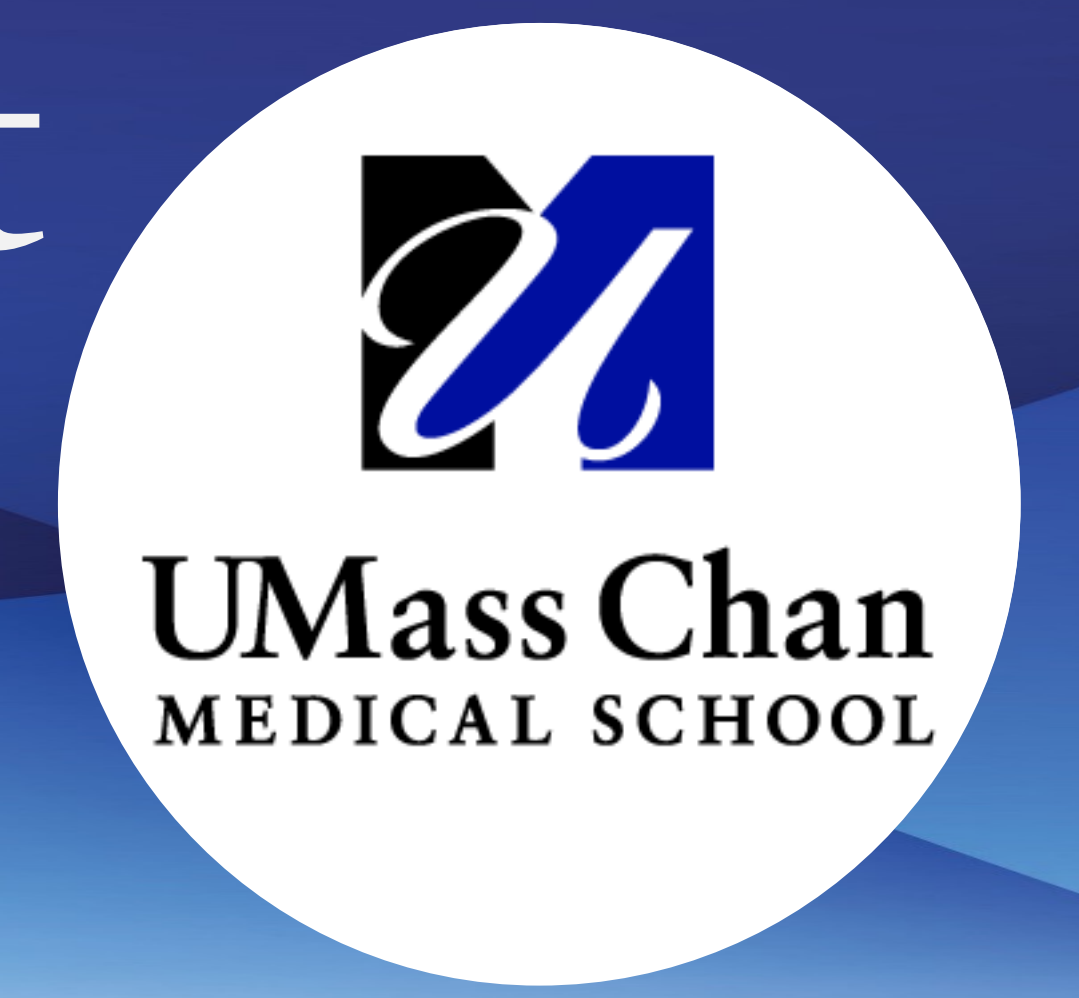


Congenital Cytomegalovirus Curriculum Development for Massachusetts Clinicians: An Interest Survey



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Background

- Congenital cytomegalovirus (cCMV) infection has many possible sequelae including deafness, long-term intellectual disabilities, visual impairments, seizures, microcephaly, or even pregnancy loss or still birth¹.
- When compared to similar congenital conditions, cCMV has the highest annual incidence and the lowest awareness² (Fig 1).
- Despite unclear methods for treatment, there are prevention strategies patients should be aware of. Behavioral changes aimed at reducing contact between pregnant individuals and secretions from young children have been shown to be effective in reducing viral transmission (Fig 2).
- A proposed bill in the Massachusetts senate will mandate universal screening of cCMV for newborns, making this an important moment for Massachusetts providers to update their cCMV knowledge.

