

Editors' Note

IOS Press is the publisher of *Information Services and Use (ISU)* as well as the book series, *Studies in Health Technology and Informatics (SHTI)*. Currently in preparation for publication in 2019 is the volume, *Health Literacy in Clinical Practice and Public Health: New Initiatives and Lessons Learned at the Intersection with Other Disciplines*, co-edited by Robert A. Logan and Elliot R. Siegel. This is the second health literacy book published in the SHTI series, the first was in 2017 which contained papers deemed in scope for *ISU*; and co-published in a special issue of *ISU* during that year [1].

Several of the health literacy interventions in clinical practice and public health as reported in the new *SHTI* volume employ the use of communications tools and strategies, including contemporary information and/or communications technologies and resources. These 9 reports have been selected for co-publication in this Special Issue of *ISU*. It is anticipated a second Special Issue may be published later this year, which includes additional papers from the *SHTI* volume that are still in development.

But first, what is health literacy? A widely accepted definition is provided by the National Academies of Sciences, Engineering and Medicine's (NASEM) Roundtable on Health Literacy: "the ability to obtain, read, understand, and use healthcare information in order to make appropriate health decisions and follow instructions for treatment." More recent definitions focus on the health system's capacity to adjust to people's complexities in addition to assisting consumer capabilities to understand medical information and navigate the health care delivery system. The newest definition, from the World Health Organizations, identifies health literacy as one of the social determinants of health.

The papers selected for this issue also reflect diverse definitional perspectives about health literacy. For example, **Gillian Christie and Scott Ratzan** suggest how to enlarge patient/caregiver capabilities throughout the lifespan, which enhances the NASEM's individual-oriented definition. Similarly, the essay by **John David Ike, Rachel Postlethwait and Ruth Parker** suggests how to advance health practitioners' apperceptive skills and better appreciate patient needs during the course of medical careers. The articles by **Sandra Hilfiker, Stephanie Santana, Megan Freedman, and Linda Harris; Jodi Duckhorn, Brian Lappin, Jessica Weinberg and Lee Zwanziger; and Terry Ahmed** suggest how health care organizations creatively respond to meet the complex information needs of patients, caregivers, and health care consumers. The article by **Susan Bartlett, Christopher Dezii, and Kimberly Sandt** describes how a pharmaceutical company resourcefully responds to develop improved health communication tools. The article by **Emily Peterson, Anna Gaysynsky, Wen-Ying Sylvia Chou and Camella Rising** discusses how health care organizations can respond imaginatively to thwart efforts that challenge the information needs of patients, caregivers, and health care consumers. The articles by **Suzanne Bakken, Adriana Arcia, and Janet Woollen** as well as **Ernestine Willis, Constance Gundacker, Melissa Harris, and Mahir Mameledzua** implicitly discuss health literacy as a social determinant of health and provide the results of interventions that enhance both individual skills and health outcomes.

Regarding this issue's selected articles (and their particular relevance for *ISU*'s readers), we begin with the launch 21 years ago of MedlinePlus.gov as a multilanguage health information resource freely available throughout the world. From the U.S. National Library of Medicine, MedlinePlus.gov provides access to trusted, reliable, and current health information for patients, families, and the general public - in easy to

understand language. **Terry Ahmed** reviews MedlinePlus's history and evolution from portal to search engine; multilingual content; the use of responsive design to facilitate access on increasingly popular mobile devices; the website's availability as a dedicated connected resource for health care provider's electronic health record systems intended for patient education; and its promotion of health literacy.

Providing health information online can dramatically increase the availability of life-saving information, and the shift to digital by many health organizations has been profound. Yet, barriers to access and use can compromise the promise of enhanced reach and improved patient engagement. **Sandra Hilfiker, Stephanie Santana, Megan Freedman, and Linda Harris** address how these challenges can be overcome to improve health literacy and health outcomes. The authors discuss practical, evidenced-based strategies to improve clarity and usability of digital health tools, and ideas for future research on emerging best practices.

Advancements in the utilization of immunizations have been a significant achievement in public health. However, some populations have not benefitted equitably, and consumers occasionally face concerted efforts at misinformation that have seriously challenged public health and safety. In the first instance, **Ernestine Willis, Constance Gundacker, Melissa Harris and Mahir Mameledzua** report on the use of web-based platforms and mobile applications to disseminate information that advances immunization literacy and decreases child health immunization disparities in low-income neighborhoods. Yet, the authors note the technology also introduces challenges in the form of data safety and security concerns, and significant investments in updating. Technology challenges of another kind are discussed by **Emily Peterson, Anna Gaysynsky, Wen-Ying Sylvia Chou and Camella Rising** in a paper that explores the impact and role of health literacy in peer-to-peer health communication contexts, such as social media platforms and online patient support groups. The authors explain the latter technologies may provide fertile ground for the deliberate dissemination of health misinformation, evidenced currently by false claims regarding the dangers associated with childhood vaccinations. In response, the authors argue for the need to inoculate users with health literacy skills enabling them to successfully identify and distinguish between evidence-based and non-evidence-based information.

Meanwhile, data visualization is an increasingly popular tool to help narrow the gap between individuals with low and high levels of health literacy skills and English proficiency skills. **Suzanne Bakken, Adriana Arcia, and Janet Woollen** report on their efforts with a Latino population in New York City to promote self-management and actionability. The authors used information visualizations as a communication strategy and employed culturally appropriate participatory design with the intended users (research participants, patients, clinicians) to optimize both the aesthetic design and the emotional effectiveness of the visualizations upon participant engagement with the information.

Communicating complex health topics to patients requires knowledge about the target audience's health literacy skill level, and message strategies that maximize clarity and minimize cognitive barriers for better understanding. This is especially important in the domain of risk communication involving regulated products such as medical devices and pharmaceuticals. **Jodi Duckhorn, Brian Lappin Jessica Weinberg and Lee Zwanziger** report on efforts by the U.S. Food and Drug Administration to develop message testing protocols with both internal testers and external volunteers to improve the effectiveness of their public communication. Similarly, the pharmaceutical industry has increased their direct engagement with patients regarding their use of individual drugs as part of marketing strategies. The latter is a departure from the industry's status quo that directs drug educational efforts towards highly trained medical professionals. **Susan Bartlett, Christopher Dezii and Kimberly Sandt** report on one company's efforts to develop a 'Universal Patient Language' that is a set of tools and resources which provide guidance on

communicating with patients - it is not designed for use by patients, rather the target users are people who create patient communications.

Gillian Christie and Scott Ratzan take the macroscopic view that health literacy is fundamental to sustainable health development across the lifespan; vaccination is an area that is singled out for intervention. In this context, Christie and Ratzan describe the need for leadership and investment in digital health communication to increase vaccine coverage as a social norm throughout the world. As noted in other papers, Christie and Ratzan suggest technology benefits are not always optimized due to poor design, unaffordability, and privacy concerns. The authors call for strong regulations combined with actions by technology companies to address the latter challenges.

Finally, **John David Ike, Rachel Postlethwait and Ruth Parker** describe a unique pedagogical program that uses the arts to engage with and promote health and health communication. TRACE is an intensive cultural immersion in Italy that encourages learners to focus on lessons related to what the arts communicate and how they enhance understanding. The program benefits from the use of information technology, social media, and online information resources that mirror the growing reliance on digital connectivity within health systems and the community at large.

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References

- [1] *Information Services and Use*, **37** (2) (2017), 101–252.