



DIGITAL SERVICE AT CMS

Digital Service and Digital Transformation at CMS

Zach Withers, Product Manager, Digital Service at CMS.gov

Centers for Medicare & Medicaid Services // Health Datapalooza // September 2024

<https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>
opensource@cms.hhs.gov



Digital Services at CMS and HHS

What's Coming Next

- 1. The Digital Service at CMS**
- 2. Up The Ladder: Grabbing AI by the Horns at HHS**
- 3. Uncle Sam Wants YOU**



The Digital Service at CMS

cms.gov/digital-service



• What does the Digital Service at CMS do?

We work to transform the U.S. healthcare system by:



Improving the design of
healthcare experiences



Delivering value to the
government, healthcare
providers, and patients



Modernizing systems



Participating in policy
development

4 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



• How do we do it?

We deploy **small groups** of designers, engineers, and product managers on a "tour of duty" to work alongside **dedicated civil servants**.

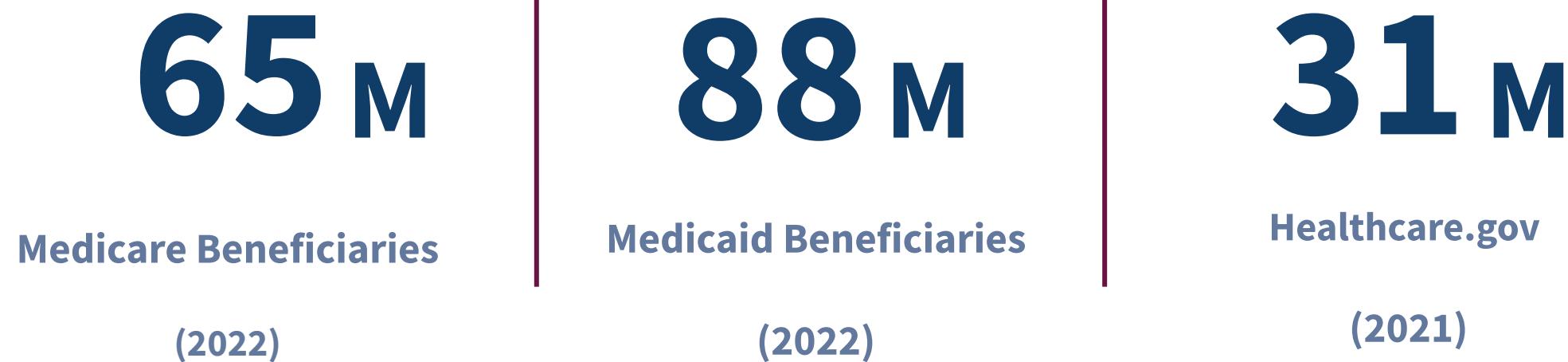
These **multidisciplinary teams** bring best practices and new approaches to support government **modernization** efforts.



5 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



Who we serve: The American People



<https://data.cms.gov/fact-sheet/cms-fast-facts>

<https://www.cms.gov/files/document/2022-medicare-trustees-report.pdf>

6 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



Who we serve: Taxpayers

\$ 1.7 T

CMS Budget - 12% of the
federal budget

(FY 2022)

\$ 829 B

Total Medicare Payments

(FY 2021)

\$ 646 B

Total Medicaid Payments

(FY 2019)

<https://data.cms.gov/fact-sheet/cms-fast-facts>

<https://www.cms.gov/files/document/2022-medicare-trustees-report.pdf>

7 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



Who we serve: The Health Care System

6,244

CMS Employees

(FY 2022)

1.4M

Health Care Providers

(2022)

20 %

National Health Care
Spending is Medicare

(2022)

<https://data.cms.gov/fact-sheet/cms-fast-facts>

<https://www.cms.gov/files/document/2022-medicare-trustees-report.pdf>

8 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



Up The Ladder: Grabbing AI by the Horns at HHS



EO 14110 - All-of-Government AI Governance

75191

Federal Register

Vol. 88, No. 210

Wednesday, November 1, 2023

Presidential Documents

Title 3—

Executive Order 14110 of October 30, 2023

The President

Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Purpose. Artificial intelligence (AI) holds extraordinary potential for both promise and peril. Responsible AI use has the potential to help solve urgent challenges while making our world more prosperous, productive, innovative, and secure. At the same time, irresponsible use could exacerbate societal harms such as fraud, discrimination, bias, and disinformation; displace and disempower workers; stifle competition; and pose risks to national security. Harnessing AI for good and realizing its myriad benefits requires mitigating its substantial risks. This endeavor demands a society-wide effort that includes government, the private sector, academia, and civil society.



• Making It Happen

- Dedicated Agency Leadership
- Enhanced Staffing
- Implementation Standards
- Rights and Safety Review and Protections



THE DIRECTOR

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

March 28, 2024

M-24-10

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Shalanda D. Young

SUBJECT: Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence

Artificial intelligence (AI) is one of the most powerful technologies of our time, and the President has been clear that we must seize the opportunities AI presents while managing its risks. Consistent with the AI in Government Act of 2020,¹ the Advancing American AI Act,² and Executive Order 14110 on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, this memorandum directs agencies to advance AI governance and innovation while managing risks from the use of AI in the Federal Government, particularly those affecting the rights and safety of the public.³

11 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



• ASTP: HHS Tech Policy in One Place

- ONC's got a new home at the mothership
- Dedicated Leadership for What's Next:
 - Chief Technology Officer
 - Chief Data Officer
 - Chief AI Officer
- Internal and External Policy, together at last

FOR IMMEDIATE RELEASE

July 25, 2024

Contact: HHS Press Office

202-690-6343

media@hhs.gov

HHS Reorganizes Technology, Cybersecurity, Data, and Artificial Intelligence Strategy and Policy Functions

The U.S. Department of Health and Human Services (HHS) today announced a reorganization that will streamline and bolster technology, cybersecurity, data, and artificial intelligence (AI) strategy and policy functions.