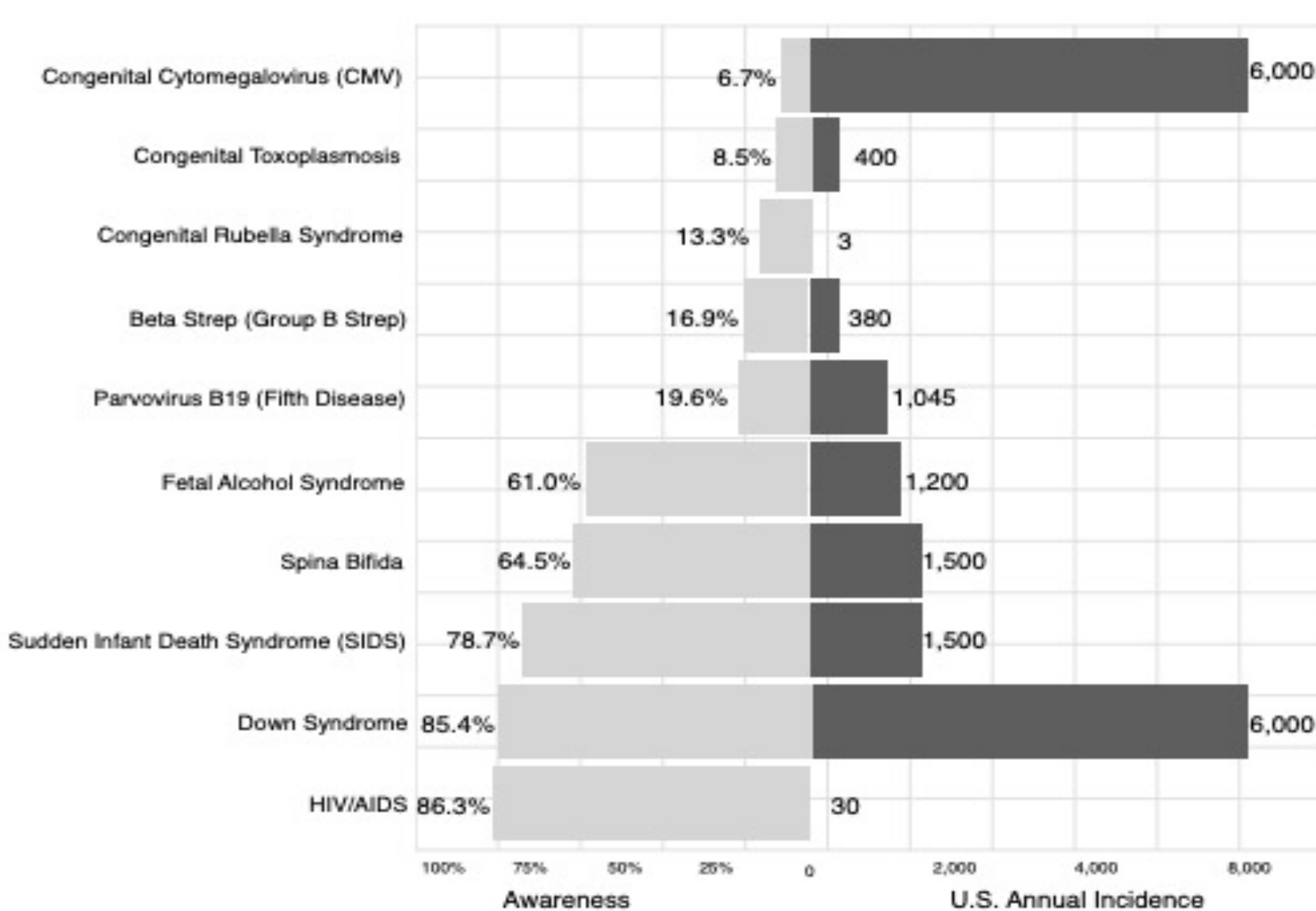


Fig 1. Adapted from 2016 article, "Losing Ground: Awareness of Congenital Cytomegalovirus in the United States." Original caption reads as, "U.S. adult awareness of childhood conditions from the 2016 HealthStyles surveys with approximate annual U.S. incidence of disability due to each condition²."

