant Interviews (KIIs)

Thirty-three adolescent health and medicine specialists and leaders were interviewed for the KIIs, including academic faculty in medicine, psychology, nursing, law, public health, and social work. The interviewees primarily held positions in clinical care, training, and/or research. Others were current trainees in adolescent medicine or ran non-profits focused on adolescent health. Participants represented several diverse SAHM leadership and committee positions, held either currently or previously. KII respondents all reported receiving training in adolescent health and/or medicine, including through clinical and research fellowships.

Web-Based Survey (WBS)

A total of 368 professionals responded to the WBS, which reflects a response rate of approximately 30%. **Figure 1** provides a breakdown of WBS respondents' role in adolescent health and medicine. Respondents most commonly identified themselves as physicians (70%). It is important to note that response options were not mutually exclusive and a significant number (31%) of respondents reported more than one role. The most common response among those who selected the 'Other' category was psychologist (n=7). Other respondents specified that they were public health administrators (or other administrators), educators, pharmacists, occupational therapists, social work students, Health Information Technology/Electronic Health Record professionals, or retired.

Figure 1: WBS Respondents Role in Adolescent Health and Medicine (n=368)



The overwhelming majority (87%) of WBS respondents either had adolescent fellowship training and/or had received other extra training in adolescent health. Given the method of recruiting, nearly all of the respondents (91%) were SAHM members.

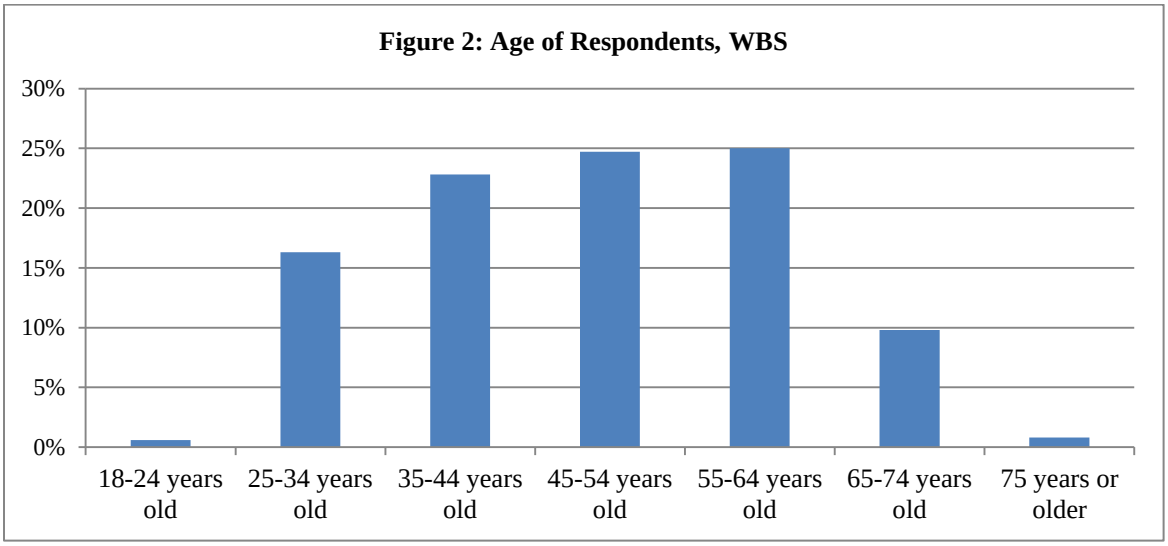
Demographic Information

Table 1 provides a breakdown of KIIs and WBS respondents by gender and race/ethnicity. Respondents were more likely to be female in both the KIIs (61%) and WBS (75%). Additionally, for both the KIIs and WBS, the majority of respondents were Caucasian (91% of KIIs; 81% in the WBS). **Figure 2** shows the age distribution of participants in the WBS. The majority of respondents were between 35 and 64 years of age. The age of key informants interviewed was not obtained.

Table 1: Demographic Information of KII and WBS Respondents

	Key Informant Interviews		**Web-based Survey**
	Percent of Respondents		Percent of Respondents
Gender	n=33		n=358
Male	39%		25%
Female	61%		75%
Race/Ethnicity	n=33		n=352
White/Caucasian	91%		81%
Black/African American	6%		10%
Other	6%		8%
	n=33		n=348
No, not of Hispanic origin	100%		95%
Yes, of Hispanic origin	0%		5%

Figure 2: Age of Respondents, WBS



Adolescent Health Issues: Key Issues and Prevention

Key Adolescent Health Issues

KII respondents were asked to identify the key health issues facing adolescents today and key priorities for prevention. Responses reflected the myriad of individual health problems facing adolescents, including problems unique to adolescents:

> *Things like behavioral health issues, psychiatry, injury, violence, reproductive health. Also healthy eating, physical activity. (KII 6)*

> *… a lot of challenges with sexual health, getting education information and learning how to engage in healthy behaviors around that. Obesity is a big problem and nutrition, eating healthy, and access to physical activity. Substance abuse [and] mental health issues are also big challenges. (KII 18)*

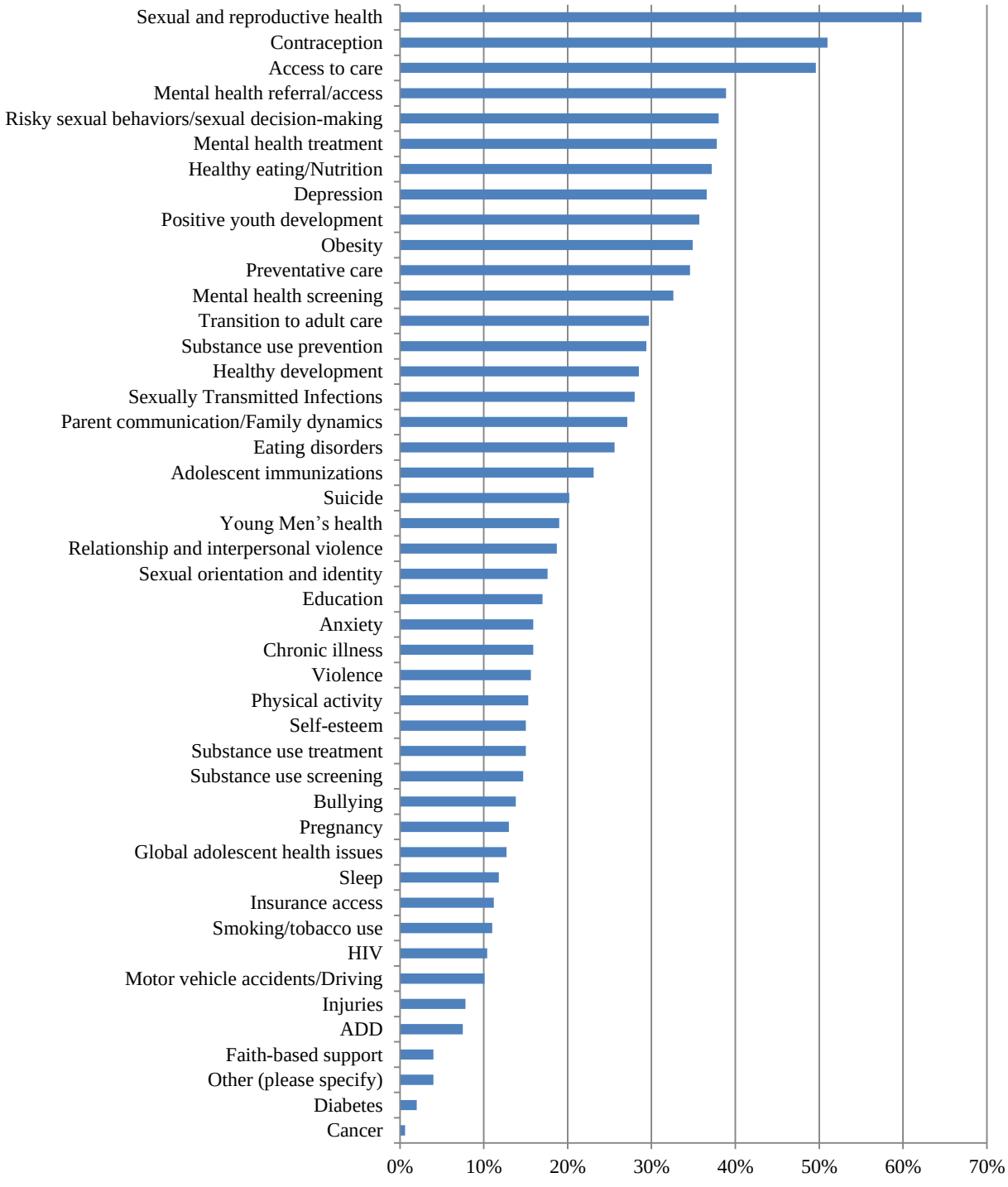
The underlying and structural issues impacting adolescent health were also discussed, such as failures in the health infrastructure for adolescents, the physical and built environments, and access to health care and education. Respondents also addressed the overall approach to adolescent care:

> *So much of what affects adolescent health is behaviorally related…80% of what kills kids is really entirely preventable, and so much of it stems from trauma, stress, or environmental issues. So if we're going to both help adolescents today and think about the future of health tomorrow, the full biopsychosocial model must be integrated into adolescent health care. (KII 19)*

> *We often dismiss… the whole social context of adolescence….we see poverty during adolescence and family breakdown, family ruptures that occur during adolescence. And so I think this is where we need to think again about how we do things… the behaviors and the social contexts intersect… So we can try to fix the behavior, but we also need to fix the social context that produces those things. (KII 9)*

Based on the themes elicited in the KIIs, WBS respondents were asked to choose ten key adolescent health issues (from a list of 44 topics) they deemed to be the most important. **Figure 3** shows these responses.