Opportunities in data and technology in healthcare and human services have grown significantly in recent years. Historically, responsibility for policy and operations has been distributed across the Office of the National Coordinator for Health Information Technology (ONC), the Assistant Secretary for Administration (ASA), and the Administration for Strategic Preparedness and Response (ASPR). This reorganization will clarify and consolidate these critical functions, as follows:

- ONC will be renamed the Assistant Secretary for Technology Policy and Office of the National Coordinator for Health Information Technology (ASTP/ONC);
- Oversight over technology, data, and AI policy and strategy will move from ASA to ASTP/ONC, including the HHS-wide roles of Chief Technology Officer, Chief Data Officer, and Chief AI Officer; and
- The public-private effort between the health sector and the federal government on cybersecurity ("405(d) Program") will move from ASA to ASPR, joining the other health sector cybersecurity activities already located in ASPR's Office of Critical Infrastructure Protection, and advancing the Department's one-stop-shop approach to healthcare cybersecurity.



Uncle Sam Wants YOU

To Tell us What's Up



• CMS RFI for AI Demos is OPEN until 10/7

- **What:**
 - A chance to show CMS your AI innovations.
- **Who:**
 - Anyone with something good to show us.
 - Just for Big Legacy Vendors? Heck No.
- **When:**
 - Written submissions until October 7th, interviews to follow.
- **Why:**
 - So you can educate us about the state of the art.
 - So we can find out about your cool product we might need.

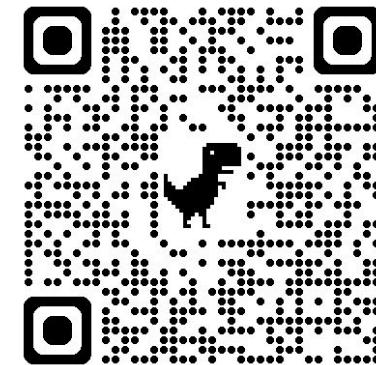
CMS.gov Centers for Medicare & Medicaid Services

About CMS Newsroom Data & Research 

Medicare ▾ Medicaid/CHIP ▾ Marketplace & Private Insurance ▾ Priorities ▾ Training & Education ▾

[Home](#) > About CMS > What we do > Digital Service at CMS > Artificial Intelligence Demo Days

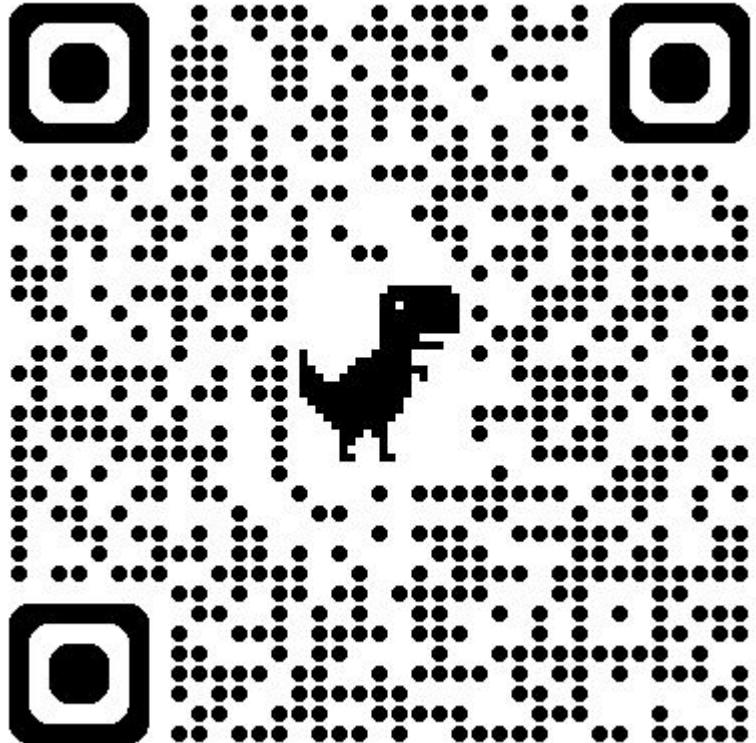
Request for Information on Artificial Intelligence Technologies for Improving Health Care Outcomes and Service Delivery



cms.gov/digital-service/artificial-intelligence-demo-days



• We're Going to Keep Doing This



cms.gov/digital-service/artificial-intelligence-demo-days

15 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>

1.3 RFI Timeline

Please review the below RFI timeline. Dates may be modified or amended by CMS which will post an amendment to this RFI notifying prospective respondents and public of any change.