Results

- From the 3,264 practitioners emailed, 290 surveys were completed.
- The greatest proportion of respondents (46.6%) reported that they were "not very familiar," with cCMV (Fig 3).
- The majority of participants (55.8%) responded that they were "not confident at all" in their ability to advise pregnant patients regarding cCMV (Fig 3).
- Only 9.3% and 3.5% reported feeling "very familiar" with cCMV and "very confident" in cCMV advising, respectively (Fig 3).
- There was a fairly even distribution of providers who "would not use" (30.4%), "would consider using" (42.6%), and "would definitely want to use" (27.0%) educational materials if provided (Fig 3).
- The largest learning material preference was for an online module or website, for which 49.2% of responders said they would "strongly prefer to use." (Fig 4).
- The strongest preference against using a specific modality was for learning from social media, for which 49.2% of participants responded that they would "strongly prefer not to use." (Fig 4).

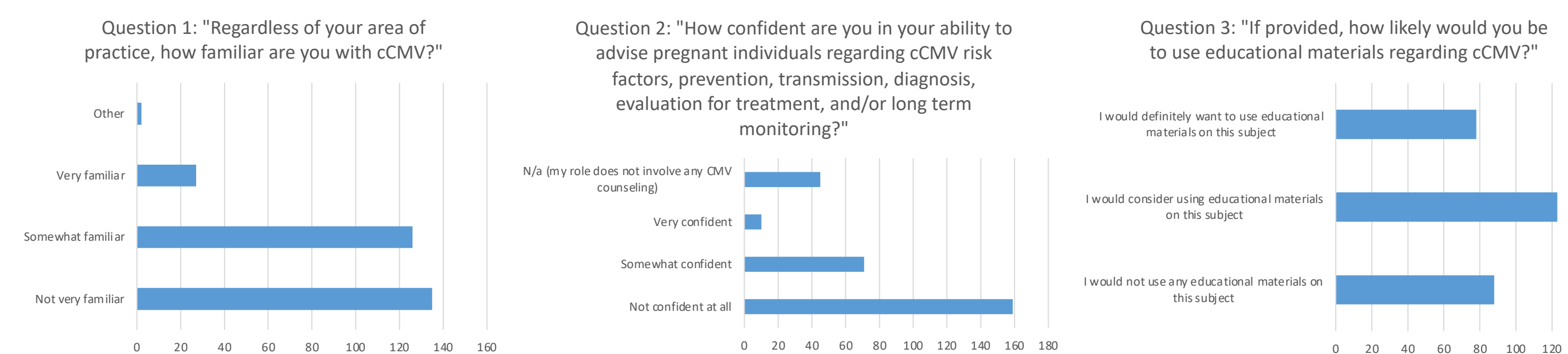


Fig 3. Provider responses to survey questions. The option "other," is not displayed on the graph for question 2 as no respondents selected it.

Conclusions

- Results from this survey regarding current levels of knowledge and confidence in advising patients about cCMV strongly support the need for a curriculum to refresh provider knowledge about this condition.
- There was a higher portion of clinicians that felt knowledgeable about cCMV than those who felt confident discussing their knowledge with patients. Addressing this gap will be important in ensuring that patients and providers have open channels of communication and ultimately in increasing cCMV awareness.
- Future educational materials should aim to make clear to clinicians why it is important to discuss cCMV at all and to provide them with strategies for addressing such difficult conversations (Fig 2).
- A clear preference for online modules reflects current trends in medical education and clearly establishes a potential medium for future educational materials.
- The preference against learning from social media seems to be at odds with how many people across the U.S. receive important information, most notably health and medical advice.
- Future studies may explore how physicians can increase engagement with social media in positive ways, including with their own learning.

Objective

- The aim of this study was to determine provider need and interest in a continuing education curriculum about cCMV and to direct which educational modality may be most effective for such learning.

Methods

- RedCap was utilized to create a brief three-to-four question multiple choice survey aimed at evaluating the level of knowledge and interest in cCMV education amongst current providers at UMass and their preferences for learning from different educational materials.
- A survey was distributed via email to all medical providers licensed with the UMass Medical Group, including mid-level providers such as nurse practitioners and physician assistants.
- Three weeks were given for providers to respond before the survey closed. A reminder email was sent one week before closing the survey.
- Analysis of the survey responses was completed through RedCap. No statistical tests were run, as the purpose of the study was to gain a general idea of preference rather than of significant differences between responses.

