

National Firefighter Registry

Requirements Engineering Review

August 2021



ODDM



DIT

Office of Deputy Director for Management

Office of Information Technology and Informatics Services

Agenda

- Identity Management & Privacy Compliance
- Participant Account Considerations
- Account Creation Walkthrough
- Example NFR Participant Profiles
- Project Planning & Timing

Federal System Compliance Requirements

- Protecting participants and their information
 - Basic Identity Theft
 - First Responder Status
 - Personal Information
 - Health Status
 - Employment History
 - Questionnaire Details
- Compliance exists to mitigate risk to participants

FedRAMP System Categorization	Identity Assurance Level (IAL)	Authenticator Assurance Level (AAL)	Federation Assurance Level (FAL)
High	IAL3: In-person, or supervised remote identity proofing	AAL3: Multi-factor required based on hardware-based cryptographic authenticator and approved cryptographic techniques	FAL3: The subscriber (user) must provide proof of possession of a cryptographic key, which is referenced by the assertion. The assertion is signed and encrypted by the identity provider, such that only the relying party can decrypt it
Moderate	IAL2: In-person or remote, potentially involving a "trusted referee"	AAL2: Multi-factor required, using approved cryptographic techniques	FAL2: Assertion is signed and encrypted by the identity provider, such that only the relying party can decrypt it
Low	IAL1: Self-asserted	AAL1: Single-factor or multi-factor	FAL1: Assertion is digitally signed by the identity provider

Protecting Identities and Information

- Protecting data is less burdensome to users than protecting identities and access
 - Data collected from responders can be protected with elaborate measures through hidden background technology
 - One-way data (like survey data) can be collected via secure interface and pushed into a highly secure database
 - Data within a registry that can re-accessed over time by identities (accounts) through authentication (secure login) presents additional risk to be mitigated



Balancing NFR Functionality & Compliance

- When designing systems like NFR, features that improve research and overall value often require enhanced controls to mitigate risk
- Content shared today is intended to drive analysis and input for the best “balance” of functionality and associated controls
- Analysis of benefits vs burden (perceived complexities) should be based on typical firefighter perspective and potential difficulties in communicating security measures



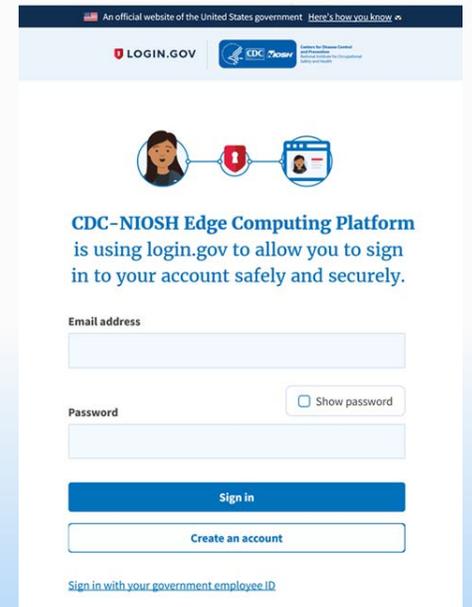
NFR Account Functionality & Design Considerations

- Functionality of the NFR system to offer participant profiles and retrieve sensitive data increase compliance controls
- Long-term functionality should be considered when determining the best approach for participant account management
- To better facilitate updating of data over time, priority should be given to implementing hierarchical, directly accessible profile and survey data that can be easily retrieved, reviewed and updated
- Modular, categorized and directly accessible surveys in an easy-to-use library will provide long-term flexibility to refine and enhance data capture needs



NFR Participation & Account Design Options

1. Full Registration – No Limits on Data Retrieval/Update
 - Robust participant profile includes employment and health history
 - Participant can view and update previously submitted survey data
 - Requires account creation & identity proofing
2. Light Registration – No Sensitive Health Information
 - Profile only includes less-sensitive health identifiers
 - No ability of participant to recall survey response (sensitive health information)
 - Requires account creation
3. No Registration or Profile
 - Functions like a web-based survey
 - No persistent data – each survey is a stand-alone transaction
 - No participant account



An official website of the United States government. Here's how you know.

LOGIN.GOV

CDC NIOSH

CDC-NIOSH Edge Computing Platform is using login.gov to allow you to sign in to your account safely and securely.