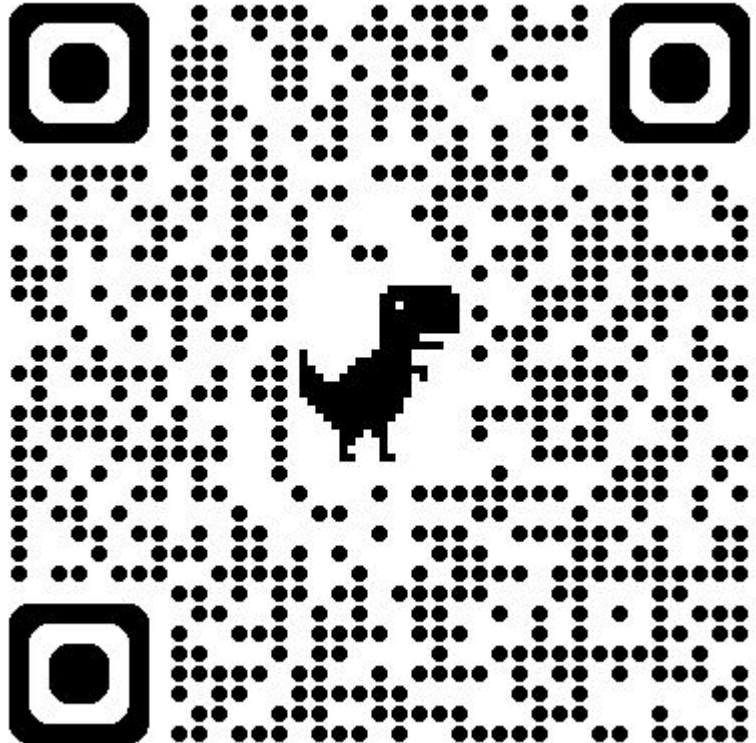
- **RFI Released:** September 9, 2024
- **Deadline for RFI Questions:** September 27, 2024
- **RFI Responses Due:** October 7, 2024
- **CMS AI Demo Day Selections and Notifications:** Made on a quarterly basis starting October 2024

RFI Released: An announcement for Demo Days, in the form of the RFI, will be publicly released on the CMS digital service website and will be made available to the public for responses.

Deadline for RFI Questions: Any questions about the content of the RFI must be submitted to cmsdemodays@cms.hhs.gov by the deadline for CMS to provide a response. Questions about the content of this RFI and CMS AI Demo Days will be accepted through the Deadline for RFI Questions. No responses to questions submitted after the September 27th date will be responded to.



• What We're Looking For



cms.gov/digital-service/artificial-intelligence-demo-days

Section 3: Information Requested

Section 3.1: Who We're Looking For

CMS is especially interested in hearing from firms, organizations, or individuals who are developers of the following AI functionalities in the health care sector:

- Generative AI
- Diagnostics and imaging analysis
- Clinical documentation and summarization
- Alert/risk assessment and predictive analytics
- Clinical decision support systems
- Business administration automation and efficiencies
- Staffing and workforce enablement
- Billing, benefits, and utilization management
- Direct-to-patient communication
- AI direct care, such as robotic-assisted health care delivery
- Fraud detection

CMS welcomes comments from all interested parties.





DIGITAL SERVICE AT CMS

Establishing the first Open Source Program Office (OSPO) at a United States Federal Agency

Remy DeCausemaker, Open Source Lead, Digital Service at CMS.gov

Centers for Medicare & Medicaid Services // HealthDataPalooza // September 2024

<https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>
opensource@cms.hhs.gov



Open Source Program Office (OSPO) at CMS

- 1. About Our OSPO**
- 2. How we reduce duplicate work**
- 3. How we reduce risk**
- 4. Why this is important**
- 5. How you can help**



• Biden-Harris Administration Releases End of Year Report on Open-Source Software Security Initiative (OS3I)

THE WHITE HOUSE



Administration Priorities The Record Briefing Room Español

MENU



AUGUST 09, 2024

Fact Sheet: Biden-Harris Administration Releases Summary Report of 2023 RFI on Open Source-Software Security Initiative

ONC > BRIEFING ROOM > PRESS RELEASE

August 9, 2024

[Read the full report here](#)

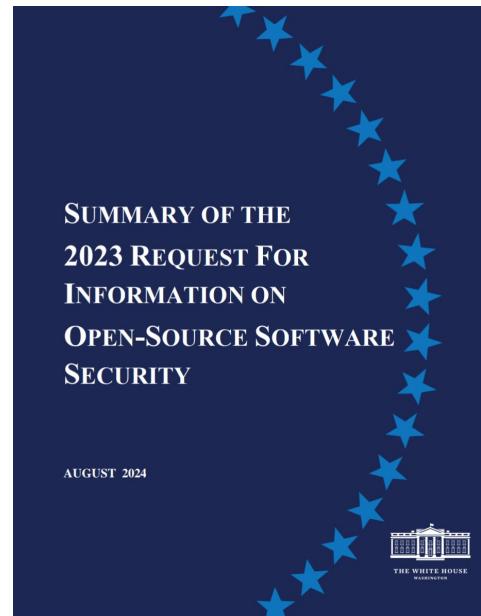
Today, the White House Office of the National Cyber Director, in partnership with members of the [Open-Source Software Security Initiative \(OS3I\)](#), is publishing a summary report on the [Request for Information \(RFI\) ↗: Open-Source Software Security: Areas of Long-Term Focus and Prioritization](#). This builds on the commitment the Administration made in the [National Cybersecurity Strategy](#), “to invest in the development of secure software, including memory-safe languages and software development techniques, frameworks, and testing tools.”

whitehouse.gov/wp-content/uploads/2024/08/Summary-of-the-2023-Request-for-Information-on-Open-Source-Software-Security.pdf

19 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



Establish the First U.S. Government OSPO: The Department of Health and Human Services (HHS) Center for Medicaid and Medicare Services (CMS) recently established the first Open-Source Program Office at a United States Federal Agency.^{xl} The function of the OSPO is to establish and maintain guidance, policies, practices, and talent pipelines that advance equity, build trust, and amplify impact across CMS, HHS, and Federal Government’s open-source ecosystem by working and sharing openly.