Figure 3: Top Ten Adolescent Health Issues, WBS



WBS respondents also suggested additional topics: immigrant health, internet pornography and its role in interfering with sexual development, employment/vocational training, juvenile justice, homeless youth, sports medicine, rural health risks and exposures, health disparities (including racial/ethnic disparities), access to economic opportunities, media overuse syndrome, proper use and effects of social media, and safety and gun violence.

Sorting responses into groups, the top five domains were:

1. Sexual and reproductive health (including contraception, STIs, HIV, pregnancy, etc.)
2. Access to care (including transition to adult care and insurance access)
3. Mental health (including depression, referral/access, screening, treatment, etc.)
4. Positive youth development (including self-esteem, parent communication, etc.)
5. Healthy eating/nutrition (including obesity)

KII respondents also commented on these same topics at length in their interviews. Some examples of what key informants discussed regarding these top five topics follow.

Sexual and reproductive health:

> *I think they have a lot of challenges with sexual health, getting education information and learning how to engage in healthy behaviors around that. (KII 18)*

Access to care:

> *… the issue of access and delivery of appropriate preventative services. It's a unique issue for health services for adolescents... (KII 17)*

> *The health care system exists where mental health is either underpaid or not paid at all. I see it as more of a system problem. Not only do we need more bodies in it, but we've got to figure out as a health care system, how do we get past the fact that right now it doesn't make money?... How do we get people access to it without worrying about payments and copays and who's got insurance and who doesn't? All those barriers. (KII 5)*

Mental health issues:

> *… the annual preventive data… tends to underscore mental health needs for adolescents. That's the purpose of an annual visit, particularly for teenagers, because they're at highest risk for the emergence of psychiatric disease. The lack of [parity] between mental health coverage and physical health coverage has long been sort of a problem. (KII 30)*

> *Most mental health disorders all have their onset during adolescence. There are a few that have onset prior to adolescence, but by the time one exits adolescence, most of the disorders anyone would develop have started. (KII 6)*

Positive youth development

> *… if we can strengthen the education and other opportunities for kids to engage in overall positive development. For them to have things to do is probably the best prevention that we can have. (KII 21)*

Healthy eating/nutrition:

> *The other thing is obesity and all of its…related conditions. I can't tell you how many adolescents I see with hyperlipidemia and hypertension. That's real and…we have to start treating as early as age 11 or 12…that ties into behavior and other factors as well. (KII 22)*

Key Preventive Issues in Adolescent Health

The KIIs specifically probed for preventive issues in adolescent health and interventions to address them. Key informants clearly thought prevention was a critical issue:

> *Trying to ensure that adolescents have regular well healthcare or preventive healthcare visits is key…the adolescent age group tends to not go see the doctor, even for their well exams. Most often because they're perceived as being well and not having any issues. (KII 22)*

Key preventive topics raised in KIIs included: sexual and reproductive health, obesity and diabetes, safety (including injury), mental health, substance use, and violence. However, when asked about existing interventions for key adolescent and preventive health issues, key informants only identified a limited number of interventions. The strong sentiment was that there are few evidence-based interventions that exist for adolescents:

> *We've shown short term success in intervention programs. Right now, the projects are all focused around, "Well, what can we do right now for this population?" But…when the intervention ends, the problem tends to creep back.(KII 5)*

While it was difficult for respondents to identify existing prevention interventions, they were able to identify aspects of prevention they thought important, based on what has been perceived as effective with adolescents in the past. This research identified methods for training providers and strategies for effective implementation. Prevention tools identified included: positive youth development/strengths-based approaches, community approaches, skill-building, motivational interviewing, open communication, wrap-around support, vaccines, and law and policies regarding alcohol, driving, tobacco, and immunizations.

> *There's a whole wide range [of prevention strategies regarding risky sexual behaviors]. You have the preparation of families to communicate effectively with kids around behavior. You have medically accurate, developmentally appropriate evidence-based sex education, preferably starting at kindergarten level, and then you have a whole variety of youth development oriented programs that are designed to build capacity and confidence in young people…You couple that with the skills to make decisions around sexual behavior…[then] their behavior changes. [KII 26]*

> *So what have we done that's reduced tobacco use? We've raised the price of cigarettes out of the reach of a lot of teenagers…We've changed social consciousness about the social acceptability of smoking at every age…We've strengthened the legal requirements or prohibitions against tobacco use by young people. We've made smoking [socially] unacceptable…Overall we have a whole panoply of stuff that we can do around tobacco. (KII 8)*

> *There's been some really successful interventions linking schools with health centers… Even if a school can't have a school-based health center on site… creating relationships and links between schools and health centers that are in their communities. (KII 11)*

Identifying Training Needs of All Providers Who See Adolescents

Workforce Issues

Key informants were asked to discuss the key workforce needs in adolescent health and medicine as well as whom they considered to be the "workforce" in this arena. While some respondents identified the AM workforce as "people who join SAHM" (KII 14), most of those interviews saw the workforce as "all providers that see adolescents," regardless of discipline and even if they "aren't necessarily specialized in it" (KII 18).

Many respondents also noted that the workforce was "broader than the medicine profession" (KII 12) and included a wide variety of youth serving professionals.

> *. . . . So this is why SAHM changed its name and added the H. Because adolescent medicine is not the umbrella under which all adolescent health providers fall…So adolescent medicine, to me, captures one part of the broader array of providers who are youth focused and provide adolescent health services. (KII 26)*

The KIIs clearly identified the need to increase the number of adolescent medicine providers and the "need to get more trainees into adolescent medicine fellowships or trainings of some sort" (KII 5). Other respondents also commented on why so few people are going into adolescent medicine in a number of professions:

> *We need a whole cadre of adolescent health providers. We don't have enough physicians. We don't have nurses or nurse practitioners or mid-level providers. And we don't have this whole team who care about adolescent patients. (KII 3)*

> *I think that the workforce issue for adolescent healthcare providers is in crisis. And I think that the subspecialty runs the risk of becoming obsolete…if things don't change radically in the next few years, about making trainees interested in pursuing adolescent health and making adolescent health perceived to be a benefit in healthcare, we will be extinct. (KII 33)*

Closely connected to the need to train more AM specialists was the need to better train non-specialist providers who care for the bulk of the adolescents:

> *You'd have to diversify and have folks training at almost every pediatric institution to develop a big enough workforce to have an impact. (KII 22)*

> *If we don't train the providers, the adolescents are not going to come. So I think at the very, very core to me is the education of health care providers… it needs to be done systematically in a very well-researched and very well-thought-out way… My worry for the adolescent patients is based on my concerns for the adolescent health providers and the lack of training. (KII 3)*

One of the key themes repeated by key informants was that having a select group of specialists was not adequate to care for all adolescent patients. All respondents agreed that AM was an important specialty, but many expressed the idea that specialists need to be available for the difficult cases and to train the generalists: residents and providers already in practice who see the majority of adolescents.

> *Obviously we need more people going into the field as specialists, who can be the experts and teachers of the rest of the workforce…There won't be enough people specializing in adolescent medicine to take care of all the teenagers. So we need to figure out a way to have enough experts around to train the frontline people, the generalists who are actually seeing the majority of teens and young adults, so that they can provide the ideal care for them. (KII 7)*

> *You need some proportion of people who are really trained to catch kids in crisis and prepare other people to catch kids in crisis…We need to have a steady supply of enough of us out there who are really well trained in the complex issues of adolescents to be able to catch those kids, and then to be able to train other people. (KII 19)*

Key informants also addressed issues of diversity, including the need for racial/ethnic diversity so the adolescent health and medicine workforce reflected the population it serves:

> *How do we ensure the diversity of that workforce, because…I think that's an issue across all age ranges, but certainly for adolescent medicine…how do we ensure that we have physicians that look like who you are. (KII 12)*

Respondents reflected on the diversity of disciplines seeing adolescents and the amount of adolescent-specific training the various disciplines need to receive. Key informants often tied these comments into difficulties with compensation for those who have completed an adolescent medicine fellowship and are board certified:

> *We don't need everyone to have a three-year fellowship in adolescent medicine. We need doctors, nurses, pediatricians, family docs, nurse practitioners, physicians assistants…to receive some level of training. (KII 19)*

> *I feel like we need to be able to diversify a little bit in that realm, to develop our workforce. (KII 22)*

> *[We need] adolescent specialists embracing general pediatricians or nurse practitioners or family practice doctors that have an interest in adolescent health… But in terms of increasing the number of people that do board certification in adolescent medicine, I think that is not an area that's going to be worth our time spending a lot of time investing in. Unless the amount of time required for training is changed or the compensation issues are changed. (KII 23)*

Key informants specifically mentioned the importance of providing AM training to primary care providers because of their facility with prevention issues as well as their exposure to adolescents:

> *I think what we really need to be focusing on is also what can be done in primary care, the kinds of brief interventions, kinds of staff who can augment what's going on in the clinic, whether it's prescribing medication, whether it's doing some sort of cognitive behavioral follow-up (KII 4)*

Identifying Specific Training Needs of Non-Adolescent Specialty Trained Providers

