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Statement of
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On behalf of the
American Academy of Pediatrics

Before the
U.S. House of Representatives
Committee on Energy and Commerce
Consumer Protection and Commerce Subcommittee

"Kids Online During COVID: Child Safety in an Increasingly Digital Age"

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Good morning. Chair Schakowsky, Ranking Member Bilirakis, and members of the subcommittee, it is my pleasure to be here today to address young people's digital media use during the pandemic. Pediatricians have been raising concerns about the impact of media use on children for years, particularly digital and online media, and I look forward to sharing more about the opportunities and challenges presented to us by these technologies. It is in our power to create a digital ecosystem that works better for children and families, and I hope we will seize this opportunity to do that.

My name is Dr. Nusheen Ameenuddin, and I am the chair of the American Academy of Pediatrics Council on Communications and Media. I am also a pediatrician with extensive clinical experience in how communications and media impact children. I currently serve as an Assistant Professor of Pediatrics at the Mayo Clinic in Rochester, Minnesota, in the Division of Community Pediatric and Adolescent Medicine. During routine well-child visits, I invest significant time in conversations with children, teens, and their parents about the safe and appropriate use of digital media. I answer their questions and counsel them as they make difficult decisions about how to set boundaries with their devices. I am also passionate about advocating for underserved populations and immigrant populations who face systemic barriers to realizing optimal health and achieving their full potential. In our discussions about the challenges presented by the digital ecosystem, it is critical we not lose sight of the fact that structural racism and inequities compound and feed into the challenges young people of color are facing online.

I am here today representing the American Academy of Pediatrics (AAP), a non-profit professional medical organization of more than 67,000 pediatricians, pediatric medical subspecialists, and pediatric surgical specialists across the United States. The AAP is dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults. In my role as chair of the Council on Communications and Media, I work to ensure that children, families, and pediatricians have the knowledge and tools to make informed choices about children's media use. The Council also develops the Academy's official evidence-based policy on issues ranging from children's screen time to digital advertising targeting children. Our policies include recommendations for pediatricians, families, and policymakers to create an optimal digital environment for young people.

Today's generation of children and adolescents is growing up immersed in media, using platforms that allow users to both consume and create content, including broadcast and streamed television and movies; sedentary and active video games; social and interactive media that can be creative and engaging for both individuals and groups; and even highly immersive virtual reality. In 1970, children began watching TV regularly at about 4 years of age, whereas today, children begin interacting with digital media as young as a few months of age. In 2015, according to research published in *Pediatrics*, most 2-year-olds used mobile devices on a daily basis and 92.2% of 1-year-olds had already used a mobile device.[1] Many preschoolers in this study were already media multitasking (using more than one form of media at a time). Data has also shown that three-quarters of teenagers own a smartphone, 24% of adolescents describe themselves as "constantly connected" to the internet, and 50% report feeling "addicted" to their phones.

All of this was the reality we faced long before a global pandemic forced all of us to migrate much of our lives online. It is therefore essential that we address not just the issues of the moment but also the broader structural issues with the digital ecosystem that the pandemic has simply laid bare.

Young People & Digital Technology in the Age of COVID-19

This is an unusual time for children and parents, and it is important that we acknowledge this reality from the outset. Parents and families have faced unprecedented challenges over the last year as children have

experienced extended periods of virtual schooling, isolation from family, friends, and supportive networks, and increased emotional, financial, and other stressors. Millions of parents are working from home while managing their children's education and extracurricular activities, while countless others have lost jobs or seen their earnings reduced dramatically. Still others have faced the unique challenges of securing childcare for their children during a pandemic while they report to jobs that cannot be done virtually. In the face of these trying circumstances, families have shown enormous adaptability and resilience.

At a time when families are being strained more than any in recent memory, the pandemic has brought longstanding concerns about the digital ecosystem to the forefront, making normal screen time recommendations more challenging than ever to abide by and exacerbating concerns about exploitative industry practices that target young people. According to one survey-based study of Michigan school-aged children's media use during the pandemic, 35% of parents reported that their child had started using social media at a younger age than they had planned. The study also showed that 49% reported that their child has come across media content or videos that they consider creepy or not age-appropriate and 28% of parents report that their child is distracted during virtual schooling with other websites or apps like YouTube on their learning device.[2] With advances in technology, the line between the online and offline world is increasingly blurred, making hard and fast rules about technology use challenging for parents to put into practice.