OPEN-SOURCE SOFTWARE SECURITY RFI SUMMARY



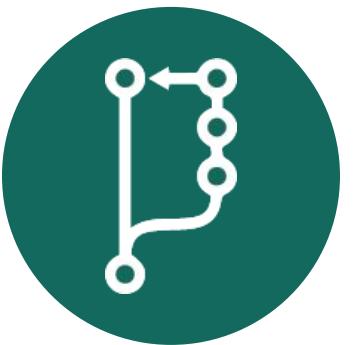
DIGITAL SERVICE AT CMS

• How do we do Open Source at CMS?



Policies

How we **inbound** and **outbound** open source contributions and content



Projects

How we **solve real-world problems** by working in the open



Programs

How we **measure**, and **manage** contributors, projects, **risks**, and **opportunities**

What is an Open Source Program Office? (OSPO)

*An open source program office (OSPO) serves as the center of competency for an organization's open source operations and structure. It is responsible for defining and implementing **strategies**, **programs**, and **policies** to guide these efforts.*

CMS OSPO Functional Statement:

*“Establishes and maintains guidance, policies, practices, and talent pipelines that **advance equity**, **build trust**, and **amplify impact** across CMS, HHS, and Federal Open Source Ecosystems by working and sharing openly.”*



CMS Open Source Program Office (OSPO)



Remy DeCausemaker
Open Source Team Lead



Natalia Luzuriaga
US Digital Corps
Fellow '23



Isaac Milarsky
US Digital Corps
Fellow '23



Dinne Kopelevich
US Digital Corps
Fellow '24



Sachin Panayil
US Digital Corps
Fellow '24



Brandon Yee
Coding It Forward
Yale '25

Nicholas Jean
Coding It Forward
Berkeley '25

Ricardo Zamora
Coding It Forward
Wesleyan '24

Sarah Karr
Presidential Management Fellowship
Data Science / Development

Zainab Kehinde (Keni)
CodeInTheSchools
Full-Stack Developer

Jabir Ghaffar
CodeIntheSchools
Full-Stack Developer



“Risks” (aka Myths) of Open Source

Open source is ~~less~~ more secure.

"Many eyes make any bug shallow." The more people looking at a project, the faster we'll be able to identify problems and create solutions.



Open source is ~~bad~~ good for for-profit businesses.

By lowering **barriers to entry and costs of acquisition**, developers are given access to world-class industry leading tools and infrastructure used at the largest enterprises today.



~~Open Source means all data must be public.~~
Open Source means SOME data CAN be public.

Open source is not a binary, it is a spectrum, and there are layers to the stack. Being intentional about what we cannot share for privacy and security purposes, helps us determine what we can share more effectively.



Open by Default is something we ~~do not~~ already do in Federal Government.

According to **Title 17 U.S. Code § 101 and § 105**, "Copyright protection under this title is not available for any work of the United States Government" meaning, "work prepared by an officer or employee of the United States Government as part of that person's official duties." [1][2]



What are the *actual* Risks in Open Source?



Overdifferentiation

- Unnecessarily duplicating work
- Unnecessarily dividing your resources

Examples

- “Not Invented Here Syndrome”



Proliferation

- Unnecessarily duplicating communities and projects
- Unnecessarily dividing your addressable market

Examples

- License Proliferation
- Event/Conference Proliferation



Fragmentation

- Unnecessarily dividing your community of contributors

Examples

- Hostile Forks
- Internal Forks

- How does our OSPO provide value to the Agency?



Save us Money



Save us Time



Accountability for
Contract Performance



Engine for Talent



Reduce Duplicate
Work



Reduce Duplicate
Costs



Reduce Security
Risk



Reduce Continuity
Risk

• CMS Open Source Repository Baselines Overview: [repo-scaffolder](#)

Open Source Repository Maturity Models

- Where is our project on our Open Source Journey?
- <https://github.com/dsacms/repo-scaffolder/blob/main/maturity-model-tiers.md>

Repository Templates

- What files are required/recommended for healthy repository hygiene?
- https://github.com/DSACMS/repo-scaffolder/tree/main/tier3/{{cookiecutter.project_slug}}

Outbound Checklists

- What steps should our project take to release the repository publicly?
- <https://github.com/dsacms/repo-scaffolder/blob/main/tierX/checklist.pdf>

Cookiecutter

- How do we know what Maturity Model Tier our project should be in? What files are required in that Tier?
- cookiecutter <https://github.com/DSACMS/repo-scaffolder> -directory=tierX

Repolinter Configs

- What files or information is missing from our repo?
- https://github.com/DSACMS/repo-scaffolder/blob/main/tier1/{{cookiecutter.project_slug}}/repolinter.json