Email address

Password Show password

Sign in

Create an account

Sign in with your government employee ID



Overview of Identity Proofing

- Identity proofing is used to establish uniqueness and validity of an individual's identity
- This is accomplished through automated, digital validation of a participant's state issued ID and personal records
- Federal systems rated moderate that enable retrieval of sensitive information require Identity Assurance (IAL2)
- Identity proofing mitigates risk of account compromise, spoofing or hijacking that would expose sensitive data



Examples of Data and Requirement for Identity Proofing

Data	ID Proofing Required
Name	NO
Residential Address	NO
Email Address	NO
Phone Number	NO
Work Status	NO
Current Department	YES
EmployeeID	YES
Year Start/Stop working	YES
Job Title	YES
Cancer Diagnosis	YES
Date of Birth	YES
Country/City/State of Birth	YES
SSN	YES

- **Option 1**
 - would allow participants to retrieve any previously submitted data, including **basic registration (green)** and **sensitive data (red)**
 - requires **Identity proofing** to protect a participant's **sensitive data (red)** because it can be retrieved and is exposed to the public.
- **Option 2**
 - does not require identity proofing because **sensitive data (red)** cannot be retrieved.
 - would allow participants to retrieve only **basic registration data (green)** because retrieval is limited to less sensitive data
- **Option 3**
 - would not allow participants to retrieve any information. Identity proofing is not required because none of the data can be retrieved

NFR Account Creation via Login.gov

When you're ready to create your secure Login.gov account, you'll need to provide a few pieces of information:



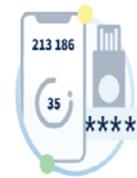
1. Email address

- We recommend a personal email address that you'll always be able to access rather than a work email address.
- If you already have an account with Login.gov with that email address, we'll send you an email to let you know how you can reset your password and access the account.



2. Secure password

- Passwords must be at least 12 characters and should not include commonly used words or phrases.



3. One or more authentication methods such as:

- **More secure**
 - Security Key
 - Authentication application
 - Federal government employee or military identification (PIV/CAC)
- **Less secure**
 - SMS/Text messages
 - Backup codes

Your one account for government

[Create an account](#)

Creating login.gov Account

Enter your email address

Select your email language preference

Login.gov allows you to receive your email communication in English, Spanish or French.

English (default)

Español

Français

Check this box to accept the Login.gov [Rules of Use](#)

Submit

 LOGIN.GOV

Check your email

We sent an email to **XXXXXXXXXXXX** with a link to confirm your email address. Follow the link to continue creating your account.

Didn't receive an email? [Resend](#)

Or, [use a different email address](#)

You can close this window if you're done.

Creating login.gov Account



Confirm your email

Thanks for submitting your email address. Please click the link below or copy and paste the entire link into your browser. This link will expire in 24 hours.

[Confirm email address](https://secure.login.gov/sign_up/email/confirm?_request_id=&confirmation_token=t6sMMkeoVZRpyugzddUQ)

[https://secure.login.gov/sign_up/email/confirm?
_request_id=&confirmation_token=t6sMMkeoVZRpyugzddUQ](https://secure.login.gov/sign_up/email/confirm?_request_id=&confirmation_token=t6sMMkeoVZRpyugzddUQ)

Please do not reply to this message. If you need help, visit www.login.gov/help

✔ You have confirmed your email address

Create a strong password

It must be at least 12 characters long and not be a commonly used password. That's it!

Password

Show password

••••••••••••

Password strength: **So-so**

Common names and surnames are easy to guess

Continue

[Password safety tips](#)



[< Cancel account creation](#)

Selecting a 2-factor Authentication Method

Authentication method setup

Add a second layer of security so only you can sign in to your account.

i Keep this information safe. You will be locked out and have to create a new account if you lose your authentication method.

Select an option to secure your account:

Security key

Use a security key that you have. It's a physical device that you plug in or that is built in to your computer or phone (it often looks like a USB flash drive). Recommended because it is more phishing resistant.

MORE SECURE

Government employee ID

Insert your government or military PIV or CAC card and enter your PIN.

MORE SECURE

Authentication application

Get codes from an app on your phone, computer, or tablet. Recommended because it is harder to intercept than texts or phone calls.