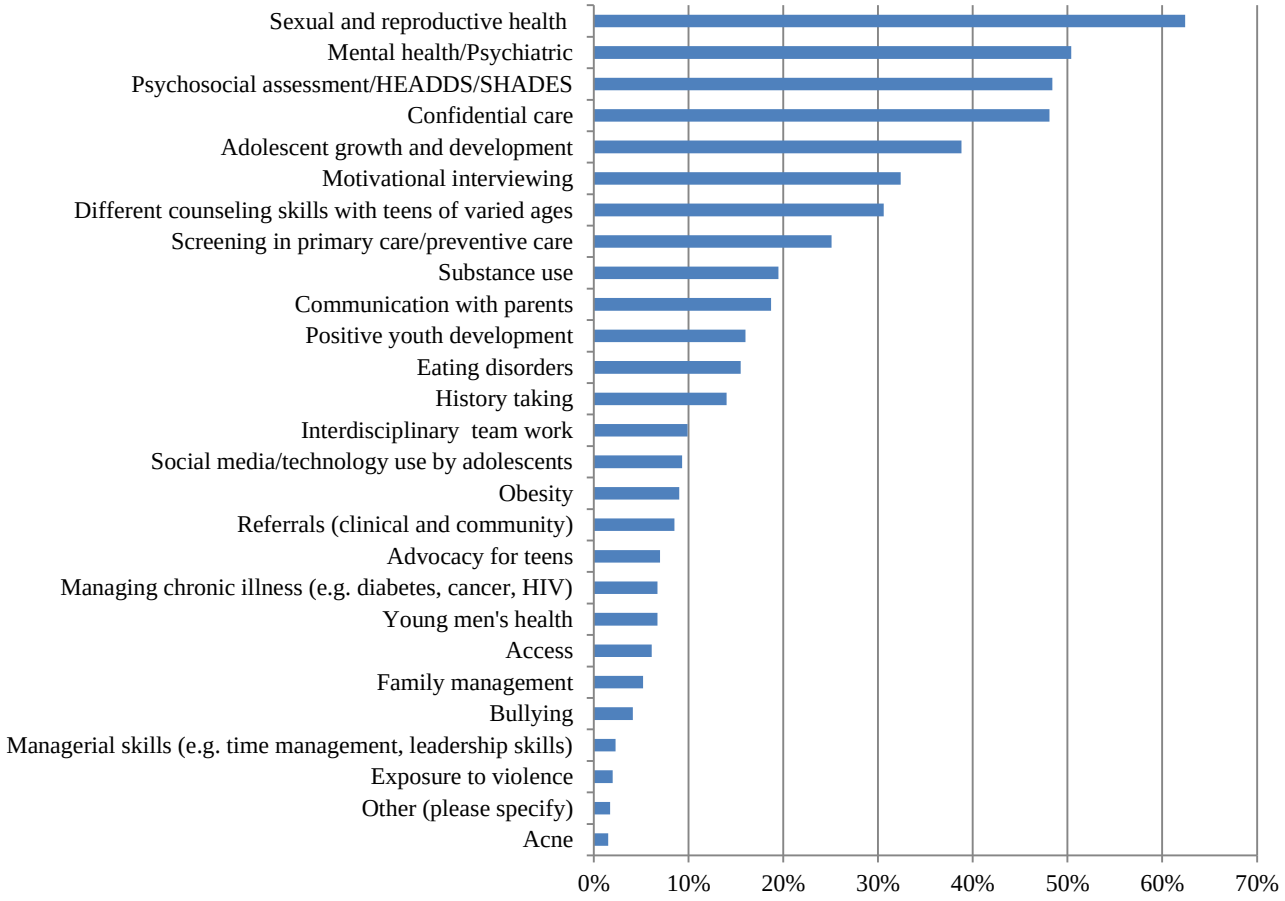
The opinions expressed and the workforce issues that emerged in the KIIs often centered on the "two different workforces" (KII 6) in adolescent medicine—the experts and the generalists—and the different training needs of these two populations. Key informants discussed a range of topics on which specialty-trained providers need to receive training and the specific topics on which non-specialty providers need training. Given the frequency with which this topic came up in the KIIs, specific questions were included in the WBS about the training needs of these distinct populations.

The WBS asked respondents to identify the five training needs they thought were most important for providers who were not adolescent specialty trained (**Figure 4)**. The top five training topics for non-adolescent specialty training providers were:

1. Sexual and reproductive health (e.g., contraception, STIs, HIV, pap smears) (62%)
2. Mental health/Psychiatric (e.g., depression, suicide, ADD, anxiety) (50%)
3. Psychosocial assessment/HEADDS/SHADES (48%)
4. Confidential care (48%)
5. Adolescent growth and development (39%)

The top two training needs identified for non-adolescent specialty trained providers were also listed as key adolescent health priorities identified by WBS respondents. WBS respondents also suggested training topics as write in's: legal rights of adolescents to self-consent, online resources for reproductive health, trauma-informed confidential care, injury prevention, and sports medicine.

Figure 4: Top Five Training Needs of Providers who are NOT Adolescent Specialty Trained, WBS



KII respondents also commented on these: "knowing how to ask questions about sensitive topics like alcohol and drug use [and] sexual behavior" are topics that "pediatricians don't learn, and family practice docs don't learn" (KII 20). They suggested that many non-adolescent specialty trained providers are uncomfortable discussing these topics due to a lack of training:

Sexual and reproductive health:

I think a lot of…pediatricians…don't have the training on sexual reproductive health services that they might need…on contraception, STI screening…they have a lot of older ideas…They don't know about new recommendations like they think they need to give their patients a PAP in order to get birth control, and they're not prepared to do a pelvic exam, so they think they can't give birth control, and really that recommendation isn't there anymore. (KII 11)

One of the problems that's been pretty well established for providers of health care to adolescents… broadly among pediatricians and family physicians, is the failure to even discuss sexual behavior and sexual health needs…If you don't ask, you don't ever find out… there's very little…discussion that goes on among health care providers who are not trained in adolescent health. (KII 20)

Mental health/Psychiatric

I wish we'd do more around mental health, because this is the period where you see a lot of the issues emerge. (KII 12)

Psychosocial assessment/HEADDS/SHADES

We've graduated thousands of pediatric residents that have heard that term [HEADSS assessment]… And now that it's something that they should pull out of their toolbox…as way to organize that visit, address…risk issues. (KII 22)

Confidential care

Something I think people don't know how to do…is the important roles of families in working with their young people. I think many of us get stuck in this confidentiality quagmire. (KII 6)

…making screening for what type of sexual behaviors the kids might be engaging in, routinizing those questions, but again, making sure that the kids understand that these are confidential and the confidentiality policies in the office. (KII 18)

Adolescent growth and development

Well, one thing I think works is if a culture is open about physicality and sexuality and pubertal development and not ashamed about it and not in denial about the fact that young people are developing beings that start to have intimate feelings and desires as they mature… helping a pubertal adolescent understand how their body's changing…and what it means to have your period, how to respect your body, how to respect other people's bodies. (KII 17)

[Providers] need training in issues of adolescent development… being really well attuned to the developmental issues of adolescents so that they can interact with them appropriately, so that they can structure their practices and their approaches in a way that's going to be adolescent friendly. (KII 27)

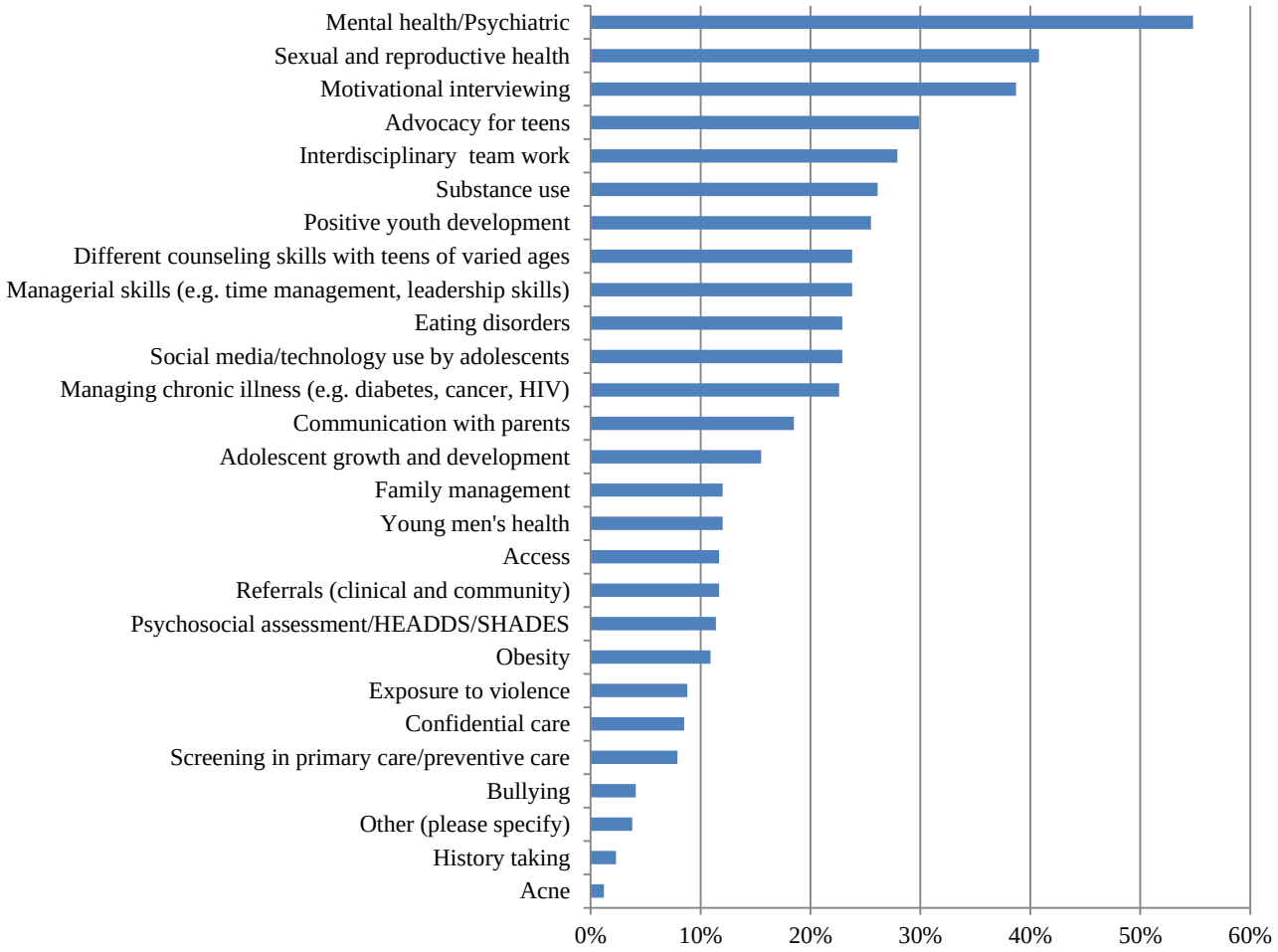
Identifying Specific Training Needs of Adolescent Specialty Trained Providers