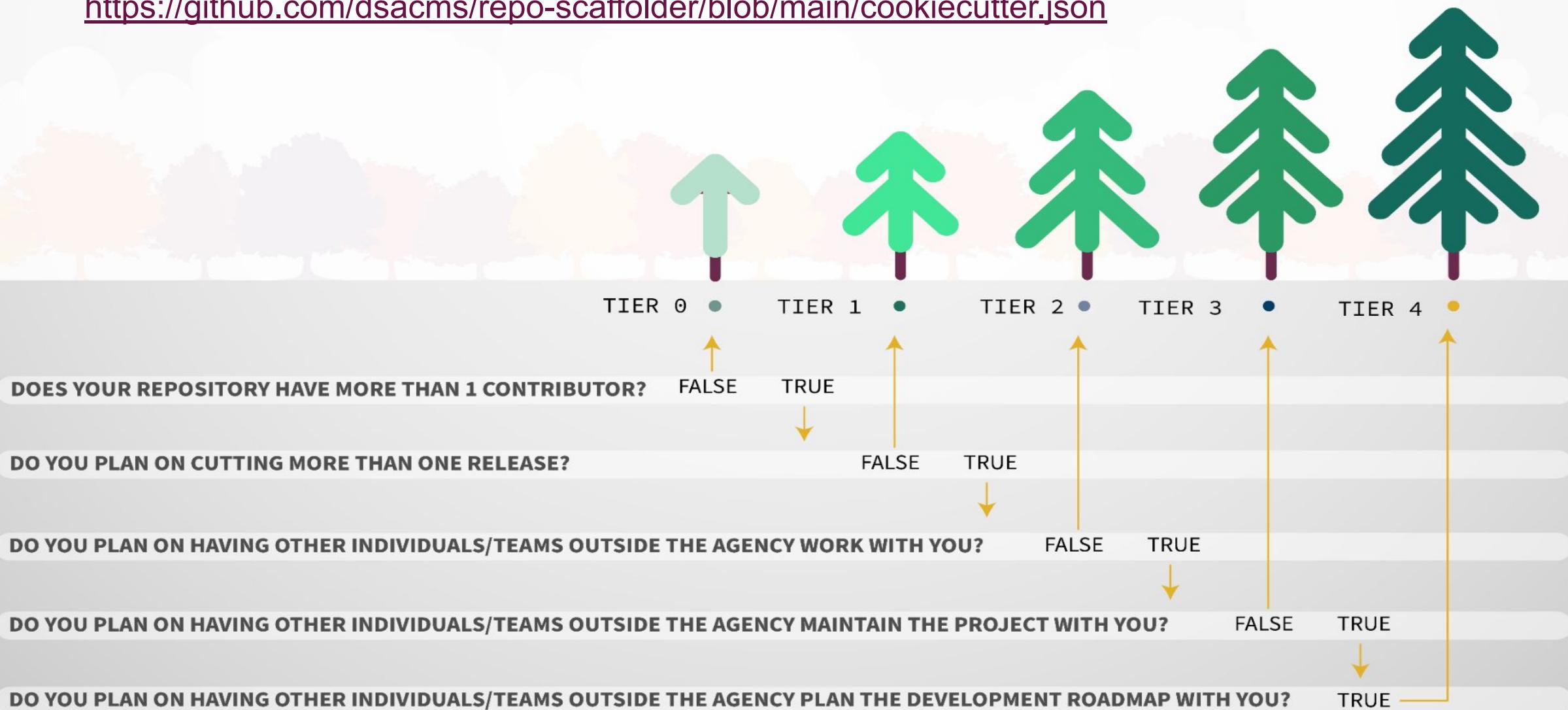
How we reduce duplicate work

Repository Maturity Models & Cookiecutter Configs



cookiecutter command-line tool v2: Tier-selection config

<https://github.com/dsacms/repo-scaffolder/blob/main/cookiecutter.json>



• CMS Open Source Repository Maturity Model (v2)

Public Repo on GitHub!

<https://github.com/dsacms/repo-scaffolder/blob/main/maturity-model-tiers.md>

File	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4
LICENSE	M	M	M	M	M
SECURITY.md	N	M	M	M	M
README.md	M	M	M	M	M
CONTRIBUTING.md	R	R	M	M	M
MAINTAINERS.md	N	N	R	M	M
GOVERNANCE.md	N	N	N	R	M
CODEOWNERS.md	N	N	R	M	M
COMMUNITY_GUIDELINES.md	N	N	M	M	M
CODE_OF_CONDUCT.md	N	N	M	M	M



How we reduce risk

Outbound Repository Checklists, Metrics, and Linters



- # Outbound Review Checklists

Tier1 - One-Time Release

<https://github.com/DSACMS/repo-scaffolder/blob/main/tier1/checklist.pdf>

Tier2 - Close Collaboration

<https://github.com/DSACMS/repo-scaffolder/blob/main/tier2/checklist.pdf>

Tier3 - Working In Public

<https://github.com/DSACMS/repo-scaffolder/blob/main/tier3/checklist.pdf>

Tier4 - Open Governance

<https://github.com/DSACMS/repo-scaffolder/blob/main/tier4/checklist.pdf>



CMS.gov Open Source Repository Metrics Front-end

CMS.gov Open Source Repository Metrics

The Centers for Medicare and Medicaid Services is comprised of many GitHub Organizations.

CMS-Enterprise
55 30

CMSgov
230 30

DSACMS
Digital Service at CMS
20 12

Enterprise-CMCS
Center for Medicaid & CHIP Services
88 30

Home **Organizations** Projects

Report for metrics

project type midsize

Repo Stats

Stars	Forks	Issues	Watchers	Pull Requests
5	2	17	3	113

Summary Table

Metric	Latest	Previous	Diff	% Diff
Commits	568	538	30	5.4%
Issues	17	15	2	12%
Open Issues	7	6	1	15%
Closed Issues	10	9	1	11%
Open Pull Requests	11	9	2	20%
Merged Pull Requests	95	87	8	8.8%
Closed Pull Requests	7	7	0	0%
Forks	2	2	0	0%
Stars	5	5	0	0%
Watchers	3	3	0	0%



• CMS Open Source Repository Maturity Model: Repolinter

<https://github.com/todogroup/repolinter>

Repolinter is a tool maintained by the TODOGroup for checking repositories for common open source issues, using pre-defined rulesets. This can be run stand-alone as a script, pre-commit in your IDE, or post-commit or within CI/CD systems!