It has also become increasingly clear based on clinical experience and anecdotal reports that screen time has increased significantly since pandemic-related lockdowns and virtual schooling began. Initial data have shown children's screen time for both educational and entertainment purposes increasing in 2020.[3] One study of Indian school children found that children's screen media use increased during lockdown, particularly on weekdays. The study also found that children with higher screen media use had more sleep disruption, though the study was not able to establish causation.[4] Video game use among children also appears to have increased.[5] Though it will take time for a large body of rigorous, peer-reviewed studies to be published on this topic, we have seen enough to know that concerns about the impact of the pandemic on children's digital media use are justified.

As pediatricians, we recognize the need for moderation in device use, and we have adjusted the ways we counsel our patients to reflect our new reality. We are not simply preaching device abstinence or demanding families make unrealistic sacrifices that do not align with the modern world or the realities of the pandemic. Rather, we like to think of all the ways families use their devices on a daily basis in terms of a "media diet," recognizing that the myriad types of digital media out there are of varying quality and value from the educational, socioemotional, and developmental perspectives. We strive to help families achieve a balanced media diet.

When it comes to advising parents about their children's internet and digital device use, we recommend a collaborative approach that embraces open dialogue between parent and child and active monitoring of young people during their time on devices. Parents can talk with their children about age-appropriate content and ask children to share what they are doing on their devices. Parents can also use parental controls to screen out inappropriate content when direct supervision is not possible.

Clear guidelines for when and how devices can be used are important to creating balance and moderation. We suggest families identify screen-free zones in the home, like bedrooms or family gathering areas, so that parents and children can connect with each other without distractions. Specifying times of the day when every member of the family should be fully offline and present, such as a screen-free dinner or active playtime, can also help families develop healthy media rituals. Though devices are ubiquitous in all aspects of children's

lives, parents can place a firm limit on the amount of time screens are used for entertainment purposes, like streaming content or playing video games. We also encourage parents to disable apps and entertainment features on devices during the virtual school day, if possible, to minimize distractions.

There is no doubt that parents and pediatricians play an important role helping children and teens safely navigate the digital world. Ultimately, however, digital media and technology companies must be held to account for the products they create. While there is no substitute for parental supervision and guidance, families face huge headwinds using technology platforms designed to maximize profit and user engagement, goals at odds with a developmentally appropriate approach to technology. In short, parents need help, now more than ever.

The Promise of Technology for Young People

Despite the concerns that have brought us here today, it is important to remember that technology has important benefits for children and teens and even greater potential, should we as a society choose to capitalize on it.

For infants and toddlers still developing cognitive, language, sensorimotor, and socioemotional skills, screen time of any kind is typically discouraged, and adult interaction is crucial for toddlers to learn effectively from digital media. In this age range, co-viewing of media with parents in addition to teaching back after the fact may increase young children's engagement with media and understanding of content.[6] Interactive devices that allow apps to know whether a child is responding accurately and tailor responses, reinforcement, and next steps to the child's input may increase educational potential by providing scaffolding to build skills at the child's edge of competence. Additionally, young children can learn words from live video-chatting with a responsive adult or from carefully designed, interactive screen interfaces that prompt the child to tap on relevant learning items.[7,8] More broadly, video chats can provide an opportunity to connect with distant family and friends with the guidance of an adult, and therefore are appropriate for young children.[9]

Among school-aged children and teenagers, research studies as well as anecdotal reports have suggested benefits of media use, such as communication and engagement.[10] For children young and old, technology can help broaden horizons beyond their immediate surroundings and serve as a tool for learning. Cultural and educational institutions around the world, such as zoos and museums, have met this moment with new online offerings, allowing young people to see a live giraffe or tour the Louvre from their couch. Teenagers are able to share their art through online platforms or create their own digital content, allowing them to develop their creativity.

The internet has also created space for community-building among marginalized young people from a wide variety of backgrounds. For instance, young people with chronic illnesses or disabilities can connect with those dealing with similar conditions, and research suggests that these networks may be particularly helpful for patients with ongoing health issues.[11] Children of color can build resilience through digital community to help overcome lived experiences of racism and discrimination. Young people from religious minority backgrounds can come together for shared worship and cultural experiences that are reflective of their age and shared values.

Digital media platforms also allow young people to organize and advocate for issues that impact their generation. For instance, the post-Parkland movement to address gun violence, including the widely attended March for Our Lives, was youth-led and helped spur important changes in a dialogue that had stagnated for

years. The potential for young people to demand change through collective action represents a real and meaningful bright spot from their exposure to the digital ecosystem.

Harms of Technology for Young People

With these benefits in mind, we must now turn to the real threats posed by the digital ecosystem to young people's health, well-being, and long-term trajectories. Technology companies and online platforms are not developed with child development in mind. Whether intended or not, they have incentives that harm children. It is therefore critical to understand the ways that common practices designed to benefit the goals of these companies impact young people.