The WBS also asked respondents to identify the five top training needs for providers who are adolescent specialty trained. **Figure 5** represents the results of the WBS. Of 26 options listed, the most frequently identified training needs of adolescent trained specialists were:

1. Mental health/psychiatric (e.g., contraception, STIs, HIV, pap smears) (55%)
2. Sexual and reproductive health (e.g., depression, suicide, ADD, anxiety) (40.8%)
3. Motivational interviewing (38.7%)
4. Advocacy for teens (29.9%)
5. Interdisciplinary team work (27.9%)

Similarly for non-adolescent specialty trained providers, sexual and reproductive health and mental health were selected as the top two training needs. However, the last three topics represented a distinct difference between the two groups. WBS respondents also wrote in additional topics including: mental health skills for primary care providers, fertility awareness based methods of family planning, media training/speaking with the media about adolescent health issues, community partnership building, electronic records and communication/documentation, transition to adult care, trauma-informed confidential care, long-acting reversible contraceptives, advocacy training, orthopedic care, injury prevention, and implementing/running programs.

Figure 5: Top Five Training Needs of Adolescent Specialty Trained Providers, WBS



The following reflect the opinions of the key informants on the top five training topics for adolescent specialty trained providers, not previously addressed:

Motivational interviewing

[There are things] I think everybody who's a health provider should be able to do. Everybody should be able to join with parents. Everybody should be able to know how to talk to kids. Everybody should be able to know some brief interventions… motivational interviewing...Everybody should know how to get kids started, and how to access mental health and other services. Everyone should know that. (KII 19)

I'm an advocate of motivational interviewing approaches, finding out what someone is doing and what kind of changes they're interested and willing to make, and then matching a response to where the adolescent is…you would want to find out what their needs are and what they're doing and what they're interested in, and to talk with them about the kind of steps they can take to keep themselves healthy and to get the kind of services they need. (KII 20)

Advocacy for teens

Being advocates, policy savvy and able to work in communities, learning how to do that work, because that's a big part of what we do as well, and you've got to work with schools and really being a part of the community participation in adolescent health or knowing how to do that. (KII 2)

Interdisciplinary team work

I would say clinicians—physicians in general— probably don't get as much training in being part of a multidisciplinary team. I think that that's crucial at any time of adolescent care. I've certainly seen it in the adolescent clinics I've worked in, both as a resident and as a fellow. That's a huge aspect of it. It's really important to be able—even if you don't necessarily have the knowledge base—and I think that's the point of having a multidisciplinary team, because everyone can't have the knowledge base in every area. (KII 32)

Identifying Innovative Ways to Deliver Training

KIIs also explored respondents' attitudes and opinions regarding the best or most innovative ways to deliver training for adolescent health providers and ideas for using technology to improve the delivery of trainings.

Training Considerations for All Providers

Key informants identified many of the same issues identified for AM specialists. A key difference was distinguishing between "new" versus "ongoing" learners. This distinction referred to providers that are just beginning their training (e.g., medical students, fellows, and residents) versus those already board certified and practicing. The distinction also referred to different training approaches needed for those who are engaged in general practice and seeing adolescents—but may need dedicated training in adolescent health—compared to those who were adolescent specialty trained and are further along in the spectrum of their practice. For example:

You could talk about new learners and ongoing learning. Those are two separate things, but the other thing is, what it is, my sense is, what are you trying to teach them, and then base your teaching on that, base the way, deliver your teaching on what it is you're trying to teach them. (KII 9)

WBS respondents also suggested training or certificate programs for those not board eligible or those who are interested in learning more about caring for adolescents but may not be interested in a full three-year fellowship due to the length of fellowship or reimbursement issues.

[I]n internal medicine, it's quite standard that one can choose to do a two or a three year fellowship. And if you do three years, you're more focused on research when you're done, but you can do like a two-year infectious disease fellowship that's clinically based. (KII 33)

There'd be a lot of people that want to get board-certified or certified, or get a certificate in that. And we are not addressing that group. (KII 8)

I think it's really tough for trainees to many times be able to justify doing an additional three-year fellowship when they're not going to make any additional money or anything. (KII 18)

KII responses also underscored the need for interdisciplinary training and leadership development for the adolescent workforce:

I think the idea of [training in] an interdisciplinary clinic setting where there are multiple types of providers…where the adolescent medicine fellows are seeing patients and being precepted by staff physicians, but also by a psychologist who will sit in with them and help them with interviewing skills and give them feedback…I think the ideal setting is one in which a more kind of integrated primary care model is used…. (KII 20)

I think that traditionally we've focused a lot on leadership training, which I think is a really important part of it, especially given…how we have to reach out to others and provide additional training or motivate people to get more interested in learning about adolescent health. (KII 23)

KIIs also highlighted the need to train providers to work not only in conjunction with other types of providers but also with families, schools, and community-based organizations:

> *I think that we see it in a variety of settings, both nationally and internationally. Adolescent medicine providers who have very poor preparation for dealing with family related issues, school related issues, and peer related issues. Those are three of the major influences on the lives of our young people. Poor knowledge about how to interface with and coordinate with community based resources, and even how to access them in terms of the needs of young people. (KII 26)*

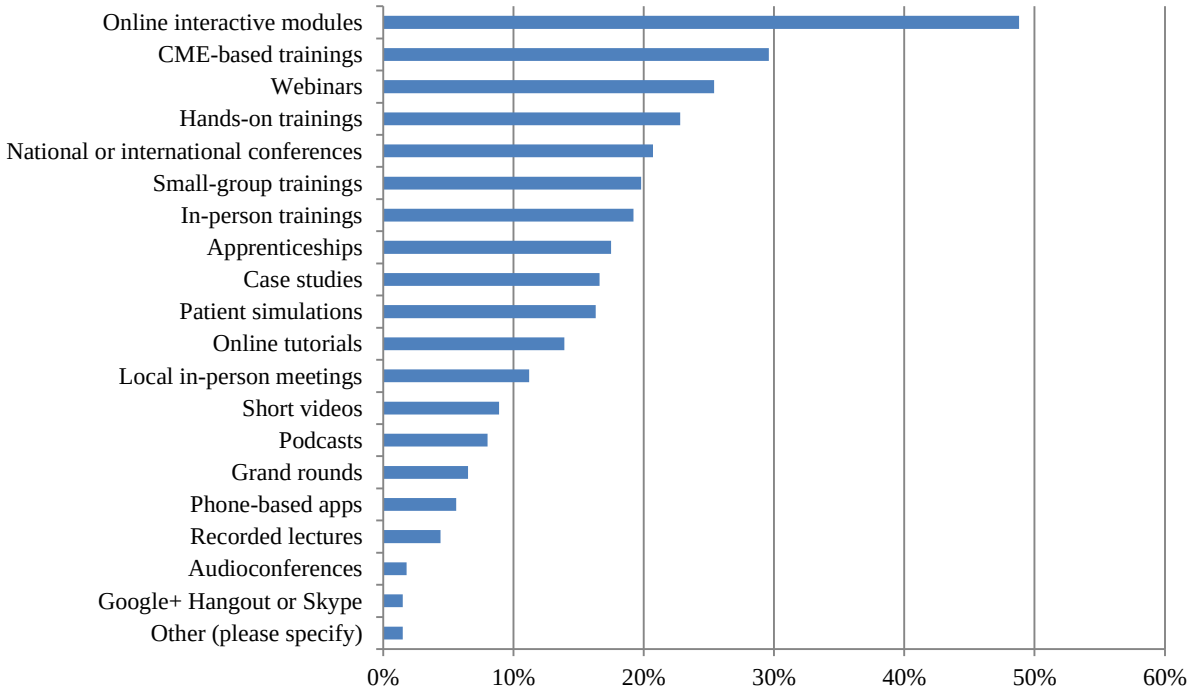
Training Methods

Key informants identified multiple training methods, including "traditional" methods and the use of new technologies. Traditional training methods included lectures, conference presentations and workshops, hands-on trainings, and patient simulations. Virtually all key informants discussed technology as vital to current and future training efforts. However, many respondents noted that the use of technology in training is not a "substitute for being in a room with a patient…." (KII 33).