- ✓ = Pass
- ✗ = Fail
- ⚠ = Warn

Thanks to Chan and Satvic at the Comcast OSPO, we now have repolinter.json configs and rules that map to each Tier of our Open Source Repository Maturity Model!

```
✓ license-file-exists: Found file (LICENSE.md)
✓ security-file-exists: Found file (SECURITY.md)
✓ readme-file-exists: Found file (README.md)
✓ contributing-file-exists: Found file (CONTRIBUTING.md)
✓ maintainers-file-exists: Found file (MAINTAINERS.md)
✗ codeowners-file-exists: Did not find a file matching th
△ governance-file-exists: Did not find a file matching th
✗ community-guidelines-file-exists: Did not find a file m
✗ code-of-conduct-file-exists: Did not find a file matchi
✓ license-contains-license: Contains license (LICENSE.md)
✓ security-contains-security-and-responsible-disclosure-p
✗ readme-contains-about-the-project: Doesn't contain Abou
```

https://github.com/DSACMS/repo-scaffolder/blob/main/tier3/%7B%7Bcookiecutter.project_slug%7D%7D/repolinter.json



• CMS Open Source Repository Maturity Model: Repolinter

[Repolinter] Tier 3 OSS Policy Issues #131

Open IsaacMilarky opened this issue 4 days ago · 0 comments

IsaacMilarky commented 4 days ago

Repolinter Report

This report was generated automatically by the Repolinter.

This Repolinter run generated the following results:

!	Error	✗ Fail	⚠ Warn	✓ Pass	Ignored	Total
0	0	4	0	36	23	63

- Fail
 - ✗ [license-file-exists](#)
 - ✗ [security-file-exists](#)
 - ✗ [readme-file-exists](#)
 - ✗ [contributing-file-exists](#)
- Passed
 - ✓ [license-contains-license](#)
 - ✓ [security-contains-security-and-responsible-disclosure-policy](#)
 - ✓ [readme-contains-about-the-project](#)
 - ✓ [readme-contains-project-mission](#)
 - ✓ [readme-contains-agency-mission](#)

Member ...

Assignees
No one—assign yourself

Labels
Tier 3 Remediation

Projects
None yet

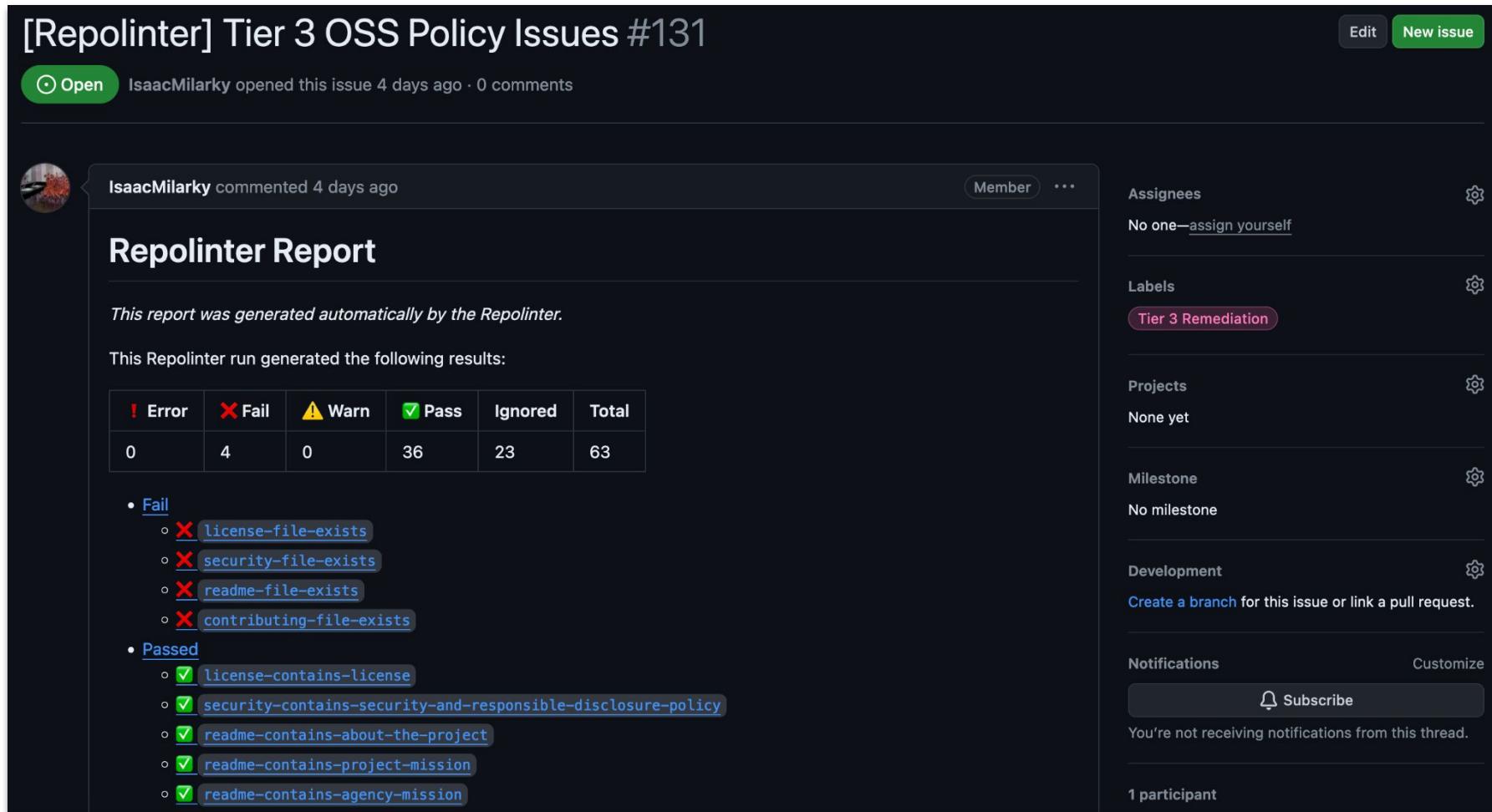
Milestone
No milestone

Development
Create a branch for this issue or link a pull request.

