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Gregory L. Gaskin, Christopher A. Longhurst and Arash Anoshiravani

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# Internet Access and Attitudes Toward Online Personal Health Information Among Detained Youth



**WHAT'S KNOWN ON THIS SUBJECT:** Detained youth represent a vulnerable pediatric population with worse health outcomes than their nondetained peers. To date, little work has been done to determine whether health information technologies may be effectively used to improve the health of this underserved population.



**WHAT THIS STUDY ADDS:** The Internet is accessible to youth involved in the juvenile justice system. A securely accessible online system to store detained youth's health information may be both feasible and acceptable for engaging these adolescents more actively in their health care.

## abstract

**OBJECTIVE:** To assess Internet access and usage patterns among high-risk youth involved in the juvenile justice system, and to determine if health information technology tools might play a useful role in more actively engaging this population in their health care.

**METHODS:** A sample of 79 youth between the ages of 13 and 18 years old underwent a structured interview while detained in a large, Northern California juvenile detention facility. After an institutional review board-approved assent/consent process, youth discussed their typical Internet use when not detained, as well as their attitudes toward online access to their personal health information (PHI).

**RESULTS:** Detained youth from predominantly underserved, minority communities, reported high levels of access to the Internet while outside of the detention setting, with 97% reporting using the Internet at least once per month and 87% at least weekly. Furthermore, 90% of these youth expressed interest in accessing their PHI online and sharing it with either parents or physicians.

**CONCLUSIONS:** Detained adolescents describe unexpectedly high usage of the Internet and online resources when they are outside of the juvenile hall setting. These youth show an interest in, and may benefit from, accessing their PHI online. Further studies are needed to understand the potential health benefits that may be realized by engaging this population through online tools. *Pediatrics* 2012;130:914–917

**AUTHORS:** Gregory L. Gaskin, BS,<sup>a</sup> Christopher A. Longhurst, MD, MS,<sup>a,b</sup> and Arash Anoshiravani, MD, MPH<sup>a,b,c</sup>

<sup>a</sup>Department of Clinical Informatics, Lucile Packard Children's Hospital, Palo Alto, California; <sup>b</sup>Department of Pediatrics, Stanford University School of Medicine, Stanford, California; and <sup>c</sup>Santa Clara County Juvenile Custody Institutions, Santa Clara Valley Medical Center, San Jose, California

### KEY WORDS

health information technology, Internet, medical records, adolescents, juvenile justice

### ABBREVIATION

PHI—personal health information

Mr Gaskin contributed to the design of the study and took responsibility for the data collection, contributed to the interpretation and analysis of the data results and took the lead on drafting the article, and ensured that all authors reviewed and contributed to the article and approved the final draft. Dr Longhurst contributed to the analysis of the data and the framing of the article, provided substantial comments and revisions to the intellectual content and execution of the article, and approved the final version of the article. Dr Anoshiravani conceived of the study idea and contributed to the design and execution of the study, contributed to the interpretation and analysis of the data results and made substantial contributions to the intellectual content and execution of all drafts of the article, and approved the final version of the article.

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Address correspondence to Gregory L. Gaskin, BS, 770 Welch Rd, MC 5812, Suite 434, Palo Alto, CA 94304. E-mail: [glgaskin@stanford.edu](mailto:glgaskin@stanford.edu)

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Each year, nearly 2 million adolescents pass through the juvenile justice system in the United States.<sup>1</sup> A combination of low socioeconomic status, poor health education, high-risk health behaviors, and poor health care access contribute to poor physical, mental, and reproductive health outcomes among these youth.<sup>2,3</sup> Notably, few interventions have demonstrated any lasting impact on high-risk detained youth's health knowledge, behaviors, or future outcomes.<sup>3,4</sup> To our knowledge, no data exist about the potential role of health information technology in addressing these issues for youth involved in the juvenile justice system.