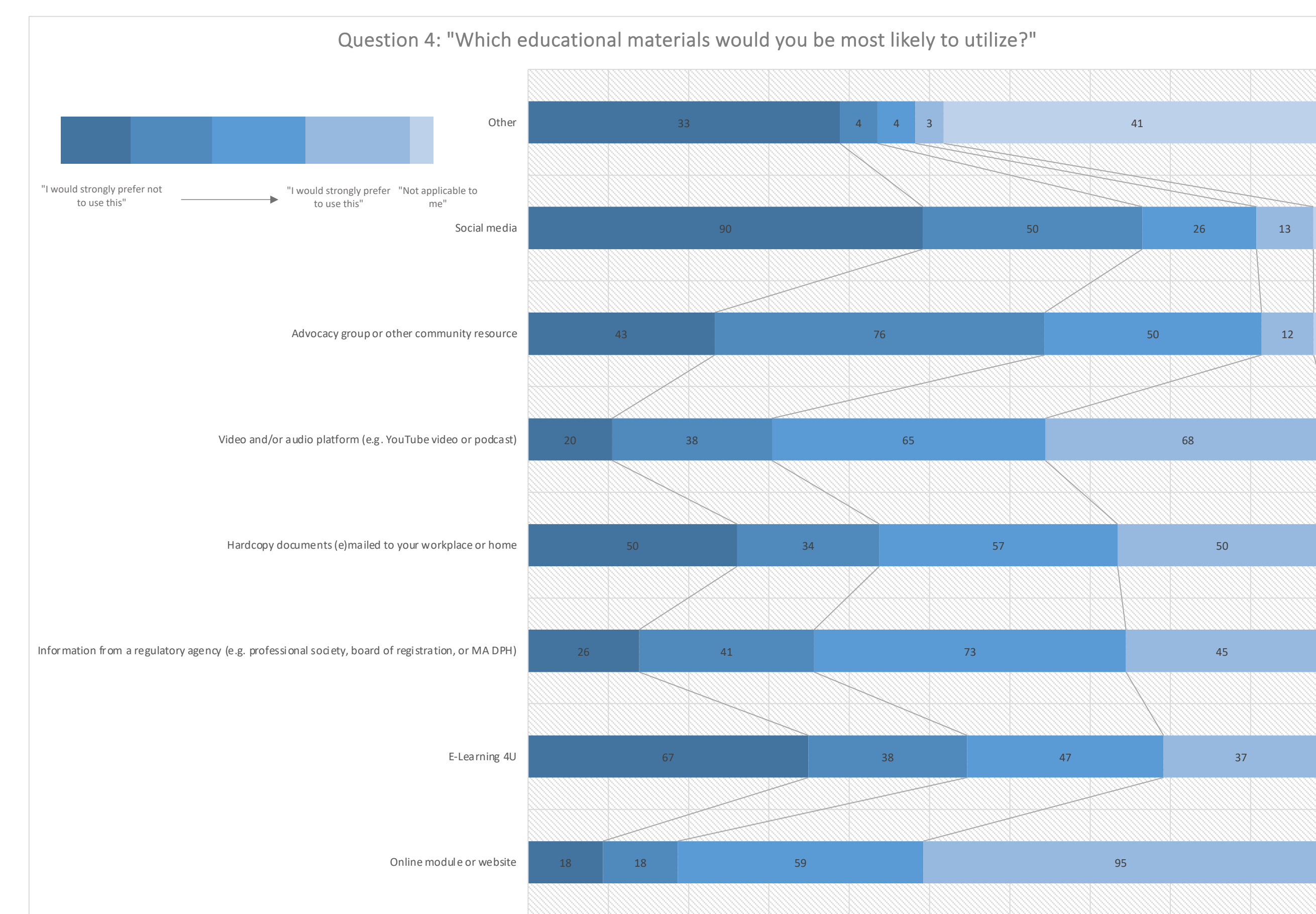


Fig 4. Provider preferences for use of different educational materials. Answer choices for each learning method ranged from "I would strongly prefer not to use this," to "I would strongly prefer to use this." There was a clear preference for learning from online modules or websites and a strong preference against learning from social media.

