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DATA RELEASE APPLICATION

LIMITED AND IDENTIFIABLE EXTRACT

APPLICATION NAVIGATION

Client Application Revision History.....	1
Data Requestor Details	2
Project Schedule and Purpose	3
Data Matching and Linkage	6
Data Inclusion Criteria.....	8
Additional Documentation.....	10
Client Acknowledgements and Signatures	11



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

CLIENT APPLICATION REVISION HISTORY

The following reflects the history of changes made to this document during the application process prior to project production. Once in production, any further changes to the application may result in additional cost and production delays.

To be completed by CIVHC staff			
Date	New Version Number	Description of Change(s)	CIVHC Change Author
Date	V.01	Initial version drafted with client.	Mason Thaxton, HDC
Date	V.02	Updated Draft from Client	Mason Thaxton, HDC
11/6/2023	V.03	Update after analyst meeting	Mason Thaxton, HDC
Date	V.	Click or tap here to enter text.	Name, Title
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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

DATA REQUESTOR DETAILS

General Project Details

Project Title:	Overbilling Cost Analysis
Application Start Date:	8/31/2023
Requested Project Delivery Date:	10/26/2023
Client Organization:	Bluespine (by Team8 Lab)
Client Organization Address:	488 Madison Ave, Suite 1103 New York, NY 10022
To be completed by CIVHC staff	
CIVHC Contact:	Mason Thaxton
Project Number:	24.08
Condensed Project Title:	Overbilling Cost Analysis

Project Contacts

Project Contact Name:	David Talinovsky
Title:	CEO, Bluespine (by Team8 Lab)
Email:	david@bluespine.io
Phone Number:	Click or tap here to enter text.
Analytic Contact Name:	Gal Frishman
Title:	CTO, Bluespine (by Team8 Lab)
Email:	gal@bluespine.io
Phone Number:	Click or tap here to enter text.
Invoice Contact Name:	David Talinovsky
Title:	CEO, Bluespine (by Team8 Lab)
Email:	david@bluespine.io
Phone Number:	Click or tap here to enter text.

Data Release Fee Signatory

Name:	David Talinovsky
Title:	CEO, Bluespine (by Team8 Lab)
Email:	david@bluespine.io

Data Use Agreement Signatory

Name:	Yossi Mansano
Title:	VP R&D, Bluespine (by Team8 Lab)
Email:	yossi@bluespine.io



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PROJECT SCHEDULE AND PURPOSE

Proposed Project Start Date ¹ :	10/16/2023
Anticipated Project End Date:	1/16/2024
Proposed Publication or Release Date:	4/15/2024

1. Detail the specific research question(s) are you trying to answer or problem(s) are you trying to solve with this data request. Please list and number the individual questions.

Bluespine is a fully automated, AI-powered platform that streamlines overbilling detection and post-payment recovery processes to protect plan sponsors and their employees from adjudication errors, saving employers up to 14% of their annual health care costs.

The project's objective is to uncover medical billing errors or mistakes that are currently undetected using existing methods. The aims of this project are:

1. Better understand these errors frequency of these errors.
2. Can the errors be clustered based on their type, such as by services or providers?
3. What is the economic impact resulting medical billing errors or mistakes that are currently undected?

For instance, if a surgery includes anesthesia and post-operative care, unbundling might mean billing for these elements separately. This practice can lead to overpayment and is considered fraudulent if used to inflate reimbursements.

Bluespine specializes in addressing issues related to medical coding errors, eligibility verification, and administrative discrepancies, including concerns like duplicate payments, unbundling, and negotiate rate errors.

However, Bluespine does not primarily address matters concerning pharmaceutical or clinical mistakes overbilling.

Bluespine offers protection for both Payers (insurers or self-funded employers) and patients. Additionally, Bluespine assists healthcare providers in enhancing their internal processes and self-audit capabilities.

[Attached Report of one of our case study]

2. Describe your methodology or how you will be using data from the Colorado All Payer Claims Database (CO APCD) to answer your research questions.

¹ After all required documents have been signed and the Data Release Review Committee has approved the project, typical production time is 30-60 days for a Limited or Identifiable Extract. Anticipate a longer production period for projects including a Finder File or creation of a Member Match File.



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Data Release Application Limited and Identifiable Extract

The methodology for exploring the Claims data set to gain insights into overbilling is a robust and multidimensional process that harnesses the power of advanced data analytics techniques. Firstly, the large volume of Claims data is processed and managed efficiently using big data tools to extract relevant information. Next, data clustering algorithms are applied to group similar claims together, identifying potential patterns of overbilling behavior.