Previous authors have described a "digital divide" separating the technological "haves" from the "have-nots," suggesting that members of different socioeconomic or racial groups may have differing levels of access to technology and the Internet.<sup>5,6</sup> Indeed, health information technology, such as personal health records and short message service (SMS) messaging reminder systems have achieved lower penetrance in underserved communities than in higher income areas, perhaps as a result of a perceived differential in comfort and technological sophistication between those populations.<sup>7</sup> However, more recent research suggests remarkably high levels of computer and Internet use among underserved and minority populations, particularly for adolescents in those groups.<sup>8</sup> High levels of Internet usage have been described even for such high-risk groups as homeless adolescents<sup>9,10</sup> and HIV-positive youth.<sup>11</sup>

Not only do adolescents and young adults of all backgrounds accept and expect Internet access, but this younger generation is actively seeking health information online,<sup>12,13</sup> with teenagers from low income households being twice as likely to search for health information on the Internet.<sup>14</sup> To date, no

work has been done to examine the Internet access and usage among youth involved in the juvenile justice system and their attitudes toward having online access to their own health information.

## METHODS

A total of 79 detained youth between the ages of 13 and 18 years participated in this study, which was conducted in a large Northern California juvenile detention facility. After an institutional review board-approved assent/consent process, participants underwent a 5- to 10-minute structured interview with 1 of the authors (Mr Gaskin) during their visit to the juvenile hall medical clinic. The interview schedule was designed specifically for this study and covered the youth's typical Internet use when not detained, as well as their attitudes toward having online access to their personal health information (PHI). Of the 86 youth who were invited to participate, 79 (92%) accepted and all 79 completed the interviews. Descriptive statistics were used to analyze the results.

## RESULTS

Ninety-seven percent of study participants described using the Internet at least once per month, and 87% reported using the Internet at least weekly (Table 1). Detained youth reported feeling comfortable using the Internet, assessing themselves between 3 and 4 (mean: 3.8) on a 5-point Likert rating scale of comfort (1 = "extremely uncomfortable using the Internet," 5 = "extremely comfortable using the Internet"). The most common means for accessing the Internet were personal computers or laptops (65%), followed by cell phones or other mobile Internet-enabled devices (42%), with many reporting using both.

The large majority of participants (90%) believed that it would be useful for them to be able to access their health information through the Internet, and

**TABLE 1** Study Population Demographics and Characteristics Regarding Access to the Internet

Characteristics	N	%
Gender		
Boy	66	84
Girl	13	16
Race		
Hispanic <sup>a</sup>	55	70
White <sup>a</sup>	17	22
African-American <sup>a</sup>	9	11
Asian/Pacific Islander <sup>a</sup>	7	9
Other <sup>a</sup>	3	4
Age, y		
13	1	1
14	3	4
15	5	6
16	9	11
17	11	14
18	50	63
Internet usage		
≥1×/d	50	63
≥1×/wk	69	87
≥1×/mo	77	97
Comfort using the Internet		
Mean (on 1–5 scale)	3.8	NA
Locations for Internet access		
PC or laptop at own home <sup>a</sup>	51	65
Phone or other mobile device <sup>a</sup>	33	42
PC or laptop at friend's, relative's or significant others' home <sup>a</sup>	28	35
Library <sup>a</sup>	19	24
School <sup>a</sup>	5	6
Community center <sup>a</sup>	3	4

NA, not applicable.

<sup>a</sup> Subject may report more than 1 response to question.

most reported wanting access to medications (92%), immunizations (90%), and even sexually transmitted infections testing results (80%) (Table 2). The majority (52%) of the youth surveyed wanted to be able to share their information with others (primarily parents or guardians) in addition to their doctors. As long as the information was password-protected, the majority (85%) did not feel any concern about the privacy of their health information online. No statistically significant differences were found in our study population when comparing race (stratified into 2 categories: African-American/Hispanic versus all others) with Internet access or interest in having online access to their PHI ( $P > .1$  by  $\chi^2$  Fisher's exact test analysis).