SECURE

Phone

Get security codes by text message (SMS) or phone call. Please do not use web-based (VOIP) phone services.

LESS SECURE

Backup codes

We'll give you 10 codes. You can use backup codes as your only authentication method, but it is the least recommended method since notes can get lost. Keep them in a safe place.

LEAST SECURE

Continue

SMS Text Message is Popular 2nd Factor

Send your security code via text message (SMS) or phone call

We'll send you a security code **each time you sign in**.

Message and data rates may apply. Please do not use web-based (VOIP) phone services.

Phone number

example: (201) 555-0123

How should we send you a code?

You can change this selection the next time you sign in. If you entered a landline, please select "Phone call" below.

Text message (SMS)

Phone call

[Mobile terms of service](#)

Send code



How should we send you a code?

You can change this selection the next time you sign in. If you entered a landline, please select "Phone call" below.

Text message (SMS)

Phone call

[Mobile terms of service](#)

Send code

[Choose another option](#)

Login.gov Identity Proofing

- required if re-accessing sensitive health information

An official website of the United States government [Here's how you know](#) ▾

LOGIN.GOV  Centers for Disease Control and Prevention

Getting started Verify your ID Verify your personal details Verify phone or address Secure your account

Let's get started

Identity verification happens in two parts:

Verify your identity

We'll ask for your personal information. We'll use, keep and share some of your personal information to verify your identity against public records.

Secure your account

After you verify, we'll ask you to encrypt your account. Encryption means your data is protected and only you, the account holder, will be able to access or change your information.

By checking this box, you are letting login.gov ask for, use, keep, and share your personal information. We will only use it to verify your identity. [Learn more](#) ↗

Continue

An official website of the United States government [Here's how you know](#) ▾

LOGIN.GOV  Centers for Disease Control and Prevention

Getting started **Verify your ID** Verify your personal details Verify phone or address Secure your account

How would you like to upload your state-issued ID?

We'll collect information about you by reading your state-issued ID. We do not store images you upload. We only verify your identity.

 **RECOMMENDED**

Take a photo with a mobile phone to upload your ID

Upload pictures directly from your phone camera

Use your phone

Don't have a phone? [Upload from your computer](#)

[Start over](#)

[Cancel](#)

An official website of the United States government [Here's how you know](#) ▾

LOGIN.GOV  Centers for Disease Control and Prevention

Getting started **Verify your ID** Verify your personal details Verify phone or address Secure your account

Take a photo with a phone

Use the camera on your mobile phone and upload images of your ID. We only use the images to verify your identity.

Your mobile phone must have a camera and a web browser

We'll send a text message to your device with a link. Follow that link to your browser to take photos of the front and back of your ID.

