

Thank you for this opportunity to comment on this important matter.

I would like to preface my remarks, hoping you will understand that many people who are severely disabled by EMR Syndrome (www.EMRSyndrome.org), will not be able to participate in this RFI for various reasons. Some cannot use computers or other devices, even hardwired ones, to learn of the need to submit the comment, or to submit a comment. I hope you will understand that they are out there.

Given the serious reactions I have to EMFs, I lost the ability to work for pay and now volunteer my time to help others who suffer from EMR Syndrome. I am fortunate to have saved enough financial resources so that I can continue to access necessities. As a Doctor of Physical Therapy, I have never encountered a condition as severely disabling as EMR Syndrome, for which there are so few accommodations available to those who suffer. Dr. Lael Stien and her co-authors aptly captured the plight of the EMR Syndrome population in the title of their 2015 UNESCO conference paper: *“Environmental Refugees – Electrohypersensitives (EHS) in the Digital World – A Disabled Population, Deprived of Home, Work, and Basic Rights.”*¹

Even the people with the sunniest outlooks suffered tremendously, and it was common to find people sleeping in places where people would never sleep when they owned or had access to good, even outstanding housing. I would find people who seemed perfectly reasonable, wanting help, showing me things like a mattress on the kitchen floor, in a car, in a tent, in a boat, in a shed, etc. One physician in our state remarked that something had to be seriously wrong when so many people with perfectly nice houses are not sleeping inside – and instead, in desperation, other far less desirable places.

Dr. Pamela Gibson²⁻⁴ extensively documented the disabling nature of this condition, and it was also by the Cities of Boston and Philadelphia⁵, and documented in many other papers and elsewhere⁶⁻⁵⁵. An entire medical textbook, *Electromagnetic Fields of Wireless Communications: Biological and Health Effects*⁵⁶ provides medical doctors, engineers, and graduate students extensive documentation of the detrimental biological effects of radiofrequency microwave radiation. Chapter 8 is devoted to the topic of EMR Syndrome, complete with about 500 reference citations. Now a 2026 study⁵⁷ by McCredden and colleagues documented a prevalence of 12.8% among people in the USA.

It defies all reason that not only has the EMR Syndrome population not been helped, but that others are routinely placed in harm's way, having no idea it is possible to develop this condition or the other harmful biological effects of electromagnetic radiation.

I can testify to the personal deleterious health effects of EMF exposure and what I have seen in my advocacy work.

A doctor from the Cleveland Clinic advised me, as part of my treatment, that I must decrease my EMR exposures and opt-out of a smart meter. At that time, I was working on my doctorate and was using a wireless laptop, on my lap for hours a day. I had a cell phone and used it for calls,

texts, as a GPS and also to use parking apps, etc. I trusted my doctor and slowly figured out how to decrease my EMR exposures. I knew early on to use a wired landline but had much to learn about decreasing my exposures. Determined to get better, I learned quickly, followed the doctor's instructions, and made an excellent recovery.

My primary care doctor told me, after we replaced Wi-Fi with wired internet in our house, and other changes, that she had never seen me so healthy in all the years she was my doctor. I felt great and was looking forward to expanding my physical therapy practice.

My utility company, however, refused to accept my doctor's recommendation that my smart meter be replaced with an analog meter. The day smart meters were installed in our area I developed a bad headache and the day they were installed on our street I developed severe headaches, nausea, fatigue, difficulty thinking, and severe insomnia that I never experienced before.

Suddenly, I could not sleep inside my house or tolerate being inside my house for long periods of time because these problems were so severe, and they improved or stopped if I was out of my house long enough. I had to leave my husband and five children to stay in a house without a smart meter. I quickly got better there, and the symptoms returned when I tried to return home. I developed chest pain, palpitations, and later arrhythmias, near syncope and the condition now known as EMR Syndrome.

I began having difficulty simply being around wireless devices that previously did not seem to bother me.

