



COVID-19 Public Health Updates

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NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Objectives

- Review recent MMWR on mental health during the pandemic
- Multisystem Inflammatory Syndrome in Children (MIS-C) and Adults (MIS-A)
 - Updates on case definitions, when and how to report





Quiz Q's

Homage to Dr. Becker!



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MMWR – National and State Trends in Anxiety and Depression Severity Scores Among Adults During the COVID-19 Pandemic- United States, 2020-2021

- US Census Bureau Household Pulse Survey (HPS) data indicate percentages of adults with symptoms of anxiety and depression
- **Main Takeaways:**
 - Average anxiety and depression scores increased Aug 2020-Dec 2020, and decreased from December 2020 to June 2021
 - Scores correlate with number of daily cases of COVID-19





Study Design

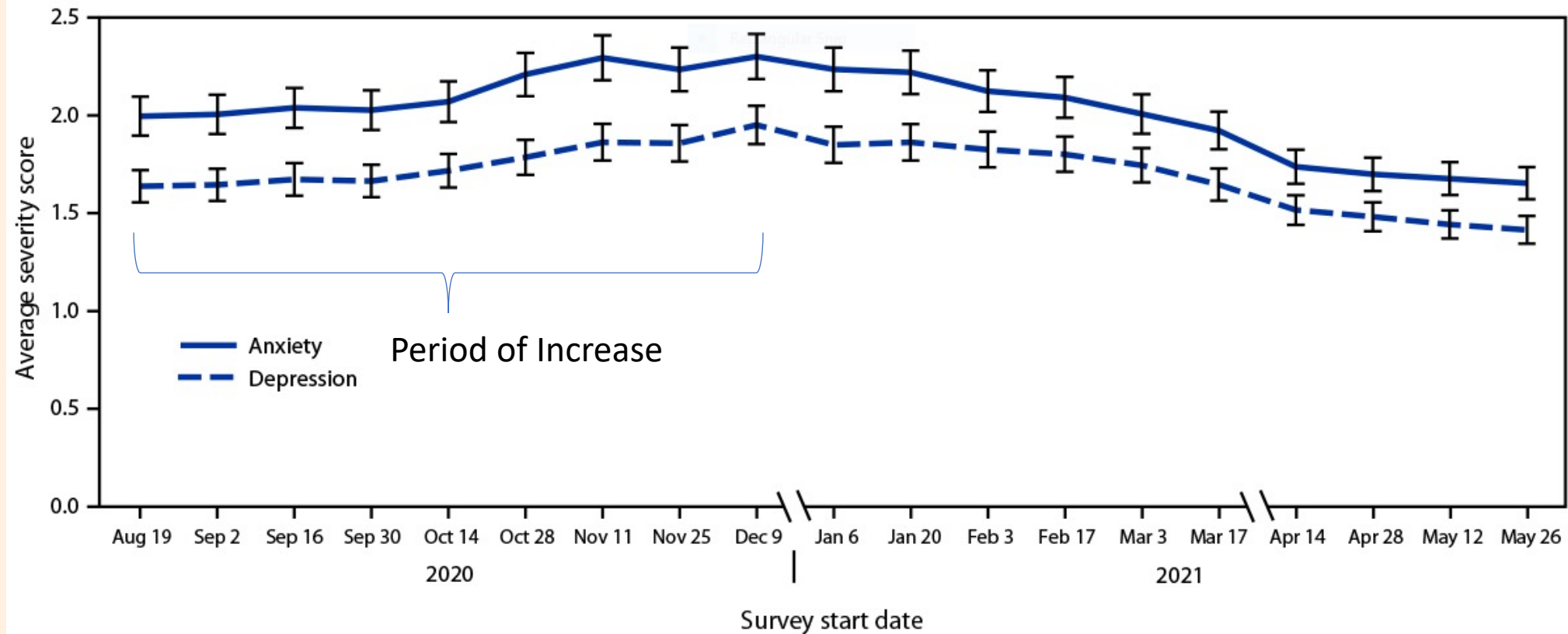
- Data obtained from HPS – biweekly, online surveys established by CDC and federal agencies to assess social and economic impacts of COVID-19
 - US Census Bureau master address list of 117 million US housing units
 - Used sample weights in analyses to generate representative groups based on age, sex, race/ethnicity and education
- Time period of surveys:
 - 19 waves from Aug 2020 – Jun 2021
 - Breaks during holidays and two weeks in March 2021
- Responses: 1,526,154 for all 19 waves
 - Overall survey response percent ranged from 5.3% to 10.3% among the 19 waves examined