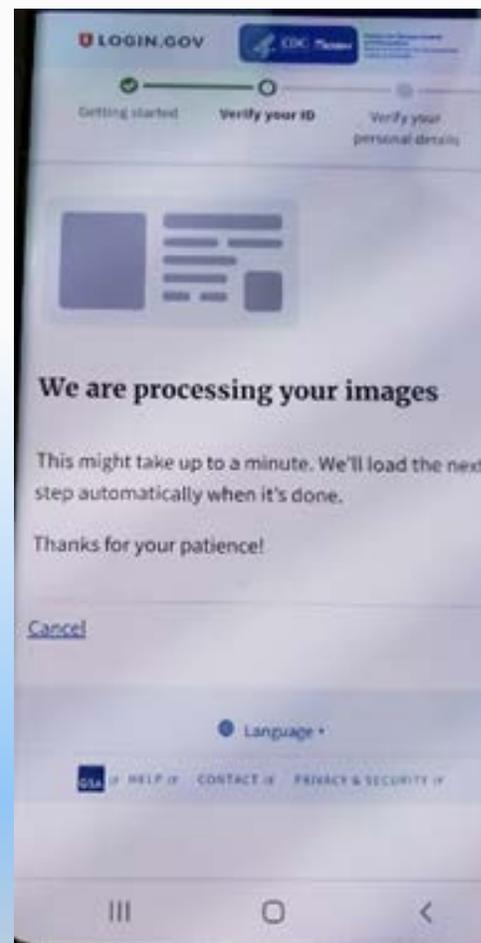
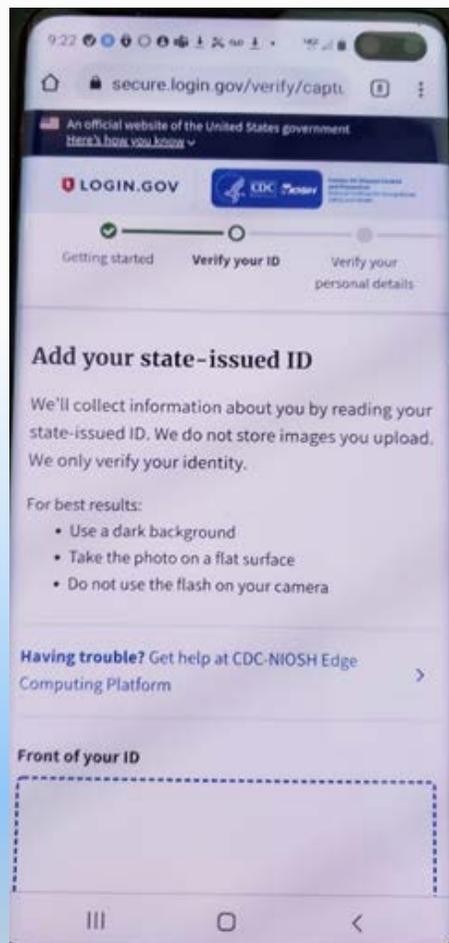
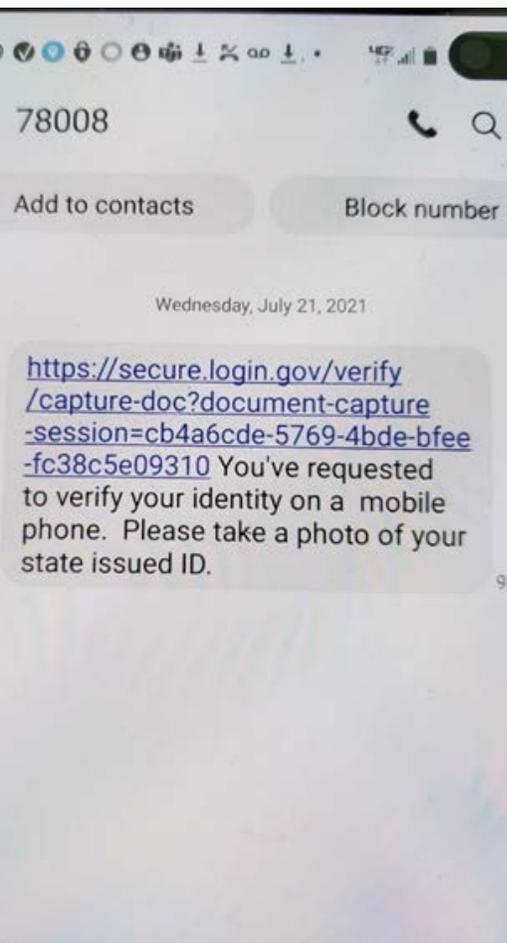
Phone Number

Continue

[Back](#)

Login.gov Identity Proofing

- submit photo of state issued ID via cell phone



Login.gov Identity Proofing

- additional verification steps

An official website of the United States government [Here's how you know](#)

LOGIN.GOV

Getting started Verify your ID **Verify your personal details** Verify phone or address Secure your account

We have verified your state-issued ID

Please enter your Social Security number.

We need your Social Security number to validate your name, date of birth and address. Your Social Security number is encrypted. With your consent, we share this information with the government agency you are trying to access to verify your identity. [Learn more](#)

Social Security Number

Show Social Security Number

Continue

[Start over](#)

[Cancel](#)

An official website of the United States government [Here's how you know](#)

LOGIN.GOV

Getting started Verify your ID **Verify your personal details** Verify phone or address Secure your account

Please verify your information

First Name: **Jane**
Last Name: **Doe**
Date of Birth: **01/01/1960**

Address: **123 Apple Street** [change](#)
City: **Mayberry**
State: **KY**
Zip Code: **12345**

Social Security Number [change](#)

Show Social Security Number

Continue

[Start over](#)

[Cancel](#)

LOGIN.GOV

Getting started Verify your ID Verify your personal details **Verify phone or address** Secure your account

We have verified your personal information

Enter a phone number with your name on the plan

We'll check this number with phone bill records. This is to help verify your identity; we won't use it to call or text you.