We began the costly process of remediating our home, consulting with an engineer. Over time, despite great expense and improvement in my ability to tolerate some exposures, it was not enough. I lost my ability to work and became mostly confined to my home. Over the past 8 years we have spent over \$40,000 alone on moving the meter, shielding it, encasing the wiring on steel conduit, shielding paint, electrical filters, hardwired connections to our electrical panel for the filters and a sleep switch, as well as other adaptations in the hope that I could recover and return to work. We spent even more on other out-of-pocket costs on uncovered medical expenses.

Protective policies and legislation could have easily prevented my disability.

I have now improved so that if I stay at home, or in low EMR settings, I am able to function well but am at serious risk of the onset of life-threatening arrhythmias. As a result, my doctor recommended I stop working unless I could find a way to work in a low EMF environment, which is difficult for a pediatric physical therapist. My doctor's recommendation came after my last attempt to work resulted in a small stroke that started the first day I attempted to work in a school with extensive wireless without an ADA accommodation. I am grateful that it was "small" (involving mostly my hand and speech) and that I had a full recovery. I have not found work that is safe for me, and I spend most of my time at home or church, which is unfortunately becoming increasingly difficult for me to attend due to technological "upgrades."

I had to stop attending one church because I was having so much chest pain and arrhythmias that I felt like I was about to pass out by communion. I did very well at the next church until they began adding wireless technology, wireless thermostats, “modern lighting”, and most recently powerful, commercial-grade Wi-Fi routers. Over time I began having trouble standing, walking, and thinking while there. The arrhythmias which were well controlled for a while have returned. It is difficult to think and even stand or walk at times when exposed to these wireless technologies, even while wearing the most advanced shielding I can purchase, and with the most advanced treatments I know of. I had a mini stroke recently when I was helping with a project and accidentally stood in close range to a water smart meter at a third church. Fortunately, I again had a full recovery after much rest, however, I have learned to be very careful about what I do and where I go to avoid high sources of EMFs.

Most recently, I ended up going back to the first church where I am currently doing the best. Though I was initially having problems, after the treatments and better shielding, I actually do quite well if I am off to the side and in the front of the church so everyone with a cellphone is behind me. I never imagined it would be so difficult to simply go to church. My faith is very important to me, and my goal is to continue to attend Mass despite my illness. I am grateful that my pastor has tried to work with me and we are continuing to work on solutions so I can be there. I am very grateful for that.

As a result of my condition, I do not get to socialize much, which is disappointing, as I consider myself to be a “people person” and miss seeing my friends. I am grateful I still have a landline so I can talk to them even though I generally cannot see them in person much. I put my trust in God.

Two more severe health episodes worth noting include one at an important family event held in a house with a lot of “smart” technology and an exceptionally large number of professionals, with as most would expect, modern cellphones, etc. I had difficulty walking for about two months until I found a treatment that helped me. The second was a trip to the New Jersey shoreline this year, where I did not have some of the remediation equipment I brought last year. I could not do some of the things I could do in the previous years, and it took me about two weeks to return to near baseline when I returned home.

It is also difficult for me to visit my parents since two wireless radiation-emitting cameras were installed. I get severe chest pain when they are on and so I only visit when they are turned off.

I sincerely hope and pray that you will use these comments to document the need for laws and public policies that are protective of human health, especially for the most vulnerable populations including children and pregnant women. While not all people experience reactions as seriously to EMFs as I do, we are all being biologically impacted whether we know it or not. Given that EMFs are one of the most pervasive, if not the most pervasive, environmental exposures of our time, it is vital that HHS prioritize investigating the long-term biological mechanisms of harm linked to EMF exposures. The longer we wait to act, the more public health will pay the price.