Key informants discussed—and in some cases endorsed—methodologies that use technology, including webinars, online modules, podcasts, short videos, TED talks, patient simulation or role play, online meetings or video-conferencing, case studies, and flipped classrooms. The WBS asked respondents about the most effective training methods for providers who care for adolescents. Respondents were asked to select the three (of a list of 19) methods they thought most effective. **Figure 6** details the training methods respondents thought to be most effective for delivering trainings to adolescent-specific providers. The most commonly endorsed methods were:

1. Online interactive modules (49%)
2. CME-based trainings (30%)
3. Webinars (25%)

Figure 6: Top Three Most Effective Training Methods for Adolescent Providers, WBS



Key informants suggested that, while popular, improvements are needed in the execution of these methods:

Online interactive modules

> *My residents now use Physicians for Reproductive Health's (PRH's) adolescent reproductive health modules—the online modules—for a big chunk of what was our didactic training…We just didn't have enough time to do all the lectures and hit all the topics that we thought were important for them. And so we were using those online modules. And [the residents] like them because they can access them anytime, basically anywhere…There's multiple ways to engage in that learning. (KII 22)*

> *I think they're much better than they used to be; however, I think the next generation needs to be much more interactive. It's starting to happen…Now we're doing slightly smaller ones meaning with smaller numbers of people, and their cameras on the individuals and on the speaker. So there's actual interaction. We did some work with a consultant, and really do believe that when there's eye contact, it takes it up to a whole new level. (KII 29)*

CME-based trainings

> *I think quite often just online modules like reading and then doing some multiple choice questions and then getting CMEs at the end of it, I think that's valuable…I don't think it's essential, but I think it encourages more people to do it. (KII 10)*

> *I think there's some tried and true methods of so-called continuing medical education. That's the system that's set up to do this. So it helps to fit into that system. I think the system is not, it's better at imparting knowledge. It's not necessarily always great at giving people skills, giving clinicians skills, like counseling skills, those kind of things. (KII 8)*

Webinars

> *I think webinars can be helpful, especially if they can be stored. So if it's a live webinar, I think there are some real advantages because you can potentially interact with the presenters and ask questions, but I think the problem is how well it fits in with people's schedules…So I suppose if you have a live webinar…then also make it available for people to access. (KII 20)*

> *To say webinars aren't effective, they're not present in their same form, because essentially they're done by—they're not done any differently than if they were in person, all they've done is use technology to videotape. But if you think about technology as being more interactive and you think about webinars as I have a specific question…Having a webinar where you could type in, or having a technology where you could type in, "What do I do with this patient?" (KII 30)*

Other commonly chosen training methods focused more on traditional training methods that did not necessarily incorporate technology. These methods included: hands-on training (22.8%), national or international conferences (20.7%), small-group trainings (19.8%), and in-person trainings (19.2%). Other suggestions offered by respondents that were not listed as options included: mentored observations of real or simulated provider encounters/clinical decisions, making curricula available for members to use in their local sites with suggestions on how to use them in various ways, skills-based trainings, simulated patient-based educational programs, and mentors that are readily available for consultation.

Barriers to Training

Key informants identified a number of barriers to seeking and receiving training. One area identified was the need to provide training that serves a variety of learning styles, time considerations, and levels of interaction. For example:

> *I think people have different ways they like to learn, and then their time availability varies. So you have to kind of meet their needs... it's hard to get physicians to change their behavior, not just their practice behavior, but their learning behavior. (KII 18)*

> *The problem is we're all so busy and it's kind of finding time. I think people…want to be taught. So I think providing education in a way that is flexible and easily accessible is the way forward. (KII 10)*

> *It's all about time. If I have to do three or four clicks, I'm probably not going to do it. Two clicks, I'll go there. Four clicks, forget it. (KII 5)*

Several respondents saw technology as way to circumvent some of these barriers:

> *The more interactive you can make things, the more likely it is that somebody's going to either retain the information or change their behavior because of it. The more passive you are, the more likely that you're going to get people who are multi-tasking or what have you. (KII 29)*

> *I think that there can be some simulation technology probably…to have model patients or like models for doing contraceptive trainings or other procedural things. (KII 21)*

> *Well, distance technologies certainly play their role, particularly for those who are in geographically dispersed or isolated areas. The web is a wonderful vehicle for the training of international providers across a whole variety of settings intercontinentally… it really improves our reach and our ability to communicate. (KII 26)*

However, several KIIs touched on concerns with the use of technology for training either as a replacement for more traditional, in-person training methods and others wondered about the efficacy of new technology-based training methods:

> *I assume that some of this can be done by online programs… [but] I still think of one-on-one training as a key element in the overall portfolio of educational techniques. (KII 14)*

> *For me personally, maybe because I was trained the old way…I would prefer to go hear someone give a talk than watch someone on a computer screen. (KII 32)*

> *I think that increasingly people certainly are using webinars, are using a lot of technologies that I don't know if we know if they're effective or not. I know that the reach could be greater, but I don't know do they improve clinical practice? Do they change what people do in their practice? (KII 6)*

Some respondents expressed concern about using new technologies to train providers because some providers may not be accustomed to using technology or because of the nature of how quickly technology changes, particularly as compared to their younger peers:

> *Health care providers are using…the same technology in their work that they're using in other parts of their life, and it can be really hard to introduce something new unless people already feel like they understand it or understand why it's useful in another way…It's useful to leverage…existing tools or resources and try to adapt them and build on them as much as possible before trying to introduce something totally new, competing with so many other things. (KII 11)*

There's an entirely different set of circumstances in how technology applies to the people who completed their training before 2000 and those people who have completed their training after 2000, and I just use the year 2000 arbitrarily. I do think depending upon the time in which the health care professional completed his training is directly related to how integrated technology is to his life. (KII 30)

The cost of both in-person and online training was discussed as a significant barrier by a number of key informants, particularly if the cost was for a webinar or if the key informant was younger. In particular, KII respondents discussed their interest in opportunities to obtain CME/CE credits; however, they were frustrated with the high cost of trainings that provide CMEs:

People are not going to pay $50 for a webinar. They're just not going to pay that…and you're going to basically not get anybody using it. It has to be free. That's the way I think things work. People won't pay for a research article or a medical article…I don't think anybody wants to buy anything. (KII 8)

I think a great way to learn are in-person meetings, but they can be expensive, and then getting the time away, but I think that's the way I like to learn the most. (KII 18)

Because the cost and the role of CME/CE in training was a prominent theme in the KIIs, it was included as a question in the WBS to further explore this issue. When WBS participants were queried regarding willingness to pay for training on a priority adolescent health topic, the majority (n=177, 52.4%) were likely or very likely willing to pay for training on one of the priority topics they identified.

The overwhelming majority (78.7%) of participants reported they would be more likely to participate in trainings on one of the adolescent health topics that they identified if CMEs/CEs were part of the payment for the training.

However, as raised by at least one respondent in the WBS, there needs to be an awareness of the training costs to assure accessibility of a diversity of providers. As noted by one WBS respondent:

The training material should be reasonably priced especially for developing countries otherwise the health care providers may not access it. Also country specific cultural issues in adolescent care need to be addressed especially when catering to an international audience. (WBS respondent)

Internet, Social Media, and Technology in Practice

Accessing Information and Staying Up to Date

KIIs explored how the internet, new or social media, and the use of technology inform the practice of the key informants. Specifically, KII respondents were asked how they stay up to date on adolescent health issues. Respondents provided a variety of methods for staying up to date, including reading literature in journals, attending conferences, referring to key websites, signing up for Google alerts, and being members of listserves specific to adolescents health and medicine. As noted by one respondent, there is "wide variety" of ways to stay up to date, "some are more passive. Some are more active." (KII 5)

Anything from paper journals that are delivered to my office to grand rounds--I go to national and regional meets as well where they're doing the latest paper…Or there are just different feeds that come into my email I sign up for… They send me articles and the latest information about pediatric and adolescent health. So some is more passive and some is more active. (KII 5)

Read literature and talk to the other faculty members that are here in adolescent medicine…I also go to conferences where there are training sessions around different areas that I'd like to learn about. (KII 13)