Notifications
Customize
Subscribe

You're not receiving notifications from this thread.

1 participant



Why this is important

Open Source Health and Software Supply Chain Security



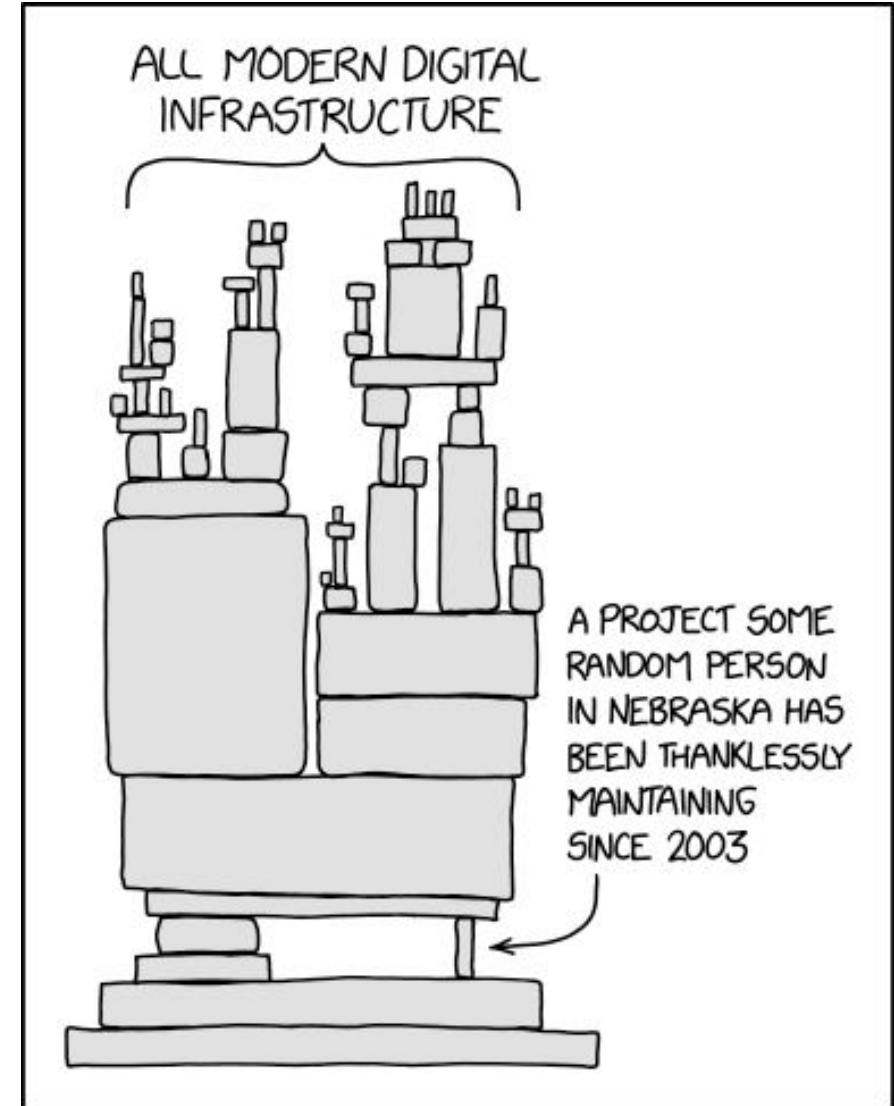
The OSS Supply Chain and XZ

Thanks to XKCD, Open Source software supply chain vulnerabilities like those seen in the recent XZ vulnerability are being referred to as a “Nebraska problems” or, when a component of software that is critical to much of the world is inadequately funded, maintained, or staffed.

Stakeholders must pay attention to the critical projects that they depend on, and support programs that fund, hire, and train maintainers.

CISA writes on their blog that “*every technology manufacturer that profits from open source software must do their part by being responsible consumers of and sustainable contributors to the open source packages they depend on.*”

See: https://github.com/DSACMS/ospo-guide/blob/main/resources/XZ_Supply_chain_attack.md