This phone number must...

- be a phone plan associated with your name. You do not need to be the primary account holder.
- not be a virtual phone (such as Google Voice or Skype)
- be a U.S. number

If you set up a phone for two-factor authentication, this can be a different number.

Phone Number

+1 555-555-5555

[Verify your address by mail instead.](#) We'll mail you a letter with a code in it.

Continue

secure.login.gov/verify/confirmations

Getting started Verify your ID Verify your personal details Verify phone or address **Secure your account**

You have encrypted your verified data

Save your personal key

You'll need this personal key if you forget your password. If you reset your password and don't have this key, you'll have to verify your identity again.

Your personal key

ABCD-EF1G-HU2-KLM3

Generated on July 23, 2021

Download **Print** **Copy**

Save it. Keep it safe.
Don't lose your personal key or share it with others. We'll ask for it if you reset your password.

Continue

Example NFR Participant Profiles

- Segmented Profile Content for Ease of Use
 - Personal Information
 - Employment Information
 - Health Information
- Orange highlighted content would require identity proofed accounts – or must be moved to survey as non-retrievable attributes

Example NFR Respondent Profiles

Microsoft - Official Home x +

https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

- 1. Personal Info**
- 2. Employment Info
- 3. Health Info

Enrollment Questionnaire

Create Profile: Personal Info

CDC estimates the average reporting burden for this collection of information as 5 minutes per response, including the time for reviewing instructions, searching existing data/information sources, gathering and maintaining the data/information needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestion for reducing the burden to CDC/ATSDR Information Collection Review Office, 1500 Clifton Road NE, MS D-74, Atlanta, Georgia 30333; ATTN: PRA (0920-XXXX).

* Required Fields

First Name* Middle Name Last Name*

Have you been known by any other name (example, maiden name)?

No

Yes What name?

Date of Birth:

Month Day Year

Country of Birth City of Birth State/Territory of Birth

What is your current residential address?

Street

City

State or Territory Code

Zip Code

Orange highlighted information would be moved to the Enrollment Questionnaire with Option 2

Save & Continue: Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home x +

https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

- 1. Personal Info**
- 2. Employment Info
- 3. Health Info

Enrollment Questionnaire

Create Profile: Personal Info

We would like to keep you updated on the progress of the NFR. We have the following email address on file for you:

Would you like to provide another email address? A personal email address is preferred for communications because you should have access to this email even outside of work.

If you would also like to receive updates via text messages, please provide you mobile number below

Save & Continue:
Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home x +

https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

1. Personal Info
- 2. Employment Info**
3. Health Info

Enrollment Questionnaire

Create Profile: Employment Info

What is your current work status in the fire service (select all that apply)?

- Full time, paid
- Part time, paid
- Volunteer (full or part time)
- Seasonal
- Paid on call or paid per call
- Retired In what year did you retire?
- No longer working in the fire service
- Out on long-term disability
- Other Please specify

Save & Continue:
Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home | https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

- 1. Personal Info
- 2. Employment Info**
- 3. Health Info

Enrollment Questionnaire

Create Profile: Employment Info

Where is your current, or most recent fire department, agency, or organization located?

What is your current, or most recent fire department, agency, or organizational affiliation?

If not listed, please fill-in department name:

What jurisdiction do/did you serve at this department/agency/organization?

Employee ID/Departmental Identification for current or most recent position

Approximately what year did you start working at **X department/agency/organization (auto populated)?**

Approximately what year did you stop working at **X department/agency/organization (auto populated)?**

What job titles do/did you hold at this department/agency/organization? Select all that apply:

Structural or Industrial Engineer
As a structural firefighter, which roles most closely apply/applied to you? (select all that apply)

- Firefighter
- Firefighter Medic
- Firefighter EMT
- Firefighter AEMT
- Firefighter Paramedic
- Driver/Engineer/Operator

Wildland Firefighter
As a wildland firefighter, which roles most closely apply/applied to you? (select all that apply)

- Engine crew
- Hand crew
- Line medic
- Base camp support staff
- Smokejumper

This section would be moved to the Enrollment Questionnaire with Option 2

If manually entered, the Jurisdiction pull down will be displayed.

