# BHN Project – Detailed Overview

## What is the BHN Project?

The BHN Project (Birth Healthcare Number) is a secure digital healthcare platform built under the domain mhcare.ca. It aims to solve the problem of fragmented medical records in Canada by assigning every citizen a unique BHN at birth. This BHN serves as a lifelong digital identifier that links to an encrypted cloud-based medical portfolio, containing medical history such as prescriptions, reports, hospital visits, and diagnoses.

## Who Can Access It?

Only verified and authorized users can access a patient’s records. This includes:  
- Healthcare Providers  
  
Access is protected using AWS Cognito-based authentication with role-based permissions.

## How It Works – System Architecture

The project uses multiple AWS services to create a secure, scalable, and compliant platform:  
- AWS Amplify: Hosts the frontend for BHN search  
- AWS S3: Securely stores patient files in per-BHN folders  
- AWS Cognito: Manages login and authentication for verified users  
- Amazon EC2: Hosts a hospital portal (external interface)  
- CloudFront + Route 53: For HTTPS, DNS, and CDN  
- AWS Lambda/Node.js: Planned backend API for secure file access and logs

## Why It Matters

- Removes paperwork and manual processes  
- Allows faster emergency response with instant access  
- Prevents test duplication  
- Centralizes health history from birth to death  
- Ensures privacy with full encryption and HIPAA-ready design

## Development Roadmap

1. Frontend Demo via AWS Amplify ✅  
2. EC2-hosted hospital portal and BHN redirect ✅  
3. S3 buckets for encrypted storage by BHN ✅  
4. Cognito authentication with role support 🔐  
5. Lambda/Node.js backend API 🛠️  
6. Logging, version control, and mobile app (future)