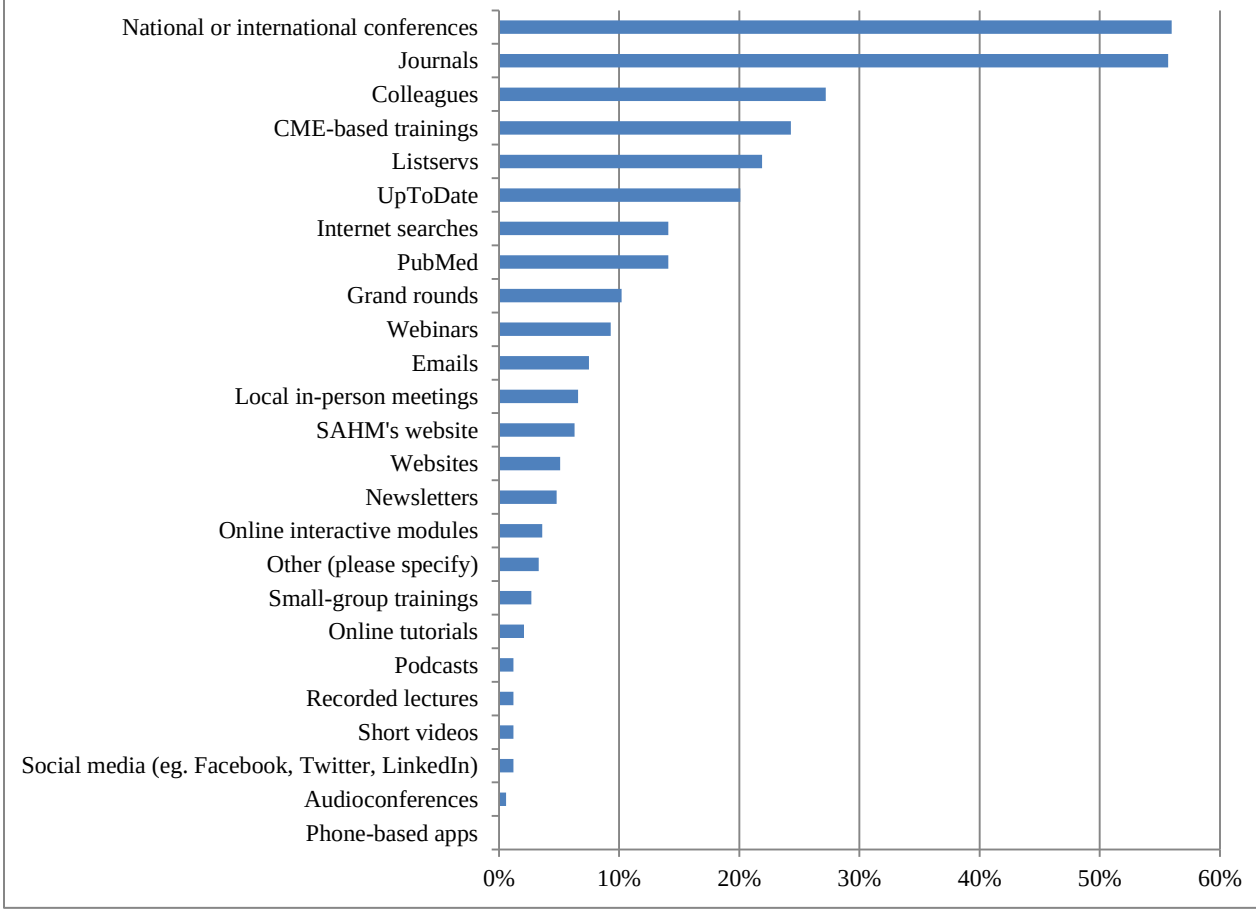
Well, I think there's certainly a lot of list serves I rely on. The listserve from SAHM. I really like the [SAHM's Weekly Adolescent Health News] Roundup. I think that's helpful. (KII 11)

When asked the three most important ways they access information regarding the care of adolescents, WBS participants reported they stay up to date and access information on adolescent health most commonly through:

1. National or international conferences (56.0%)
2. Journals (55.7%)
3. Colleagues (27.2%)

Figure 7 shows other common WBS responses. Additional ways WBS respondents access information about adolescent health included: SAHM's Weekly Adolescent Health News Roundup, teaching trainees, research projects, PREP AM, specific journal articles on-line (not just reading topical journals), writing review articles, NASPAG and SAHM listservs, classes that go towards earning a degree, and best practices websites (CDC, AAP policy statements, etc.).

Figure 7: How Providers Stay Up to Date on Adolescent Health Topics, WBS



Barriers to Accessing Information

Key informants discussed several barriers to accessing information and staying up-to-date, including time constraints on the part of providers, difficulty in filtering out the important information, the need to receive information in digestible chunks, being inundated with email and paper, concerns regarding the reliability of information, and the need for resources to be centralized. As noted by some respondents:

> *[Technology provides] this sense of immediacy…but it also doesn't provide the quality control to know which part of that piece of that information that you're reading or looking at is both accurate and up-to-date is problematic. (KII 30)*

> *I find it really hard to know what to focus on, and I get frustrated sometimes when people say, "Oh, haven't you just seen that recent article. There's a big article on that that's just come out." And I think, "No, I didn't see it that. How did I miss it?" These are physical articles that are specific to adolescent medicine and I missed it. So it's quite difficult. (KII 10)*

> *The concern is always—how do we develop trusted sources? How do we have some kind of vetting that these studies or these innovations have been validated in some way, or here are the limitations of them, because I worry sometimes that there's just a lot of junk out there, like around vaccinations. Not good science. (KII 12)*

As with training methods that utilize new technology, some respondents expressed concern about using new technologies to stay up-to-date. Some key informants discussed needing to become accustomed to using technology while other expressed a lack experience with some of the newer forms of technology, especially as compared to newer providers. For example:

> *I'm sometimes almost technologically-phobic. Once I get comfortable with it, I'm pretty agile. I think I learn. But I think there's a learning curve for me. But I think with young people, and I'm talking about residents, fellows, junior faculty, they are really quite nimble and learn quickly if it provides them feedback, it's usable, it's quick. Short messages, really up-to-date information. I think you get rapid acceptance of it. (KII 6)*

> *I mean, you're talking about older people who don't have recent information suddenly going on Facebook to get it? I don't think so. (KII 16)*

Role of Technology in Practice

Key informants were asked about the role of the internet, social media, and technology in their practice. While, as previously noted, some key informants discussed their comfort, or lack thereof, with technology, when asked about the use of technology in clinical practice, respondents largely indicated they used technology in some capacity in their practice. Many key informants recognized that technology and the internet are here to stay:

> *I think everyone looks to the internet as their first source now for whatever they need, whether it's what are the new recommendations on treating gonorrhea or what's that actor's name that I can't remember from that movie. So I think the more we can try to make sure that good quality information is easily searchable, the better we are. (KII 11)*

> *"How are you using the internet in your work" is sort of like if you were to go back 20 years and ask somebody, "How do you use the telephone in your work?" It's a transparent environment right now with regard to digital information, and the potential for interactive communication. So I'm not sure that anyone can actually separate out what of what they do is "internet," as opposed to traditional media, since the line between those has really fuzzed out. (KII 15)*

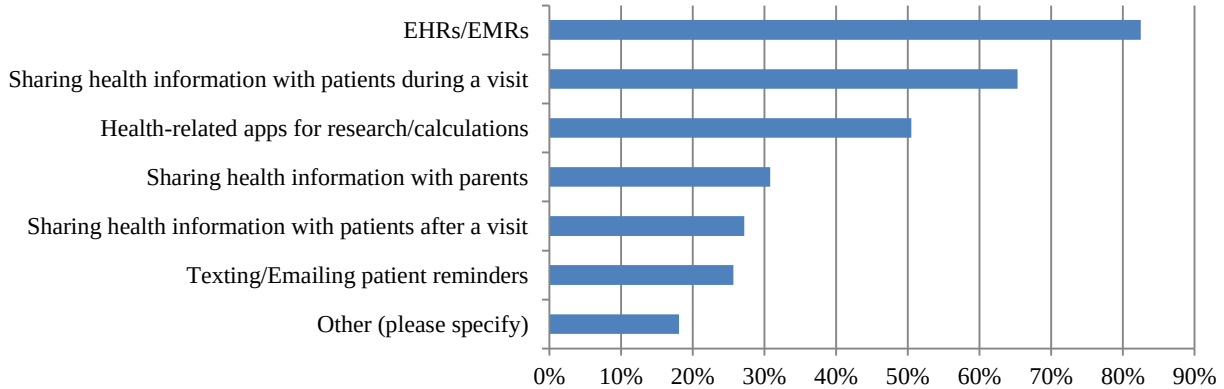
Key informants discussed a number of ways they commonly use technology in their clinical practice including: electronic health or medical records (EHRs/EMRs); referring patients and their parents to websites or using the internet to print patient/parent education materials; and, utilizing web-based screening tools. They also discussed using their personal mobile devices (i.e., iPhones, iPads, etc.) in a variety of ways, including: looking up medications (particularly doses or schedules); finding clinical care guidelines; and texting and/or emailing with patients to share results or remind them about appointments. A small number of key informants also discussed the use or potential of telemedicine, particularly for more rural areas.

Based on the KII discussions, WBS respondents were also asked the three most important ways they use technology in patient care. **Figure 8** represents WBS respondents' top three uses, which included:

1. EHRs/EMRs (82.5%)
2. Sharing health information with patients during a visit (65.3%)
3. Health-related apps for research/calculations (50.5%)

In addition to selecting from available topics, WBS respondents also noted a number of other important uses of technology in patient care, including: looking up product information; communicating or sharing health information with peers or other members of the treatment team; web searches for evidence-based medicine/best practices/clinical care guidelines (e.g., UpToDate) or to conduct literature searches; telemedicine; and online CME training.

Figure 8: Most Important Uses of Technology in Patient Care, WBS



Of note, several WBS respondents reported either that they did not use any technology in clinical care or that they were not providing clinical care. Others reported they could not list three ways they utilize technology in clinical care. As detailed in the KIIs, this may reflect both poor access to technology at sites where they provide care as well as a lack of comfort with or resistance to the use of technology in practice. As stated by one WBS respondent when responding to a request for additional suggestions: *"I think, at least me, I feel overwhelmed with technology"* (WBS respondent). Another WBS respondent wrote in:

> *There are too many limitations in our patient population/work environment to make use of many of the technologic tools we would like to use. Providing resources to help providers work with hospital committees, risk management folks, IT, etc., would be helpful in deploying these technologies more quickly and effectively. 21st Century Tools constantly run up against 20th Century attitudes and resistances. (WBS respondent)*

This aligned with limitations of technology expressed by one of the KII respondents:

> *One of the major limitations with technology and for providers and so forth is how fast can you get the information you need, how easy is it to carry it, and who can I connect with? And when you're in a hospital of a large-scale size, there's a lot of metal. And so you can't always get reception. So not only do you have the rules around HIPAA, you have all the physical structure impediments. (KII 5)*

The majority of the KII discussion about the use of technology in practice focused on the three topics selected by WBS respondents as most important ways they use technology in patient care— EHRs/EMRs, sharing information during patient visits, and mobile health apps—as well as discussion on the use of social media.