Save & Continue: Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home

https://NationalFireFightersWeb site.com/

Dashboard

Informed Consent

User Profile

- 1. Personal Info
- 2. Employment Info**
- 3. Health Info

Enrollment Questionnaire

Create Profile: Employment Info

This section would be moved to the Enrollment Questionnaire with Option 2

(continued) What job titles do/did you hold at this department/agency/organization? Select all that apply:

- Company Officer (Lt, Cpt, Sgt)
- Wildland Supervisor or Overhead
- Chief
 - Fire Chief
 - Battalion/District Chief
 - Assistant Chief
 - Deputy Chief
 - Division Chief
- Fire Investigator, where this is your primary job assignment
- Instructor, where this is your primary job assignment
- Superintendent/Crew Boss
- EMT/Paramedic, where this is your primary job assignment
- Fire Marshal
- Other

Save & Continue: Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home x +

← → ↻ | https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

- 1. Personal Info
- 2. Employment Info
- 3. Health Info**

Enrollment Questionnaire

Create Profile: Health Info

This section would be moved to the Enrollment Questionnaire with Option 2

Please specify: Have you every been diagnosed with cancer?

No

Yes

If "yes" is selected then the user will be asked about a cancer diagnosis. If "no" is selected the cancer question will not be presented.

What type(s) of cancer were you diagnosed with? Please select where the cancer(s) started (primary site):

- Bladder
- Brain or Central Nervous System
- Breast
- Cervix
- Colon or Rectum
- Esophagus
- Hodgkin's Lymphoma
- Kidney
- Leukemia
- Liver
- Lung
- Mesothelioma
- Multiple Myeloma
- Non-Hodgkin's Lymphoma
- Oral Cavity or Pharynx (e.g. lip, tongue, palate, tonsil, other parts of the mouth)
- Ovary
- Pancreas
- Prostate
- Skin: Melanoma
- Skin: Non-Melanoma (e.g. basil cell carcinoma, squamous cell carcinoma) or Unknown
- Small Intestine
- Stomach
- Testis
- Thyroid
- Uterus/Endometrium
- Unsure
- Other

Save & Continue: Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home x +

https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

1. Personal Info

2. Employment Info

3. Health Info

Enrollment Questionnaire

Create Profile: Health Info

This section would be moved to the Enrollment Questionnaire with Option 2

For each cancer selected, except for Leukemia, the follow questions will be displayed

<Cancer name>:

What was your age when first diagnosed?

In what US state/territory were you living when first diagnosed?

If Leukemia was selected, display the following:

What type of Leukemia were you diagnosed with?

- Acute myeloid (or myelogenous) leukemia (AML)
- Chronic myeloid (or myelogenous) leukemia (CML)
- Acute lymphocytic (or lymphoblastic) leukemia (ALL)
- Chronic lymphocytic leukemia (CLL)
- Other or Unsure

Leukemia:

What was your age when first diagnosed?

In what US state/territory were you living when first diagnosed?

Save & Continue: Create Profile

Example NFR Respondent Profiles

Microsoft - Official Home

https://NationalFireFightersWebsite.com/

Dashboard

Informed Consent

User Profile

1. Personal Info
2. Employment Info
- 3. Health Info**

Enrollment Questionnaire

Create Profile: Health Info

This section would be moved to the Enrollment Questionnaire with Option 2

In the United States, each state has a cancer registry that collects and combines information on all cancer diagnoses from all hospitals in that state. Providing your social security number (SSN) is the only way to guarantee the information you provide in your user profile and questionnaire matches any past or potentially future cancer diagnosis reported to a state. This information is necessary to meet the statutory requirements of the Firefighter Cancer Registry Act of 2018. You can choose to provide this information or not. However, without this information, your data may not be included in the analysis of firefighters' cancer risk. As noted on the informed consent, all your private information will be encrypted, secured, and protected to the fullest extent allowed by law.