Data Collection Practices and Children's Privacy Online

Data collection on a vast scale is a core characteristic of modern technology platforms. Nearly every connected platform, from social media to internet-connected virtual assistants, collects data from users in some form to inform commercial goals like product advertising. Despite limitations on the collection of data from young children enshrined in the Children's Online Privacy Protection Act (COPPA), this practice has accelerated largely unabated for children of all ages due to outdated statutory protections and insufficient enforcement. Enabled by an internet connection, companies can contact, track, and influence users, as guided by behavioral data collection, essentially a user's digital trail of location, activities, in-app behavior, likes, and dislikes.[12] These data contribute to a digital profile shared among many companies that can be used to make advertising messages more effective and technology platforms more successful.

A report examining this so-called "datafication" of children concluded that school-aged children up to teenagers do not comprehend the full complexity of how digital data are collected, analyzed, and used for commercial purposes.[13] For example, studies suggest that teenagers have a more interpersonal, and less technical, conceptualization of privacy, so they may not be as aware of the ramifications of sharing data with governments or corporations compared with sharing private information with friends or parents. Young children are more trusting of privacy-invasive technologies, such as location trackers, likely because of their convenience.[14]

In a recent report commissioned by the UK Information Commissioner's Office, children and parents reported not reading the terms and conditions or privacy notices in platforms, feeling pressured to accept cookies to use websites, and feeling uncomfortable with their data being used for targeted advertising.[15] In addition, preschool-aged children up to teenagers in this study believed they should have the right to erase or limit the use of their digital data. However, data-brokering services are highly complex, using evolving algorithms across multiple platforms, with business practices that are intentionally opaque, which even adults do not fully understand.[16]

Data collection also influences the information that reaches young people through the internet. Previous online behaviors shape what is delivered to users via news, notifications, and social media feeds, creating a filter bubble in which all input, unbeknownst to users, is tailored to their interests and creates false norms that can undermine healthy behaviors. When algorithms can accurately predict what a child will want to watch next, it is hard for young brains to resist social media feeds, or for parents to enforce limits.

In the United States, COPPA is meant to "place parents in control over what information is collected from their young children online" and limit the data that child-directed websites, apps, or other online services collect, use, or disclose to third parties in the absence of parental consent.[17] However, COPPA was originally enacted in 1998, making many of its protections better suited for the dial-up era than the complex digital ecosystem

families inhabit today. COPPA leaves open many gaps in its protections. It generally does not protect children when they are using websites or apps that are considered targeted to a general audience, nor does it apply after a child is 13 years of age. In addition, the law has not been enforced reliably.[18] For instance, research has found that two-thirds of Android apps played by 3- and 4-year-olds had data trackers and shared identifiers with third parties like Facebook graph and that children of parents with lower education were at higher risk for privacy violations.[19] In light of these considerations, widespread data collection and privacy concerns for children are among the most pervasive threats facing children and teens today, and the growing use of artificial intelligence and machine learning may further compromise young people's privacy through novel data collection and analysis processes that are not yet widely understood.

Manipulative Design Practices

The digital ecosystem is replete with features intended to influence user behavior while maximizing product use and engagement. Such design elements are intended to nudge users into specific behaviors by constraining choices, highlighting preferred buttons to click, or providing rewards for preferred behavior, and they are now a common part of digital design.[20] These design elements extend digital engagement in ways that increase product engagement and exposure to advertising, and children and teenagers may not be able to identify or resist. One very clear example of this type of design element is the auto-play feature found commonly on such platforms as Netflix and YouTube. With the clock rapidly counting down and the onus on young people to opt out of watching the next video, continued viewing becomes almost a forgone conclusion. Such practices are at odds with developmentally appropriate digital media use habits, which center moderation and active engagement from users.

Deceptive Marketing and Design Practices

Digital media also employ child-friendly tactics to extend engagement and sell products and services. Gamification of ads and in-app purchases rewards users for watching ads or buying products. The practice has evolved to include advertising that is less evident to the child.[21] For example, an analysis of the most-downloaded free apps for children younger than 5 years on Google Play revealed that 96% contained commercial content, including hidden ads, interstitial ads that pop up automatically, and ads that, when viewed, provided incentives, such as more game tokens or making gameplay easier. App characters were noted to encourage in-app purchases in some games.[22]

During the pandemic, education technology companies have incorporated in-app purchases in school-sanctioned educational games assigned as part of the virtual curriculum. These games, advertised to schools as cost-free to use, encourage young people to upgrade to unlock additional game features or to advance in the game. In one instance, a math-oriented game was documented to have 16 unique advertisements for membership and only four math problems over 19 minutes of game play, according to a complaint filed with the Federal Trade Commission (FTC).[23] Students were told they could "have more fun" or get "better pets" in the game if they paid up. Such exploitative tactics prey on children.