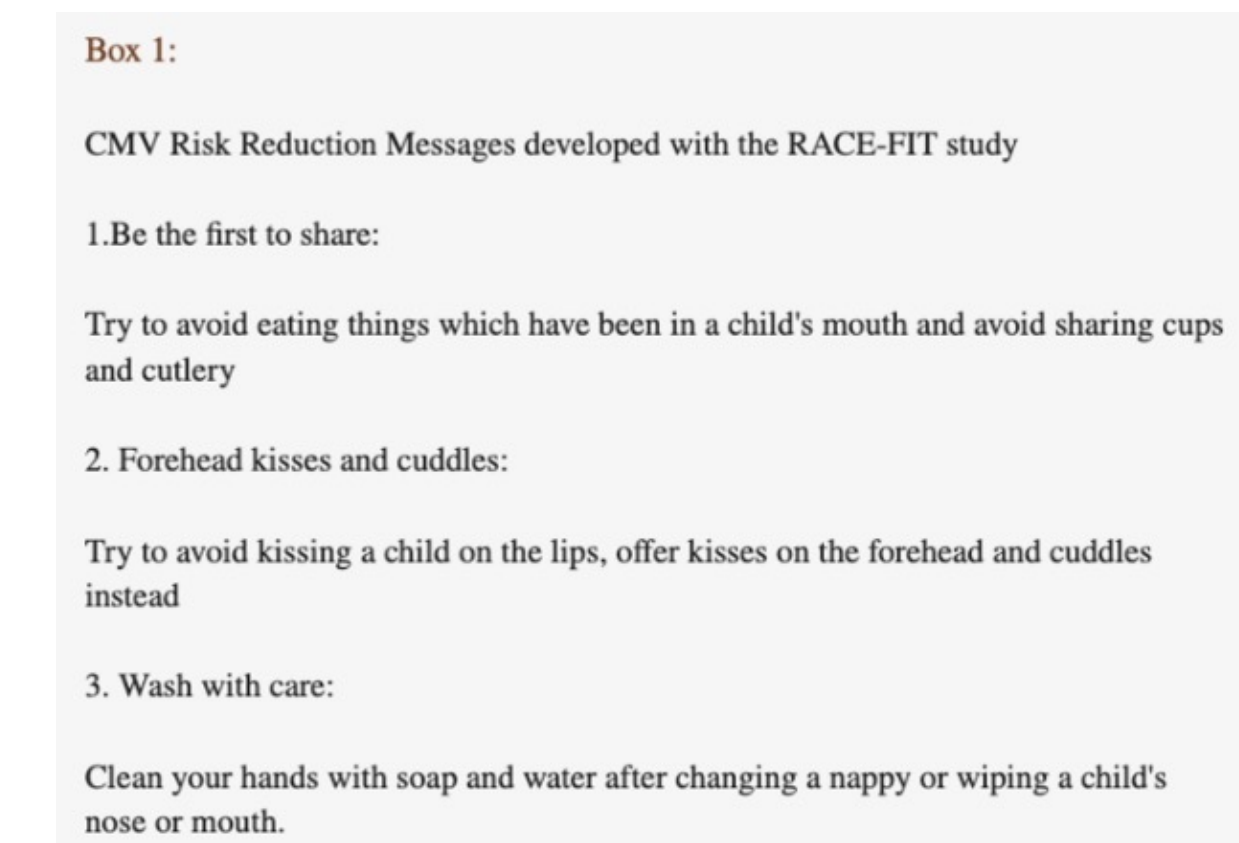


Fig 2. Example messaging providers can use to discuss risk reduction behaviors with pregnant individuals³

Future Work

- Next steps for this project will be to create an individual learning module (ILM) that can be accessed online and distributed to providers across the state.
- We are continuing to partner with the continuing medical education office at UMass to accredit the ILM will provide a stronger motivation for clinician participation in this learning opportunity.

References

1. Rawlinson, W. D., Boppana, S. B., Fowler, K. B., Kimberlin, D. W., Lazzarotto, T., Alain, S., Daly, K., Doutré, S., Gibson, L., Giles, M. L., Greenlee, J., Hamilton, S. T., Harrison, G. J., Hui, L., Jones, C. A., Palasanthiran, P., Schleiss M. R., Shand, A. W., & van Zuylen, W. J. (2017). Congenital cytomegalovirus infection in pregnancy and the neonate: Consensus recommendations for prevention, diagnosis, and therapy. *The Lancet Infectious Diseases*, 17(6), e177-e188. doi: 10.1016/S1473-3099(17)30143-3
2. Doutre, S. M. Barrett, T. S. Greenlee, J. & White, K. R. (2016). Losing ground: Awareness of congenital cytomegalovirus in the United States. *Journal of Early Hearing Detection and Intervention*, 1(2), 39-48. doi: 10.15142/T32G62
3. Montague, A., Vandrevalla, T., Calvert, A., Yeh, I. L., Star, C., Khalil, A., Griffiths, P., Heath, P. T., Jones C. E. (2022). Experiences of pregnant women and healthcare professionals of participating in a digital antenatal CMV education intervention. *Midwifery*, 106, 103249. doi: 10.1016/j.midw.2022.103249