Study Design Continued

- Assessment tool = 2 Generalized Anxiety Disorder (GAD) questions + 2 Personal Health Questionnaire (PHQ) questions
- Two anxiety questions:
 - 1) feeling nervous, anxious, or on edge and
 - 2) not being able to stop or control worrying
- Two depression questions:
 - 1) having little interest or pleasure in doing things and
 - 2) feeling down, depressed, or hopeless
- Scoring: In past 1 week, not at all = 0, several days = 1, more than half of the days = 2, and nearly every day = 3
- Total score ranges from 0 to 6

Results

FIGURE. Trends in average anxiety and depression severity scores* among adults, by survey start date — Household Pulse Survey, United States, August 19, 2020–June 7, 2021†



* 95% confidence intervals indicated by error bars.

† Data for adults aged ≥ 18 years were collected from 19 biweekly surveys (waves) conducted during August 19, 2020–June 7, 2021 (waves 13–31), with breaks during December 22, 2020–January 5, 2021, and March 30–April 13, 2021.

Results

- Average anxiety severity scores increased 13% between Aug and Dec 2020; during this same period, the average depression severity score increased 14.8%
- From Jan to Jun 2021, the average anxiety severity score decreased 26.8%; during this same period, the average depression severity score decreased 24.8%



Trends by states

- States with larger increases in severity scores during August–December 2020 also tended to have larger decreases during January–June 2021
- Highest increases in anxiety:
 - Mississippi, Oklahoma, and South Carolina
- Highest increases in depression:
 - Minnesota, Mississippi, and South Carolina
- Smallest increase in anxiety and depression
 - Florida and New York
- During January–June 2021, Minnesota, Rhode Island, and Utah had the largest percentage decreases in anxiety scores



Discussion

- The relative increases and decreases in frequency of reported symptoms of anxiety and depression at both the national and state levels mirrored the national weekly number of new COVID-19 cases during the same period
- **Limitations:**
 - Modified GAD/PHQ
 - Response percent < 10%
 - Missed holidays when rates of COVID-19 cases were high
 - The decrease in June 2021 is just before Delta variant
 - Recall biases
 - Generalizability as US housing units were surveyed
 - Compare to rates of temporal anxiety and depression (non-pandemic)







Multisystem Inflammatory Syndrome in Children (MIS-C) Case Definitions, Reporting Practices