References

1. Stein, Y. (2015). Environmental Refugees: Electrohypersensitive individuals (EHS) in the digital world – a disabled population deprived of home, work and basic rights. Presented at *UNESCO Chair in Bioethics 10th World Conference*.
<http://dx.doi.org/10.13140/2.1.3344.6728>
2. Gibson, P. (2009). Of the world but not in it: barriers to community access and education for persons with environmental sensitivities. *Health Care Women International*, 31 (1), 3-16. <https://doi.org/10.1080/07399330903042823>
3. Gibson, P., Kovach, S., & Lupfer, A. (2015). Unmet health care needs for persons with environmental sensitivity. *Journal of Multidisciplinary Healthcare*, 8, 59-66.
<https://pmc.ncbi.nlm.nih.gov/articles/PMC4315542/> <https://doi.org/10.2147/jmdh.s61723>
4. Gibson, P. (2009). Chemical and electromagnetic exposures as disability barriers: Environmental Sensitivity. *Disability and Society*, 24 (2), 187-199.
<https://doi.org/10.1080/09687590802652454>
5. Cities of Philadelphia and Boston (2013). Reply comments of the Cities of Philadelphia and Boston, Federal Communications Commission, ET Docket No. 13-84, ET Docket No. 03-137. <https://img1.wsimg.com/blobby/go/560ca86e-e802-4adb-8733-b30528eacc28/downloads/FCC%2C%20Boston%2C%20Phil%2C%20BBK%20reply%20comments%2C%2011-13%20A.pdf?ver=1760471934505>
6. Federal Register (2017, January 18). Rules and Regulations (Volume 82, No. 11, page 5794-5796). <https://www.federalregister.gov/d/2017-00586>
7. IEQ Indoor Environmental Quality (2005). A project of the National Institute of Building Sciences. <https://www.access-board.gov/research/building/indoor-environmental-quality/#ieq-indoor-environmental-quality-project>
8. Belpomme, D., & Irigaray, P. (2020). Electrohypersensitivity as a newly identified and characterized neurologic pathological disorder: How to diagnose, treat, and prevent it. *International Journal of Molecular Sciences*, 21 (6), 1915;
<https://doi.org/10.3390/ijms21061915>
9. Belpomme, D., & Irigaray, P. (2021). Electrohypersensitivity as a man-made electromagnetic field pathology. In: Panagopoulos, D. ed. (2021). *Electromagnetic fields of wireless communications. Biological and Health*. CRC Press.
<http://dx.doi.org/10.1201/9781003201052>
10. Stein Y.& Udasin I.G.(2020). Electromagnetic hypersensitivity (EHS, microwave syndrome) - Review of mechanisms. *Environmental Research*, 186, 109445. DOI: [10.1016/j.envres.2020.109445](https://doi.org/10.1016/j.envres.2020.109445). Epub 2020 Mar 30. PMID: 32289567.
11. Belpomme, D., Carlo, G., Irigaray, P., Carpenter, D., Hardell, L., Kundi, M., Belyaev, I., Havas, M., Adlkofer, F., Heuser, G., Miller, A., Caccamo, D., DeLuca, C., von Klitzing, L., Pall, M., Bandara, P., Stein, Y., Sage, C., Solffritti, M., Davis, D., Moskowitz, J., Mortazavi, S., Herbert, M., Moshhammer, H., Ledoigt, G., Turner, R., Tweedale, A.,