<u>EHRs/EMRs</u>

Several key informants expressed sentiments about the vast improvement EHRs/EMRs have made to clinical practice, including the ability to access resources and clinical decision-making tools, while also expressing drawbacks and limitations of the current system:

> *Medical records, I think, are a wonderful improvement over what I used to do when I started practice, you know, having electronic records. I think the shortcoming to that is that there are too many different kinds of records, and they don't speak to each other. So it's fragmented. (KII 2)*

> *EMRs are quickly becoming universal, but they're not quite there yet. And the level of utilization and the way they're utilized in different settings, I think I access four different EMRs just throughout the week and during patient care. Maybe five, depending on what my inpatient duties are then. And so all those EMRs have really good clinician decision modules that help guide some clinical decision-making and protocols. (KII 22)*

A number of key respondents also expressed concerns about confidentiality for adolescents within EHRs/EMRs, as exemplified by this key informant:

> *We do have our electronic record linked up to connect with us, but we don't do it for adolescent patients because there's a confidentiality issue…So we want to be careful about it. (KII 3)*

<u>Sharing health information with patients during a visit</u>

The majority of key informants who were practicing clinicians shared stories and examples of how they use technology, particularly the internet, to share health information with patients or parents during a visit. Providers spoke of a desire to ensure patients visit the "right" websites when they go online to look up information themselves as well as the variety of ways the internet can be used in practice. For example:

> *I almost always have a web browser up and ready if I'm in a patient care setting where I have good access to computers. (KII 22)*

> *I'll show them, "I want you to go to this website. Here's where it is." I have them punch it into their phone so that they don't forget the website. (KII 6)*

> *A lot of adolescent medicine is providing resources to patients. So I use the internet to look for resources and print out information for them. I use the internet because I email with patients and families. And I use the internet because we have an electronic health record and we have a patient portal. And so I use the internet to engage with my patients after clinic. We also have a web-based screening tool in our clinic that I designed. (KII 23)*

Of note, some KII respondents expressed a need for additional websites and patient resources that were age appropriate and youth-friendly.

> *The internet is the way to go…sending teens and parents to the internet is absolutely going to be the future, but we've got to do it better than we are…the materials that are on there now are either stupid, patronizing, too confusing, too much, or dumbed down and then they don't reach the level that teenagers need. (KII 1)*

> *As I said, having medical information at your fingertips, I use all the time and it just really speeds up care and facilitates good patient care. And I think that since patients are using technology, that the more clinicians use technology, I think the patients can relate to that interaction. (KII 7)*

<u>Mobile Apps</u>

The majority of key informants highlighted their use of mobile apps due to their ease of use and access, particularly when treating patients or while in clinic.

> *There are also a lot of situations where I don't have access to the computer. Again, probably my most frequent access is on my phone. And so I use a lot of apps. An awful lot of apps….from knowing the right code to pick for a billing sheet, to trying to remember a specific orthopedic exam maneuver or test for...I've kind of given up on the idea that I'm going to remember all of it….And I think I do a better job if I don't try and remember everything. (KII 22)*

> *They're easily accessible, quick, generally easy to use…Really it's the instant availability of it. For example, Epocrates, I go there for the dose of a drug or its interactions, and I know I'm going to get it straight away…I think it's kind of having filtered information without having to search. It's kind of right there. (KII 10)*

> *I don't think we need an app for every area of health, but…where there is this really complicated huge chart, not having that on the wall, instead having it accessible on your phone or tablet, that…makes sense to me. (KII 11)*

However, others informants discussed the idea that providers reliance on mobile apps serves as a "crutch" that may represent a failure in clinical practices. While some more experienced providers discussed this idea in terms of their younger colleagues, others discussed it in more personal terms. For example:

> *I hadn't seen a PCOS patient in several months and pulled up stuff on it very quickly before I went into the room with the patient, because I hadn't seen it in a long time and I hadn't really done much with it in a long time. That, pulling it up on the website for a few minutes beforehand, didn't really prepare me for all the questions that she had about it. Maybe if I didn't have that as a resource—others might call it a crutch—I may have been better prepared to answer those questions on the fly. (KII 31)*

Some of the providers interviewed also indicated that they don't use mobile apps and noted the generational difference in their use. As observed by one key informant in reference to fellows and residents:

> *I think they would have, perhaps, a different perspective than the senior types would. (KII 6)*

Key informants also discussed ways in which apps could be beneficial to patients, particularly in a self-management support capacity. Some mentioned showing health information apps to patients, including apps they use themselves.

> *And then for patients, with a lot of my HIV-related patients, there's a couple of different apps that are interactive that remind you to take your medications, and then you have to respond. You have to tell it yes or no in 15 minutes…And I have patients download it to their smartphone as an adherence tool for HIV medications. (KII 33)*

And then I have sort of the type that I use personally for my own health and wellness that I sometimes will show to my patients as an example of something that they might use for themselves. (KII 31)

Key informants also brought forth concerns with health apps regarding content for patients, endorsement by physicians, and confidentiality.

I think my biggest concern here — and I think this is a big need for the medical community — is that I think there's something like 10,000 health-related apps out there now…and I don't know of any of them that have been evaluated for efficacy. So I think the medical community would be at a loss as to figure out, "Are these even things that I should endorse or that I should support for my patients?" (KII 28)

I think that in terms of how things are being used in technology, that we have a long way to go, to really figure out how to use this technology the right way. In order to provide confidential but responsible care, and I think we're not far enough…just doing it the way we've done it for however many years on paper and in person, that we haven't solved. (KII 7)

Social Media

KIIs represented a range of interest in and use of social media, particularly regarding the role of social media in training providers or disseminating information. There was significant disparity, particularly generationally, in the KIIs in the use of social media and its utility.

I don't use social media at all...I purposely avoid social media. (KII 32)

I think for the younger providers, it's probably helpful. I think people my age may not use it that much. It's just not in my comfort zone. (KII 18)

That sharing, that learning, that spontaneous exchange, that's what goes on at those meetings. And that's my point about Facebook. You can create these virtual communities, learning communities, whether they're doctors or parents or patients. That's what I mean about improving your practice, is that you can often get tips and ideas and suggestions you hadn't thought of before. (KII 7)

But again, what happened to social media — just naturally because of the way that it functions — it has to be short nugget information, and then I'm more likely to look at it. So I think there's a role. (KII 17)

Key informants distinguished between different uses of social media and its utility in each role.

I think social media is certainly something that we need to be aware of. I don't know if we can use social media to train providers. I think that we can use it to promote resources that exist and let a wide audience know about them…I like to see social media more as a way to drive people to another destination to get more information, either to the SAHM website or see wherever it is that this information is going to be. I see it as a way to catch someone's attention and bring them to the real source. (KII 11)

I see it as a place to share resources…I don't see a lot of people who are adolescent medicine folks using it just for the sake of staying connected with one another. (KII 28)

KII respondents also expressed concern regarding what they considered to be appropriate use of social media both in training and clinical settings.

I think my question about the whole social media thing, and provider training, is kind of a careful consideration of how much is appropriate, and how much is too much… I get a little concerned about trying to medicalize social media in a way that goes counter to how much people are using it, which is really to increase their social support with their friends and their family. (KII 28)

No, I think it's a real no…I think there's a bit of a divide between is Facebook for your own home personal life or your work life, and I think the majority of people would say it's for their home personal life, and I would too. (KII 10)

KIIs highlighted concerns involving confidentiality and privacy with regards to using social media for training or in clinical practice, both for themselves and for their patients.

I think the privacy issues with Facebook, given it's a business and they are continually seeking different ways to undermine people's privacy, I don't know how comfortable providers would be using Facebook for professional training or certainly engaging with adolescents over Facebook I think would be hugely problematic for providers. (KII 20)

[Facebook is] not a particularly secure media platform, and so depending on the nature of training, I think there have been concerns raised about using public platforms, especially with individual clinical information that may not meet the HIPAA test, in terms of security. (KII 15)

While specific social media sites were discussed (including Facebook, Twitter, Instagram, LinkedIn, and Reddit), none of them emerged as a leading source of training or to be used with patients.

SAHM's Website

KII respondents were asked about their current use of SAHM's website as well as what would increase their likelihood of using it in the future. It is worth noting that the KIIs were conducted just as SAHM's newly revamped website was being launched. While some respondents were familiar with the redesign, respondents largely stated that they do not use SAHM's website often or did not have a sense of what was available on it. Many respondents indicated, as said by one respondent, that SAHM's website was *"not really a go-to place"* (KII 18) except to register for the SAHM Annual Meeting or access SAHM's position statements, or *"to look up address and contact information for people if I'm trying to find them"* (KII 15). Several respondents expressed sentiments similar to the following:

I pretty much have gone on the SAHM website to register for the annual meetings or something like that, that I do my membership. Do something that I'm forced to do versus just kind of looking around the website. (KII 4)

Several respondents also highlighted that they see the website as specifically intended for use by providers and not for patients:

I only really use the SAHM website for me. I never would refer a patient to it. That's probably wrong, but I haven't even thought about doing that. (KII 10)

They have the college student brochure. They don't really have a lot of things like that. (KII 7)

KII respondents did express interest in using the website in the future if more tools and resources were available and they were made aware of the new content:

I guess honestly I've never been aware enough of what's on the SAHM website to think that it is particularly relevant to me. I think I would need a lot more coming out at me about, "Look what we have here and how this might be useful for you." And more familiarity with what they do have there…then I'll know, "Oh, okay. Maybe the SAHM website is worth checking for this." (KII 4)

I think that probably one thing that would lead me to use it more would be if there was a more routine way to notify the listserv or some other mechanism when new materials are posted. (KII 27)

Key informants indicated that having patient education tools and materials and health promotion materials on the website would be useful to them—either a packaging of existing tools and resources or new tools created by SAHM.