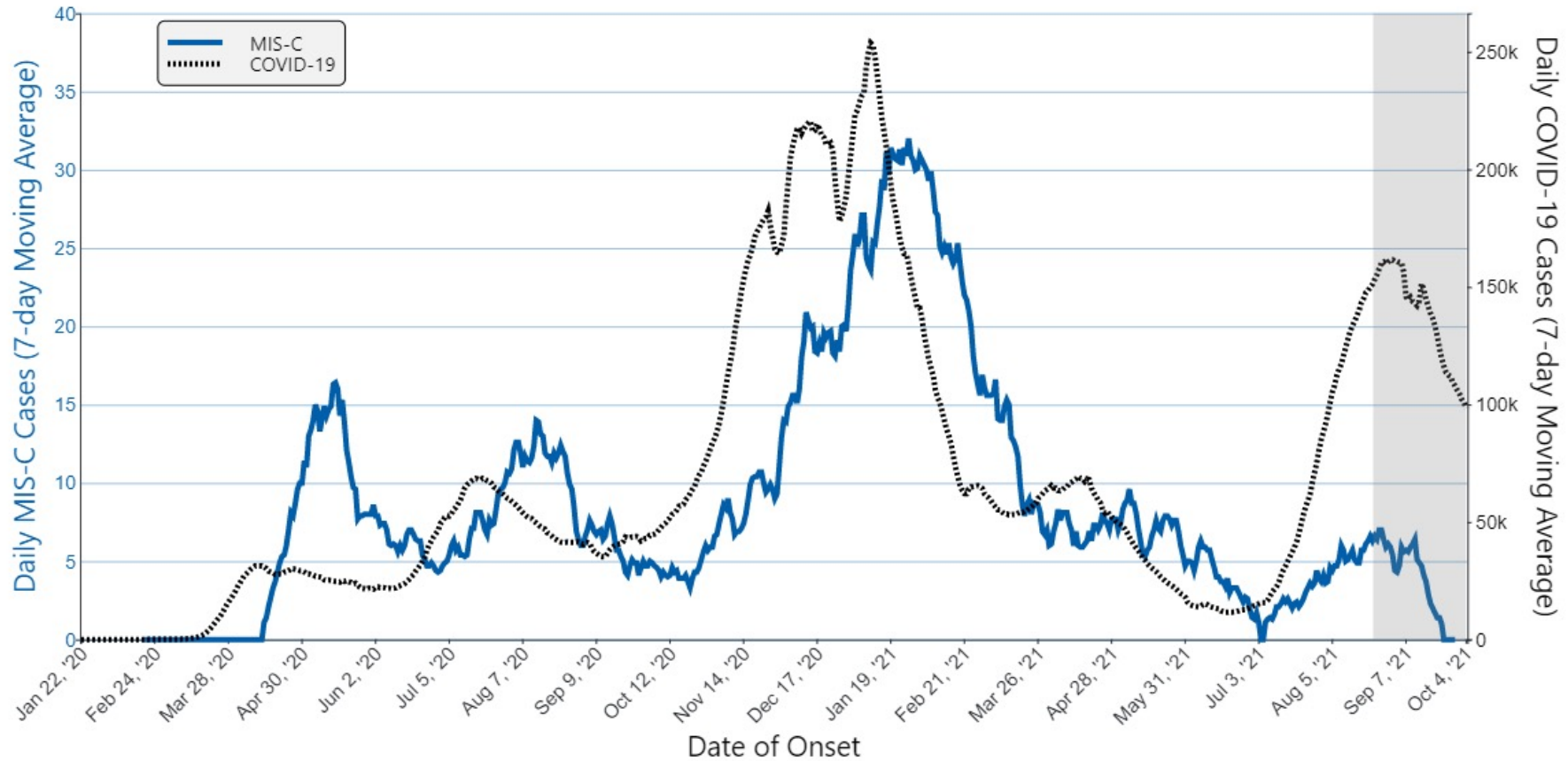
Case Definition:

- Individual aged <21 years presenting with:
 - fever*
 - laboratory evidence of inflammation**
 - evidence of clinically severe illness requiring hospitalization
 - multisystem (≥ 2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological);
 - no alternative plausible diagnoses; AND
- Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or exposure to a suspected or confirmed COVID-19 case within the 4 weeks prior to the onset of symptoms
- Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection

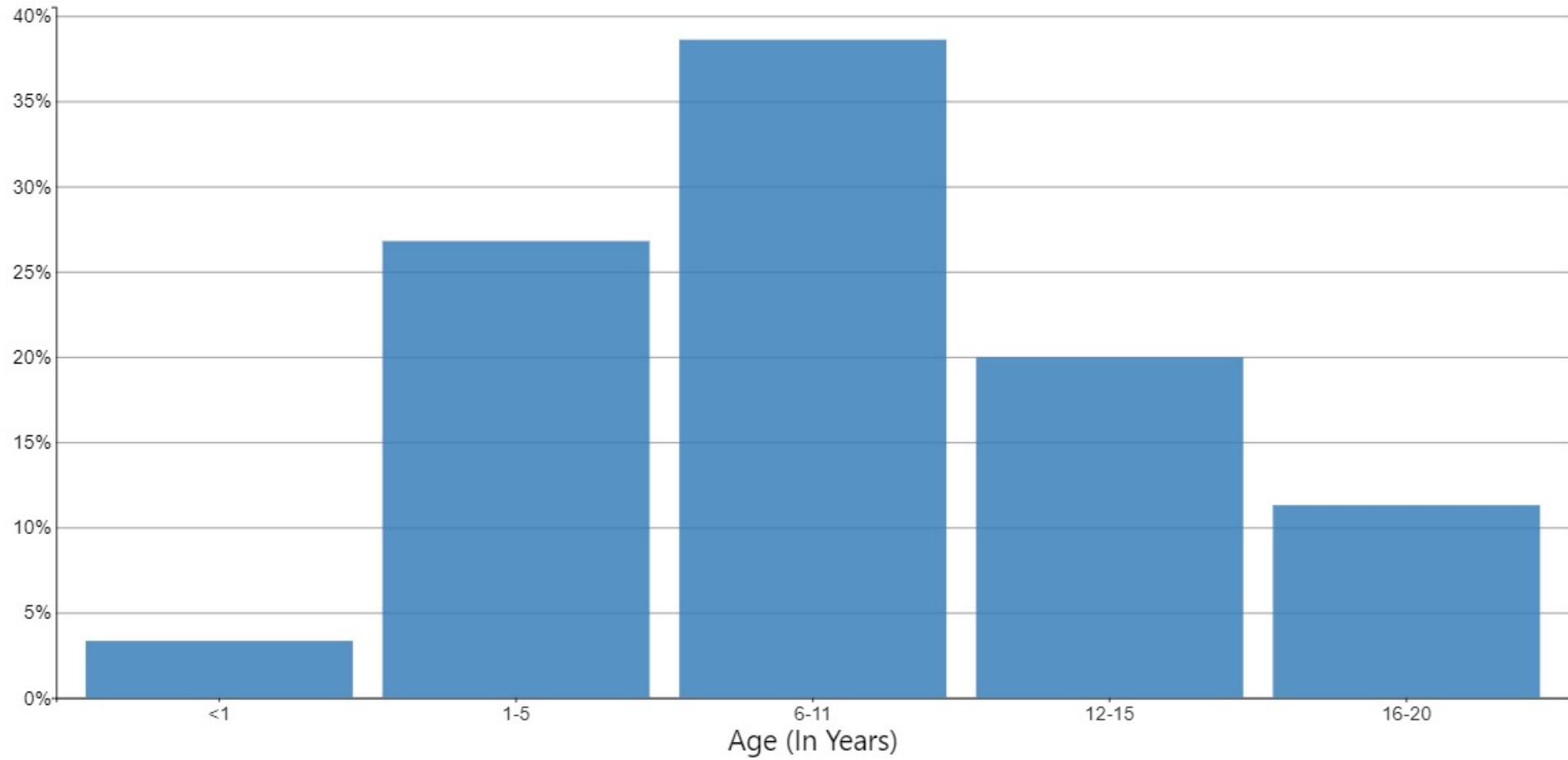
*Fever $\geq 38.0^{\circ}\text{C}$ for ≥ 24 hours, or report of subjective fever lasting ≥ 24 hours

**Including, but not limited to, one or more of the following: an elevated C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, d-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin

Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)



MIS-C Patients By Age Group



MIS-C Case Definitions, Reporting Practices

- It is important and required to **report** suspected cases among patients younger than 21 years of age meeting MIS-C criteria to local, state, or territorial health department
- Clinicians can report by submitting either completed case report forms or medical records for review
- <https://www.cdc.gov/mis/pdfs/hcp/mis-c-form-fillable.pdf>



Discussion

- Ongoing need and requirement for reporting MIS-C
- Future area of investigation of MIS-C among AI/AN
- Better reporting will allow for further characterization of recovery and/or long term sequelae