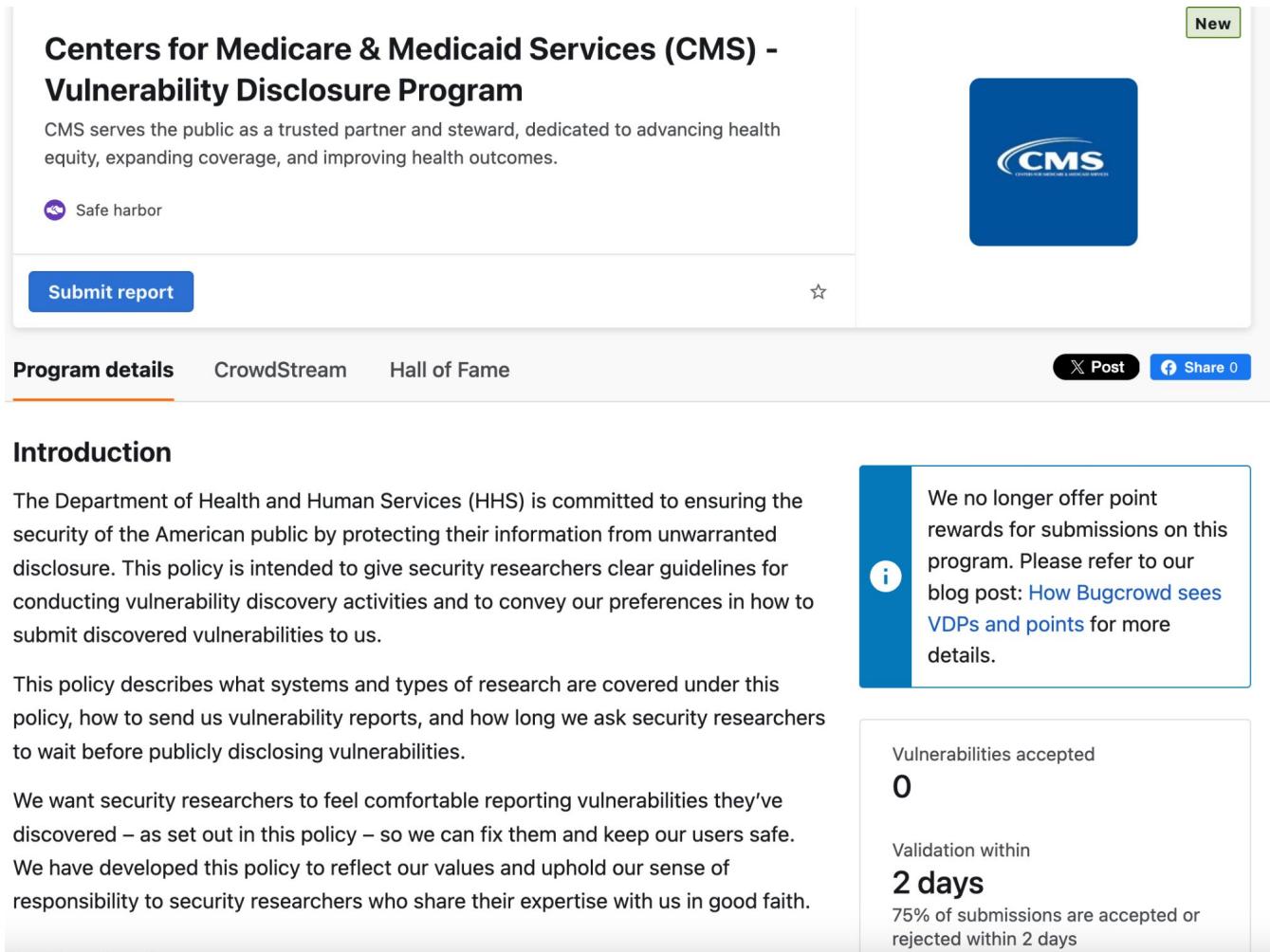
<https://xkcd.com/2347>

How you can help

Vulnerability Disclosure Programs and our Early Career Talent Pipeline



CMS Vulnerability Disclosure Program Partnership with CISA.gov



The screenshot shows the CMS Vulnerability Disclosure Program page on bugcrowd.com. At the top, it says "Centers for Medicare & Medicaid Services (CMS) - Vulnerability Disclosure Program". Below that, a message states: "CMS serves the public as a trusted partner and steward, dedicated to advancing health equity, expanding coverage, and improving health outcomes." A "Safe harbor" icon is present. A "Submit report" button is at the bottom left. The "Program details" tab is selected, showing "CrowdStream" and "Hall of Fame" links. On the right, there's a "New" badge, the CMS logo, and social sharing options ("Post" and "Share 0"). A blue callout box contains the text: "We no longer offer point rewards for submissions on this program. Please refer to our blog post: [How Bugcrowd sees VDPs and points](#) for more details." At the bottom, it shows "Vulnerabilities accepted: 0", "Validation within: 2 days", and "75% of submissions are accepted or rejected within 2 days".

bugcrowd.com/cms-vdp

This is a prerequisite to launching CMS' first ever Bugbounty Program!

- Goal: Launch in Early October 2024
- \$70K+ Bounty Pool now funded!



Early Career Talent Pipeline at the Digital Service

Digital Service at CMS.gov  DIGITAL SERVICE AT CMS	Up to 4 year tour of duty for established professionals in Engineering, Product management, Design, and Data science. <u>GS-13+</u>	https://cms.gov/digital-service-cms
DigitalCorps at GSA.gov  UNITED STATES DIGITAL CORPS	2 year tour of duty for early-career technologists, eligible to convert to full-time, career positions in the competitive service at their agency. <u>GS-9 to 12</u> , + 50% recruitment Incentive .	https://digitalcorps.gsa.gov
Summer Fellowship at CodingItForward.com coding it forward >	Paid 10 week summer internship program for currently enrolled undergrad, grad, bootcamp students or recent graduates.	https://www.codingitforward.com
Internships at CodeInTheSchools.org 	Paid 5-10 week summer experience for Baltimore City residents between the ages of 14 and 21 , with YouthWorks Summer Jobs Program, managed by Mayor's Office of Employment Development.	https://codeintheschools.org



• Thank You HealthDataPalooza!



40 <https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>



Questions or Comments?

<https://go.cms.gov/ospo>

<https://github.com/DSACMS/decks/blob/main/healthdatapalooza2024.pdf>

Open Source Questions?
opensource@cms.hhs.gov

Digital Service Questions?
DigitalService@cms.hhs.gov

Help Answer The Call!

Digital Service at CMS.gov
<https://cms.gov/digital-service>

DigitalCorps Fellowships
<https://digitalcorps.gsa.gov>

CodingItForward Summer Internships
<https://codingitforward.com>



DIGITAL SERVICE AT CMS