- Munoz-Calero, P., Usasin, I., Koppel, T., Burgio, E., & Vander Vorst, A.. (2021). The critical importance of molecular biomarkers and imaging in the study of electrohypersensitivity. A scientific consensus international report. *International Journal of Molecular Science*, 22, (14):7321. <https://doi.org/10.3390/ijms22147321>
12. Belpomme, D., Campagnac, C., & Irigaray, P. (2015). Reliable disease biomarkers characterizing and identifying electrohypersensitivity and multiple chemical sensitivity as two etiopathogenic aspects of a unique pathological disorder. *Reviews on Environmental Health*, 30 (4), 251–271. <https://doi.org/10.3390/ijms22147321>
 13. Belpomme, D. & Irigaray, P. (2022). Why electrohypersensitivity and related symptoms are caused by non-ionizing man-made electromagnetic fields: An overview and medical assessment. *Environmental Research*, 212 (A), 113374, ISSN 0013-9351. <https://doi.org/10.1016/j.envres.2022.113374>
 14. Bevington, M. (2021). Proof of EHS beyond all reasonable doubt. Comment on: Leszczynski, D. The scientific evidence on the individual sensitivity to electromagnetic fields (EHS). *Reviews in Environmental Health; Reviews in Environmental Health*, 2 (37), 299-301. <https://doi.org/10.1515/reveh-2021-0101>
 15. Schröttner, J., Leitgeb, N. (2008). Sensitivity to electricity--temporal changes in Austria. *BMC Public Health* 12(8): 310. <https://doi.org/10.1186/1471-2458-8-310>
 16. Mohler, E., Frei, P., Braun-Fahrlander, C., Fröhlich, J., et al. (2010). Effects of everyday radiofrequency electromagnetic-field exposure on sleep quality: a cross-sectional study. *Radiation Research*. 174(3): 347-356. doi.org/10.1667/rr2153.1
 17. Abdel-Rassoul, G., El-Fateh, O.A., Salem, M.A. et al. (2007). Neurobehavioral effects among inhabitants around mobile phone base stations. *Neurotoxicology* 28(2): 434-440. <https://doi.org/10.1016/j.neuro.2006.07.012>
 18. Irigaray, P., Caccamo, D., & Belpomme, D. (2018). Oxidative stress in electrohypersensitivity self-reporting patients: Results of a prospective in vivo investigation with comprehensive molecular analysis. *International Journal of Molecular Medicine*, 42 (4):1885-1898. <https://pubmed.ncbi.nlm.nih.gov/30015864/>
 19. De Luca, C., Chung Sheun Thai, J., Raskovic, D., Desanka, R., Cesareo, E., Caccamo, E., Trukhanov, A., & Korkina, A. (2014). Metabolic and genetic screening of electromagnetic hypersensitive subjects as a feasible tool for diagnostics and intervention. *Mediators of Inflammation* 924184. <https://doi.org/10.1155/2014/924184>
 20. Heuser, G., & Heuser, S. (2017). Functional brain MRI in patients complaining of electrohypersensitivity after long term exposure to electromagnetic fields. *Reviews on Environmental Health*, 32, (3), 291-299. <https://doi.org/10.1515/reveh-2017-0014>
 21. Eberle, S. (2014). What's the diagnosis, doctor? *Sonoma Medicine*, Fall 2014, 27–32. <https://www.sccma.org/Portals/19/Whats%20the%20Diagnosis%20Doctor.pdf>
 22. Hedendahl L., Carlberg M., & Hardell, L. (2015). Electromagnetic hypersensitivity--an increasing challenge to the medical profession. *Reviews on Environmental Health*, 30 (4), 209-15. <https://doi.org/10.1515/reveh-2015-0012>

23. Nagy, L., Patrick, L. & Chaloult, P. (2019, September 6-8). *Electromagnetic Fields Conference 2019, Diagnosis and Treatment: Effects of Electromagnetic Fields Exposure. The Impact of today's wireless technology.*, 1440 Multiversity, 800 Bethany Drive, Scotts Valley, CA 95066. <https://emfconference.com>
24. Baldwin, H., Davis, D., Goldberg, S., Havas, M., Mattson, K., Mallery-Blythe, E., & Russell, C. (2020, October 23-24 and 2021, January 28 -31). *Prevention, Diagnosis and Treatment of EMF Associated Illness and Pre-Conference Course: Electrosmog and Electrotherapeutics 101*. Virtual Conference. <https://emfconference2021.com/>
25. Physicians for Safe Technology (2025). <https://www.mdsafetech.com>
26. Belyaev, I., Dean, A., Eger, H., Hubmann, G., Jandrisovits, R., Kern, M., Thill, R. (2016). EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses. *Reviews on Environmental Health*, 31 (3), 363–397. <https://doi.org/10.1515/reveh-2016-0011>
27. Bray, R. (2020). PRELIMINARY Clinical Practice Guidelines in the Diagnosis and Management of Electromagnetic Field Hypersensitivity. Environmental Health Clinic, Women's College Hospital, Department of Family and Community Medicine and Dalla Lana School of Public Health, University of Toronto. <https://www.womenscollegehospital.ca/wp-content/uploads/2022/06/Preliminary-Clinical-Guidelines-for-EHS.pdf>
28. Genus, S., & Tymchak, M. (2014). Clinical review: Approach to patients with unexplained multimorbidity with sensitivities. *Canadian Family Physician*, 60 (6), 533–537. <https://pubmed.ncbi.nlm.nih.gov/24925942/>
29. Physicians for Safe Technology. (2025). Patient Questionnaire Electrohypersensitivity. [Patient Questionnaire Electrohypersensitivity, www.mdsafetech.org](https://www.mdsafetech.org)
30. Regional Medical Association, Austrian Medical Association (2012). Guideline of the Austrian Medical Association for the diagnosis and treatment of EMF related health problems and illnesses (EMF syndrome). Consensus paper of the *Austrian Medical Association EMF Working Group (AG-EMF)*, adopted at the meeting of environmental medicine officers of the Regional Medical Association and the Austrian Medical Association on 3rd March 2012 in Vienna. [2012 03 03 OAK-AG EMF Guideline](https://www.mdsafetech.org)
31. Stein, Y. (2021). Preventive measures to reduce harmful effects produced by electromagnetic radiation on health. *Health Risk Analysis*, doi: [10.21668/health.risk/2021.3.04.eng](https://doi.org/10.21668/health.risk/2021.3.04.eng)
32. Panagopoulos, D., & Chrousos, G (2019). Shielding methods and products against man-made Electromagnetic Fields: Protection versus risk. *Science of the Total Environment* 667 (2019) 255–262 <https://doi.org/10.1016/j.scitotenv.2019.02.344>
33. Balmori, A. (2022). Evidence for a health risk by RF on humans living around mobile phone base stations: From radiofrequency sickness to cancer. *Environmental Research*, 214, 113851. <https://doi.org/10.1016/j.envres.2022.113851>