> *I think if the materials there were samples that we could use for health promotion--those are things that I would use. So if I was looking for…resources and information related to STIs, for example…Can I go on there to get a slide set of a certain STI? Or pregnancy-related information that can be technical that I could share with parents or youth that are participating in a program. (KII 28)*

> *Downloading pamphlets or getting a digital thing to put on our website or give patients, I probably would do that…If I needed to give somebody something with paper, or there were some apps that I could say, "Hey, I want you to download this app," I would do that for sure. (KII 2)*

Other KIIs specified ways in which the website might aid them in their clinical practice, such as linking to clinical care guidelines or other resources.

> *To have something that I need to know really fast, like what I need to do in a situation. So kind like an UpToDate website…but for adolescent health issues…Maybe having links to all these guidelines you might need, like the CDC STD treatment guidelines, and then CDC has some new contraceptive guidelines out. So links to that so I can go to that one place and look something up. (KII 18)*

> *If they had truly helpful clinical tools, not a ton of esoteric research articles and position statements. Like a summary of STI treatment guidelines and the MEC criteria… The stuff we used to carry around in our pockets before. As doctors in training before the internet, we had things like the Harriet Lane Handbook…Kind of pearls, like clinical pearls. (KII 17)*

> *I actually think SAHM's website is evolving, and I can't say that I've used SAHM's website very much at all. I think with the new format that was just put out for the website, it's going to be, the ability to put these kinds of materials and linkages on that website. (KII 7)*

Several key informants identified ways in which SAHM could, and should, become a clearinghouse for information, clinical care guidelines, patient education materials, and evidence-based research and programs.

> *Something like that [a portal of resources] can then become a resource for all adolescent medicine specialists… I could envision SAHM having a clearinghouse website that ends up being…this place where providers can go and get the latest information and relevant popular media as well as news articles about things that are for their profession, as well as training. And then there…could be a place where apps that have been evaluated get reviewed and get the evidence base that's documented. (KII 28)*

> *I think that could be a nice one-stop shop…I think SAHM could be, an idea clearinghouse for all things adolescent, including materials...[for] adolescents themselves, for patients, for parents. (KII 12)*

> *I feel like I think of SAHM more as a place to look at what's going on in the community of adolescent medicine, what providers are there, what are the policy goals around adolescent medicine… I haven't looked at it as a source for what are the best practices, and I think I would like to see more of that on there. (KII 11)*

One KII respondent highlighted that SAHM's website could serve as a resource and means for improving care for adolescents not only for providers who are adolescent-specialty trained but also for more general providers who see adolescent patients.

> *If we wanted [SAHM's website] to be a resource for all docs taking care of adolescents, then they should have free access to those kinds of materials… I would love for the SAHM website to be kind of the go-to place for information on adolescent health…That would be a huge resource to me personally, even though I am in the field,*

so I think that would be a tremendous resource for providers around the country and internationally. And would really also just improve the health that we can deliver to adolescents. (KII 32)

Concerns emerged, however, highlighting the challenge of maintaining the information contained on the website and keeping it up to date.

I think the most likely thing I'd pull off SAHM's website would be patient education stuff. I think I would be less likely to go there for treatment guidelines for any individual patient… I'm looking for the most up-to-date information, so I would be worried about how up-to-date things would be on the website, like who would be keeping things up-to-date with new articles. I think though patient education materials are useful for much longer periods of time. (KII 24)

Finally, a few KII respondents discussed that SAHM's website could play a role in developing research networks amongst adolescent health specialists.

There's not that much on it and it's not up to date. I think certainly SAHM has a role in this, and I think the development of a research network is a really good idea. I think the research network needs to be focused and generally topically specific. (KII 30)

The kinds of things that I think are difficult to do, but I think would maybe make me sort of check it out more regularly would be…to really see what kind of research other people are doing in the research areas that I'm interested in…It would be interesting to see what people were up to and what kind of active projects they had that maybe they hadn't published yet or if there was a way of encouraging potential collaborations and resources, that kind of thing. (KII 20)

Patient-Centered Outcomes Research

Several key informants focused on the domains of PCOR—patient informed decision-making, improved healthcare delivery and outcomes, and production and promotion of evidence-based information. For example:

Specialists need to have a deep understanding of adolescents and adolescent health care issues. And they need to have a very sophisticated understanding of science that contributes to improving adolescent health, evidence-based practices and policies, and the limitations of the evidence. And they need to be able to communicate and develop strategies and approaches to disseminate that depth of understanding in whatever field of work they choose to do, whether it's in a health care setting or academics or whatever. (KII 25)

Key informants addressed the domains of PCOR as it relates to a number of key adolescent health topics, including contraceptive use and substance use

I think that… having access to the reproductive health services and contraception, and the latest thing that people really believe is going to make a big difference. (KII 7)

Respondents also addressed improving healthcare delivery through youth friendly services and having the knowledge and skills necessary to best communicate with adolescents and their parents.

I think one of the most effective interventions that I see is actually having dedicated teen clinics, even if that's sort of…within a regular practice, where not only can you kind of market to the patients and the parents as this is a specific time for them to come in, but everyone who's providing at that time, the clinical providers and the administrators, kind of switch gears into this is the time to be especially adolescent friendly… because that can really be a helpful way to get that care delivered and get the patients there at the right time. (KII 11)

The key skills you need to care for adolescents are…to be able...to connect with them, to talk with them, and to have a knowledge of confidentiality and how to interact with both the teen and the parent and family members. (KII 24)

In particular, key informants emphasized a need for more evidence-based information:

We [need to] understand what everybody means by preventative health care, and…quality indicators of that health care…[These are] really important elements that we need to better understand… evidence-based practice,…preventative health care and screening that this population requires. (KII 30)

We need to…cross-collaborate with people…in terms of demonstrating efficacy of various prevention and intervention efforts. (KII 30)

But as noted by the following quote from one key informant, providers and researchers in adolescent medicine are still trying to create an evidence-base for successful interventions.

Everyone's trying to figure out, on the national level, what works and what doesn't work. That is a work in progress. (KII 5)

Concluding Themes and Recommendations

Adolescent health and medicine providers who participated in the formative research for the Youth Provider's 2.0 initiative highlighted many important issues for the training of all providers who see adolescents and young adult patients. Respondents clearly identified the need to increase the number of adolescent medicine providers and articulated that having a small, select group of specialists was not adequate to care for all adolescent patients. While respondents highlighted the importance of adolescent health and medicine, sentiments underscored the idea that there are two different workforces seeing adolescents—those who are specialty trained and those who are not. Respondents also identified differences in training needs of new and ongoing learners. Respondents felt it important that SAHM address the training needs of this broad range of providers who see adolescents as well as the training needs of those just beginning their training and those who are already board certified and practicing.

Respondents discussed the components of effective training, which included considerations of different training methodologies as well as barriers to training. Cost emerged as a key barrier, although respondents indicated that they would be more likely to be willing to pay for training if CME was available. Respondents also identified the need to provide training that serves a variety of learning styles, works within common time constraints, and varies in levels of interaction.

Respondents clearly thought technology may provide ways of circumventing some of the barriers to accessing training, although some respondents expressed concern about the replacement of more traditional, in-person training methods or felt wary of using new technology because of a lack of experience. Others expressed both the real promise in using technology-based training methods and the need to improve the use of technology for training purposes before it is too heavily relied upon. Respondents also emphasized the increasing use of technology in clinical practice, to stay up to date, in patient care, and in communication with patients. Respondents emphasized their use of mobile apps and EHRs/EMRs. Generational differences in comfort with and overall use of technology were expressed by several respondents.

Respondents also highlighted the need for building the evidence base regarding key adolescent health topics and interventions, which could inform both clinical care and training of providers in patient informed decision-

making. The training approaches and methods highlighted in this report can be used to disseminate PCOR in ways that match both the interests and the needs of the variety of providers that serve adolescents.

The following recommendations are based on the results of the KIIs and the WBS:

- Resources and training materials and tools need to be developed and shared with providers on the topics identified as primary adolescent health issues: sexual and reproductive health (e.g., contraception, STIs, HIV, pregnancy), access to care (e.g., transition to adult care, insurance access), mental health issues (e.g., depression, referral/access, screening, treatment), positive youth development (e.g., self-esteem, parent communication), and healthy eating/nutrition.
- Training opportunities should be nuanced and reflect the broad range of providers seeing adolescents and their varied levels of training, including whether they have specialty training and length of time they have been practicing. Both populations need training and materials focused on sexual and reproductive health and mental health/psychiatric issues. Key training needs identified for non-specialty trained adolescent providers included additional emphasis on psychosocial assessment, providing confidential care, and adolescent growth and development. Specialty trained adolescent providers need focus on motivational interviewing, advocacy, and interdisciplinary teamwork.
- Training should be made available to adolescent providers in formats that are easily accessible to providers within their time constraints, low cost or free, and that allow provision of CME.
- Given the limited number of providers who have adolescent specialty training and with fewer trainees going into adolescent medicine, SAHM should explore training or certificate programs for those not board eligible or those who are interested in learning more about caring for adolescents but may not be interested in a full three-year fellowship.
- A range of providers are using technology in practice; however, all providers are not comfortable with different modes of technology or may be unaware how best to use technology in their practice. Trainings and supports should be developed to support providers who are less adept at using technological modalities in training and clinical care settings.
- SAHM's website should be updated with additional content so it can serve as a clearinghouse for information and training around the key adolescent health topics identified and a way to access PCOR that can inform AM practice.