**TABLE 2** Detained Youth's Attitudes Regarding Online Access to Their PHI

	N	%
Would you find it useful to have your health information automatically put online so you can look at it later?		
Yes	71	90
No	8	10
Of those who would find it useful, N = 71		
Who would you want to give access to your online PHI?		
Doctors	71	100
Parents/guardians	37	52
Significant others	3	4
What information would you want available online?		
Immunization record	70	99
Medication list	65	92
Sexually transmitted infection test results	57	80
Any privacy concerns with putting health information online?		
Yes	11	15
No	60	85
Any concerns about parents or guardians finding information?		
Yes	6	8
No	65	92
Any concerns about probation/law enforcement officers finding information?		
Yes	23	32
No	48	68

## DISCUSSION

This is the first study to demonstrate high levels of access to the Internet among youth involved in the juvenile justice system. These young people are comfortable with Internet use and welcome online access to PHI. The finding that 97% of detained youth had regular access to the Internet is remarkably similar to the 95% reported for all teenagers in a well-respected Pew Internet poll,<sup>14</sup> suggesting that, at least in this population of detained adolescents, the digital divide may

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have disappeared. Although the majority of participants reported accessing the Internet through a home PC, a large number also reported using a mobile device. Studies suggest that the future of Internet access will be from increasingly accessible and affordable mobile devices,<sup>14</sup> and it is likely that this trend will hold true for this high-risk population of youth, as well.<sup>15</sup>

Although the strong interest in accessing PHI online was unexpected, the expressed willingness to share that information with parents or physicians was surprising to the authors, especially given the trust breakdowns many detained youth have experienced in their lives.<sup>16,17</sup> In light of other studies revealing high levels of online engagement among teenagers,<sup>14,18,19</sup> these findings suggest that implementing online health information technology would be acceptable and potentially useful both during and after detention episodes for this population of youth.

This study's generalizability is limited by its focus on 1 juvenile detention facility in technology-saturated Silicon Valley; however, its findings should pique the interest of clinicians, researchers, and health informaticians involved in the care of high-risk, detained youth. Additionally, although we did not control for socioeconomic status among the study participants, the majority of youth detained in this facility tend to come from low-income families. Internal quality improvement data indicates that over half of our detained patients arrive with state

Medicaid benefits, a coverage rate that is roughly similar to populations of low-income children across the state.<sup>20</sup> Future studies would benefit from examining detained youth's Internet access and attitudes toward the electronic sharing of PHI in different geographic locations, with larger sample sizes and using sampling techniques that would allow for a more representative study population.

## CONCLUSIONS

Our results suggest that innovative health information technologies have the potential to address some of the health information challenges that high-risk, detained youth face when reentering their communities. A privately accessible online system to store detained youth's health information may be both feasible and acceptable to this population and could engage adolescents more actively in their health care needs. Future studies should focus on evaluating whether the collection and electronic sharing of detained youth's PHI improves their health understanding, care-seeking behaviors, and health outcomes when returning to their communities.

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**MORAL CODES SEEMINGLY SINK WITH THE SHIP:** *I thoroughly enjoy movies—not just the films themselves but researching their historical context. Like many people, I have been captivated by the sinking of the RMS Titanic. The story of its 1912 collision with an iceberg and subsequent sinking has been told many times, in many ways. One of the most famous popular accounts comes from director James Cameron's historically-informed but fictional 1997 film. The movie not only captivated audiences, but perpetuated the belief that sailors on sinking ships are more chivalrous than they may actually be. In the movie, and in real life, the women and children on the Titanic were given priority to get off the sinking ship while the captain remained with the doomed vessel. However, the events on the Titanic were more likely the exception, rather than the rule. As reported by Bloomberg (Sustainability: July 30, 2012), a recent study examining the survivors of maritime disasters showed that men actually survived more often than women or children, and only nine of 16 ship captains went down with their ship. The study examined the fates of over 15,000 people involved in 18 different maritime disasters occurring between 1852 and 2011, with results showing that men were about twice as likely as women to survive. Children fared very poorly. Furthermore, the captain and crew had a significantly better chance of surviving the disaster than did the passengers. The results suggest that the captain's orders can have a profound impact. In the case of the Titanic, the Captain ordered that women and children be saved first. Historically, only about 20% of women survived maritime disasters, but almost 70% of the women and children aboard the Titanic survived. Even 100 years after the Titanic sank, the voyage still fascinates us. While “women and children first” may not have been the norm at the time, it is hard to imagine that it is not the norm now.*

*Noted by Leah H. Carr, BS, MS-III*

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