SSN:

Confirm SSN:

[Why are we asking this?](#)

[Pop-up box if user clicks "why are we asking this"]

Why are we asking for this?
We need to track firefighters' health over time to truly understand their cancer risks and improve their protections. Your social security number will let us do this by linking your information to state cancer registries. With this information we can see any potential future cancer diagnosis without any further action from you. Each firefighter that shares this information will increase the accuracy of our findings, which could potentially lead to greater protections for all firefighters. Sharing your social security number will ensure your participation has the maximum impact.

We will protect your information to the fullest extent allowed by law. The National Firefighter Registry is covered by an Assurance of Confidentiality, which is the highest level of protection available for identifiable information. Under this formal protection, we are not allowed to share your identifiable information without your written permission. This means we will not share your social security number, contact information, or identifiable questionnaire responses with outside groups like your employer, insurance company, or even for a lawsuit. Your privacy is as important to us as your participation.

Save & Continue:
Create Profile

Begin Survey

Microsoft - Official Home x +

← → ↻ | https://NationalFireFightersWebsite.com/

John Public

Dashboard
Informed Consent
User Profile
Enrollment Questionnaire

1. Demographics
2. Work & Exposure History
3. Lifestyle
4. Health History
5. Submit

CDC estimates the average reporting burden for this collection of information as 30 minutes per response, including the time for reviewing instructions, searching existing data/information sources, gathering and maintaining the data/information needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestion for reducing the burden to CDC/ATSDR Information Collection Review Office, 1500 Clifton Road NE, MS D-74, Atlanta, Georgia 30333; ATTN: PRA (0920-XXXX).

Enrollment Questionnaire

1. First Name* 2. Middle Name 3. Last Name*

4. Employee ID/Departmental Identification for current of most recent position

5. Date of Birth: Month Day Year

6. Country of Birth City of Birth US State/Territory of Birth

7. Current residential address:
Street
City
State or Territory Code Zip Code

8. What sex were you assigned at birth, on your original birth certificate? Male Female [Clear](#)

9. Ethnicity – Are you Hispanic or Latino?
 Yes, I am Hispanic or Latino
 No, I am not Hispanic or Latino

10. Race (select one or more):
 American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or Other Pacific Islander
 White

11. Marital status: Married Living with a partner As an unmarried couple Never married Separated Widowed Other – Please specify: Prefer not to answer [Clear](#)

12. What is your height? feet inches

13. What is your current weight? pounds (if pregnant, please report pre-pregnancy weight)

Fields 1 through 7 are to be auto populated from the user profile

Pregnancy note only displayed if user selected female

[Save & Continue >>](#)

Detailed attributes collected for either of the 3 Account Design Options

Project Planning & Timing

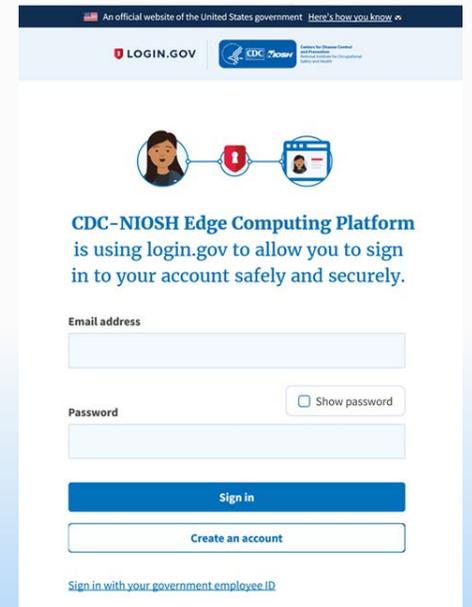
NFR PLANNING SERVICES

- Business Needs Analysis 6/2021
- Requirements Engineering 9/2021
- Solution Engineering 2/2022
- Implementation 7/2022

Estimated timeline

NFR Participation & Account Design Options

1. Full Registration – No Limits on Data Retrieval/Update
 - Robust participant profile includes employment and health history
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2. Light Registration – No Sensitive Health Information
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 - No participant account



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LOGIN.GOV

CDC NIOSH

CDC-NIOSH Edge Computing Platform is using login.gov to allow you to sign in to your account safely and securely.

Email address

Password Show password

Sign in

Create an account

Sign in with your government employee ID