34. Hardell, L., Koppel, T. (2022). Electromagnetic hypersensitivity close to mobile phone base stations – a case study in Stockholm, Sweden. *Reviews on Environmental Health*.
<https://doi.org/10.1515/reveh-2021-0169>
35. Carpenter, D. Slide Presentation: Adverse health effects from radiofrequency (RF) radiation with a focus on AMI meters. University of Albany, Institute for Health and the Environment.
<https://www.wsscwater.com/sites/default/files/sites/wssc/files/Commission%20Agendas/2020%20agendas/october/Dr%20Carpenter%20Presentation.pdf>
36. Carpenter, D. (2020). Letter to WSSC Water. Response to report on potential impacts on human health of advanced metering infrastructure University of Albany, Institute for Health, and the Environment.
<https://www.wsscwater.com/sites/default/files/sites/wssc/files/ami/Final%20RF%20Report.pdf>
37. Conrad, R. & Friedman, E. (2013). Smart meter health effects survey and report. Golomb, B., Baldwin, H., Davis, D., Goldberg, S., Havas, M., Mattson, K., Mallory-Blythe, E., & Russell, C. (2020, October 23-24 and 2021, January 28 -31). *Prevention, Diagnosis and Treatment of EMF Associated Illness and Pre-Conference Course: Electromog and Electrotherapeutics 101*. Virtual Conference.
<https://emfconference2021.com/>
38. Flydal, E. & Nordhagen, E. (2023). *Smart meters, dirty electricity, pulses and health*, 2270 Nedlastinger. ISBN 978-82-692792-2-1 <https://radiationresearch.org/smart-meters-dirty-electricity-pulses-and-health/>
39. French Court Case Ruling – smart meters: <https://smartmeterharm.org/2025/04/26/victory-against-enedis-the-court-rules-against-the-forced-installation-of-linky-meters/>
40. Halteman, E. (2019). EMF Health effects survey 2019. Final Results March 12, 2019. Survey Design and Analysis. EMF Safety Network. https://emfsafetynetwork.org/wp-content/uploads/2019/03/EMF_Wireless-Study-2019_Final-1.pdf
41. Jamieson, I & Mallory-Blythe, E. (2016). Joint written evidence, SME0004 Parliament UK Testimony. Evidence on smart meters.
<https://committees.parliament.uk/writtenevidence/66836/pdf/>
42. Lamech, F. (2014). Self-reporting of symptom development from exposure to radiofrequency fields of wireless smart meters in Victoria, Australia. *Alternative Therapies*, 20 (6), 28-38. NIH PMID 25478801
<https://pubmed.ncbi.nlm.nih.gov/25478801/>
43. Maisch, D. (2012). Smart meter health concerns: Just a placebo effect or an emerging public health nightmare? *Australian College of Nutritional and Environmental Medicine*. 31 (2).
https://maisonsaine.ca/uploads/2013/12/Don_Maisch_from_ACNEM_Journal_Sept_2012.pdf