User-created influencer marketing on platforms is another form of deceptive advertising targeting children. Such content appears regularly on social media platforms and video-streaming services such as TikTok and YouTube and involves commercial content and marketing messages. For instance, the highly popular unboxing and toy-play videos as well as influencers reviewing or using products with sponsorship from companies have become commonplace viewing among young people.

Tobacco companies are notorious for their use of youth-appealing product promotion to attract young people to experiment with and continue using their highly addictive products, and there is a correlation between exposure to tobacco product advertising and youth's desire to try tobacco products.[24, 25] For instance, tobacco companies have been known to use paid social media influencers as a form of product promotion and have not always disclosed that the posts are ads.[26] In essence, young people are led to believe that the post is organic content that reflects the poster's genuine product preferences and habits, when in fact they are being targeted by a marketing campaign intended to influence their behavior.[27]

Child advocacy groups have highlighted the large amount of child-directed influencer marketing, often undisclosed, which is not allowed on children's television (i.e., "host selling," using stars of a television program in commercials airing during that program) because it is harder for children to identify or resist.[28]

Exposure to Extreme, Age-Inappropriate, or Inaccurate Content

Algorithms for digital platforms are designed to maximize user engagement by prioritizing sensational and outrageous content that draws users in over other content. This "click driven" mindset means that companies create platforms that often lead young people to videos that may be violent or adult in nature. Even a child who watches a child-oriented video will be served up content that is increasingly extreme, inappropriate, and even harmful. A report from Common Sense found that one in five videos viewed by children 8 and under on YouTube contained ads that were not age appropriate, including content that was violent or sexual in nature.[29] The same report found that nearly a quarter of videos that children under 8 watch on YouTube are intended for older audiences.

Pediatricians also have serious concerns about misleading health information that is shared online that makes our work with families more challenging. Social media platforms are becoming an increasing source of news for most Americans; a recent study conducted by the Pew Research Center found 53% of U.S. adults get news from social media sites.[30] According to the same study, conducted in August-September of 2020, a majority of the people who get news on social media continue to question its accuracy. While technology companies have taken some strides to curtail misinformation and shore up accurate content in the wake of the pandemic, more needs to be done to ensure accurate information is reaching children, teens and adults who get their news from these platforms.[31]

In 2019, the AAP wrote to the heads of Google, Facebook and Pinterest urging them to take a more proactive role combating misinformation online related to vaccines.[32] While the outreach resulted in an effective partnership with Pinterest to do so, the other companies failed to make meaningful changes.[33] Misinformation around COVID-19 and the vaccines to stop its spread have only made the need to shore up scientific, accurate content while minimizing misleading content all the more urgent. Digital media offer anti-vaccine organizations a platform to spread misinformation about disproven harms claimed to be posed by vaccines or outright conspiracy theories. While the majority of families support vaccinations, conscientious vaccine-hesitant families need accurate information and guidance from a trusted health care provider, not exposure to inaccurate information.

Health and Developmental Risks of Media Use

A growing amount of evidence has established negative physical and mental health effects stemming from digital media use. Health concerns range from increased likelihood of obesity, poorer sleep quality, engagement in high-risk behaviors among older children and teens, and higher incidence of mental health concerns like depression.

Screen media exposure may increase obesity risk through both decreasing young people's physical activity and exposing young people to sophisticated marketing campaigns for unhealthy foods. Over the course of decades, research has demonstrated that high levels of media use like television watching are linked to obesity and cardiovascular risk.[34] One study found that 5- to 10-year-olds who watched more than 5 hours of TV per day were 4.6 times more likely to be overweight than those who watched between 0 and 2 hours per day.[35] Another study found that screen media consumption is inversely correlated with fruit and vegetable intake and directly correlated with energy-dense, nutrient-poor snacks, drinks, and food.[36] Digital ads often promote high-calorie, low-nutrient food and beverages.