MIS in Adults (MIS-A)

- MIS-A is a rare but important syndrome that can be difficult to distinguish from severe COVID-19
- Particularly difficult to diagnose in older patients with cardiac and other comorbidities
- Although MIS-A may be underdiagnosed, it is reported at a much lower frequency than MIS-C
- The evidence for MIS-A is slowly increasing
- Working case definition is evolving:
 - <https://www.cdc.gov/mis/mis-a/hcp.html>





MIS-A Case Definition

A patient ≥ 21 years hospitalized for ≥ 24 hours, or with an illness resulting in death, meeting clinical and laboratory criteria:

- I. Clinical Criteria: Fever (≥ 38.0 C) for ≥ 24 hours prior to hospitalization or within the first THREE days of hospitalization* and at least THREE of the following clinical criteria occurring prior to hospitalization or within the first THREE days of hospitalization*. At least ONE must be a primary clinical criterion.
 - I. Primary clinical criteria
 - I. Severe cardiac illness *Includes myocarditis, pericarditis, coronary artery dilatation/aneurysm, or new-onset right or left ventricular dysfunction (LVEF<50%), 2nd/3rd degree A-V block, or ventricular tachycardia. (Note: cardiac arrest alone does not meet this criterion)*
 - II. Rash AND non-purulent conjunctivitis
 - II. Secondary clinical criteria
 - I. New-onset neurologic signs and symptoms *Includes encephalopathy in a patient without prior cognitive impairment, seizures, meningeal signs, or peripheral neuropathy (including Guillain-Barré syndrome)*
 - II. Shock or hypotension not attributable to medical therapy (e.g., sedation, renal replacement therapy)
 - III. Abdominal pain, vomiting, or diarrhea
 - IV. Thrombocytopenia (platelet count $< 150,000$ / microliter)
 - II. Laboratory evidence
The presence of laboratory evidence of inflammation AND SARS-CoV-2 infection.
 - I. Elevated levels of at least TWO of the following: C-reactive protein, ferritin, IL-6, erythrocyte sedimentation rate, procalcitonin
 - II. A positive SARS-CoV-2 test for current or recent infection by RT-PCR, serology, or antigen detection
- **NOTE:** *These criteria must be met by the end of hospital day 3, where the date of hospital admission is hospital day 0.

FDA Updates on Moderna and Johnson & Johnson Booster Eligibility

- Formal recommendations soon



Quiz

- When did anxiety and depression scores increase during the pandemic?
- Which states had among the highest increases in anxiety and depression scores?
- Is MIS-C reportable?
- MIS-C has the highest prevalence among which age group?



Conclusions

- Rates of anxiety and depression increased during pandemic and correlated with case rates of COVID-19
- Continued need for mental health services, resources and particularly telehealth
- Importance of reporting MIS-C
- MIS-A definitions are evolving and require further investigation
- Formal FDA and ACIP recommendations on Moderna and Johnson & Johnson booster eligibility will be available soon





Works Cited

- Jia H, Guerin RJ, Barile JP, et al. National and State Trends in Anxiety and Depression Severity Scores Among Adults During the COVID-19 Pandemic — United States, 2020–2021. *MMWR Morb Mortal Wkly Rep* 2021;70:1427–1432. DOI: <http://dx.doi.org/10.15585/mmwr.mm7040e3external icon>.
- Patel P, DeCuir J, Abrams J, Campbell AP, Godfred-Cato S, Belay ED. Clinical Characteristics of Multisystem Inflammatory Syndrome in Adults: A Systematic Review. *JAMA Netw Open*. 2021;4(9):e2126456. doi:10.1001/jamanetworkopen.2021.26456
- [CDC COVID-tracker website](#)
- MIS-C/MIS-A Links:
 - <https://www.cdc.gov/mis/mis-a/hcp.html>
 - https://www.cdc.gov/mis/mis-c/hcp/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fmis%2Fhcp%2Findex.html