44. Namkung, P. (2012). Memorandum: Health risks associated with smart meters. County of Santa Cruz Health Services Agency.
<https://smartgridawareness.org/2016/10/02/health-risks-associated-with-smart-meter-wireless-emissions/>
45. Smart meter radiation health effects. Physicians for Safe Technology
www.mdsafetech.org
46. Pocket, S. (2018). Public health and the radiofrequency radiation emitted by cellphone technology, smart meters and WiFi. New Zealand Medical Association Journal. 131 (1487), ISSN 1175-8716. <https://nzmj.org.nz/media/pages/journal/vol-131-no-1487/public-health-and-the-radio-frequency-radiation-emitted-by-cellphone-technology-smart-meters-and-wifi/630972870c-1696475868/public-health-and-the-radio-frequency-radiation-emitted-by-cellphone-technology-smart-meters-and-wifi.pdf>
47. Powell, R. (2014). The health argument for replacing wireless smart meters with a safe metering technology in Maryland. A message to the Maryland General Assembly. 1-20.
<https://www.scribd.com/document/289787721/The-Health-Argument-for-Replacing-Wireless-Smart-Meters-with-a-Safe-Metering-Technology-in-Maryland>
48. National Council on Disability (2025). Framework to End Health Disparities of People with Disabilities. <https://www.ncd.gov/report/framework-to-end-health-disparities-of-people-with-disabilities/>
49. Legal Opinion of U.S. Dept. of Housing and Urban Development, For: Frank Keating, General Counsel, From: Carole W. Wilson, Associate General Counsel for Equal Opportunity, March 5, 1992 on MCS Disorder and Environmental Illness as Handicaps.
<https://share.google/PaG6zFYTqINyNmcpI>
50. Department of Defense (1996). Instruction Number DoD 6055.11 Protecting DOD Personnel from Exposure to Radiofrequency Radiation and Military Exempt Lasers. February 21, 1995.
<https://www.dau.edu/sites/default/files/Migrated/CopDocuments/DoDI%206055.11.pdf>
51. Social Security Administration, Administrative Law Judge's finding that claimant's electromagnetic sensitivity is a severe impairment, May 11, 2020,
<https://ehtrust.org/wp-content/uploads/Electromagnetic-Sensitivity-Found-to-be-a-Severe-Impairment-by-the-Social-Security-Administration-2003-and-2020-.pdf>.
52. Job Accommodation Network, Information Regarding Electrical Sensitivity, (Accessed January 17, 2026.) <https://askjan.org/disabilities/Electrical-Sensitivity.cfm>
53. U.S. Department of Commerce: National Technical Information Service (1997). NIOSH 583. Non-ionizing radiation: Hazards and controls. Held in Seattle, Washington on February 24-28, 1997. Washington University, Seattle.
<https://stacks.cdc.gov/view/cdc/217897>

54. Centers for Disease Control and Prevention (2026). National Center for Health Statistics, International Disease Classification IDC-10-CM. (Accessed January 21, 2026.)
<https://icd10cmtool.cdc.gov/?fy=FY2024&query=w90.0>.
55. Powel (2020). United States Court of Appeals for the District of Columbia Circuit, USCA Case #20-1025 Document #1869749 filed 11/04/2020 Volumes 1-27. [Click here](#)
56. Panagopoulos, D. ed. (2021). Electromagnetic fields of wireless communications: Biological and Health Effects. CRC Press.
<http://dx.doi.org/10.1201/9781003201052>.
57. McCredden, J, McLean, L, Steinemann, A (2026) Wireless sensitivity and co-morbidities: A prevalence study in Australia, Canada, and the United States. Next Research (8) 101577. <https://doi.org/10.1016/j.nexres.2026.101577>