There is a growing body of evidence that suggests that media use negatively affects sleep.[37] Increased duration of media exposure and the presence of a TV, computer, or mobile device in the bedroom in early childhood have been associated with fewer minutes of sleep per night, especially among children of racial/ethnic minority groups.[38] Later bedtimes after evening media use and violent content in the media also may be contributing factors, and suppression of endogenous melatonin by blue light emitted from screens is another possible cause.[39, 40] Associations between media and sleep are seen in infants as well; 6- to 12-month-olds who were exposed to screen media in the evening hours showed significantly shorter night-time sleep duration than those who had no evening screen exposure.[41]

The links between media and health behaviors among adolescents have been backed by decades of evidence in traditional media.[42, 43, 44, 45] For instance, studies have shown that exposure to alcohol or tobacco use or risky sexual behaviors in TV or movies is associated with initiation of these behaviors, leading some to describe TV as a "superpeer."[46, 47, 48] A growing body of evidence suggests that these influences also are strong in digital and social media.[49, 50, 51, 52, 53, 54, 55, 56, 57]

Health Equity

Youth of color encounter additional challenges from digital media and face barriers accessing the beneficial aspects of technology. Basic access to broadband internet and devices remains a major concern nationwide, and a year of virtual learning has only increased the stakes of this digital divide. Without access to an adequate internet connection or device, those left disconnected are missing out on critical opportunities for learning and socialization, with long-term implications for the achievement gap and developmental trajectories. A recent report found that 26% of Latinx, 30% of Black, and 35% of American Indian students lacked adequate connectivity to broadband and digital devices as compared to 18% of white students.[58]

Though recent data are limited, it appears that communities of color are disproportionately targeted ads for unhealthy products that worsen health. For instance, more fast food and sugar beverages are advertised in Black, Latinx, and low-income communities, as well as candy and cereals. Nearly 40% of ads on television targeted to Black and Latinx populations are for fast food and other restaurants.[59] Studies have also shown that Black, Latinx, and American Indian youth are exposed to alcohol content via social media, banner ads, and video ads at disparately high rates.[60, 61, 62] More broadly, the alcohol and tobacco industries have a long history of targeting communities of color with their harmful products. Targeted marketing also results in different products being advertised to different populations, which may accentuate existing disparities.

It is also clear that children from under-resourced communities tend to spend more time in front of a screen, which could be due to structural issues that limit access to safe spaces for them to play, parents who may work long hours or night shifts that do not allow them to actively supervise children, limited affordable childcare options, and lack of access to high quality programs. For instance, Sesame Street recently moved from PBS to

premium pay cable station HBO. We must be attentive to these specific considerations and others impacting communities of color as we craft solutions to these problems.

The Path Forward

In the face of this extraordinarily complex digital ecosystem, the question then becomes how we as a society move forward to make real progress for children and families. We must be bold in our thinking and ensure that government action on technology addresses the most pervasive and concerning industry practices that harm children and teens while preserving and enhancing the positive aspects of technology for young people.

It is critical that Congress act to improve and strengthen laws that are designed to protect children online. Updating the Children's Online Privacy Protection Act is a good place to start. An enhanced COPPA should, at a minimum, be expanded to protect all children under the age of 18 and cover the wide array of devices that collect data from children, including mobile devices, internet-connected toys, and others. Technology platforms should also be required to set the highest level of privacy protections as the default.

As a general rule, data collection should be considered an opt in practice for young people, if the practice is even allowed at all. In the event that data is collected, mandated disclosures with information on what data will be collected, how the data will be used, with whom data might be shared, and the risks and benefits to the consumer should be prominently provided at appropriate literacy and developmental levels. This must also include information about blocking this data collection and how young people can go about deleting their personal information permanently. Congress must also act to close the loophole that has allowed technology companies to evade COPPA regulations by claiming to be "general audience" rather than "child-directed" platforms.

We as pediatricians understand that young people are particularly vulnerable to deceptive or unfair marketing practices. We call on Congress to ban targeted (i.e., data-driven behavioral) advertising to all individuals under the age of 18. These invasive and extraordinarily effective ads have no place in our society targeting young people who may not fully understand that they are being sold a product or why. We further request that Congress ban all commercial advertising to children younger than 7 years, and limit advertising to older children and teenagers in light of developmental considerations. Advertising for products with demonstrated health effects on young people, like unhealthy food, alcohol, and cannabis, need additional attention from Congress.

Congress should also fund digital literacy curricula in schools to ensure that children and teens are equipped with the skills they need to navigate an increasingly complex digital ecosystem. Congress can also fund efforts to promote digital equity by expanding access to broadband internet and devices, while also targeting digital media practices and marketing tactics that disproportionately impact youth of color. Lastly, we need more research to better understand how digital media impact children's health and development and ultimately how we can create a digital ecosystem that is most beneficial to young people.

The issues young people and their families face in the digital world are significant, but they are not insurmountable. It starts with holding digital platforms accountable for the real-world impacts on children of the products they create. Through effective public policy, it is possible to build a better digital world for our children.

Thank you for your attention to this critical issue.

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