We are examining data related to the services provided, including their associated codes and modifiers, as well as the date, and location of the services by provider NPI.

Simultaneously, business intelligence (BI) tools are deployed to provide context and visualize the findings, enabling a better understanding of the economic impact of overbilling. The analysis also involves performing rigorous data cleansing and quality assurance to ensure the accuracy and reliability of the results.

To further enhance the methodology, insights from historical data and patterns are cross-examined across various policies and insurance coverage plans using advanced analytical techniques like Large Language Models (LLM). This technique allows for a more comprehensive exploration of policy-specific irregularities, offering a deeper understanding of overbilling occurrences across different insurance types.

The amalgamation of big data tools, data clustering, BI, and LLM-driven policy analysis results in a comprehensive and insightful examination of the Claims data set.

To accomplish the above goals, we leverage the following tools and frameworks:

- Amazon Athena for business intelligence and querying large datasets
- Common Python machine learning libraries (such as Pandas and NumPy)
- The LangChain framework, which harnesses LLM technology for learning insurers' contracts and global policies (e.g., CPT book).

3. Explain how this project will benefit Colorado and its residents.²

The project aims to achieve transparency, providing actionable insights for all stakeholders, including patients, the state, and healthcare providers. **The project's outcomes will be presented in the form of a case study, offering valuable insights to each stakeholder for enhancing their internal processes. Bluespine will disclose the identified violations and provide references, such as specific policy violations, to facilitate improvements**

Cost Savings for Residents: By identifying and addressing overbilling practices, residents can experience reduced healthcare costs. This ensures that they are not financially burdened by excessive or unnecessary charges, making healthcare more affordable and accessible.

² It is a statutory requirement for all non-public releases of CO APCD data to benefit Colorado or its residents. Contributions to generalizable knowledge alone are not sufficient to satisfy this requirement.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

4. Describe how your project will improve health care quality, increase health care value, or improve health outcomes for Colorado residents.²

Improved Quality of Care: Research on overbilling can lead to a focus on providing quality healthcare services rather than maximizing profits. This emphasis on appropriate billing practices ensures that residents receive necessary and beneficial treatments, leading to improved health outcomes.

Enhanced Trust in the Healthcare System: When overbilling is thoroughly researched and addressed, it fosters transparency and accountability in the healthcare system. Residents can trust that healthcare providers are acting ethically and in their best interest, which strengthens the overall confidence in the system.

5. Health equity is the state in which everyone has a fair and just opportunity to attain their highest level of health. Explain how your project addresses health equity.

Effective Resource Allocation for the State: By understanding the extent of overbilling, the state can allocate healthcare resources more effectively. This helps optimize the use of budgetary funds and ensures that healthcare services reach those who need them the most.

Equitable Healthcare Access: By tackling overbilling, the state can ensure that healthcare services are distributed fairly and equitably. This ensures that all residents have access to the care they need, regardless of their financial status.

Policy and Regulatory Improvements: Findings from research can inform policymakers about the areas that need regulatory improvements. It allows the state to implement better healthcare policies and billing regulations to prevent future overbilling occurrences.



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Data Release Application Limited and Identifiable Extract

DATA MATCHING AND LINKAGE

Finder File

A Finder File is a file you submit to CIVHC with information about a pre-selected cohort for matching to CO APCD data. Ask your CIVHC Contact for more information about this process and requirements for Finder File submission.

Will you provide CIVHC with a Finder File as part of this project?

- No
- Yes

Member Match File

A Member Match File is a file that CIVHC creates on your behalf to send to a registry or other outside entity to create a crosswalk connecting data from the CO APCD to the other entity's data.

Does this project require the creation of a Member Match File?

- No
- Yes. Answer the following:

Who will receive the Member Match File?
Please specify here.
What data elements will be required in the Member Match File?
Please specify here.

Control Group

A Control Group is a group of individuals who can be used to compare against the cohort identified in the Finder File or Member Match File.

Will you need to create a Control Group as part of this project?

- No
- Yes. Consult with your CIVHC Contact about completion of an additional Data Element Selection form for your Control Group.

Linkage

Data Linkage is a method of joining data from different sources together to create a new data set.

Will the CO APCD data be linked to another data source?

- No
- Yes. Answer the following:

What is (are) the other data source(s)?
Please specify here.
Who will perform the data linkage?
Please specify here.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

What identifying data elements will be used to perform the data linkage?

Please specify here.

What non-CO APCD data elements will appear in the new linked file?

Please specify here.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

DATA INCLUSION CRITERIA

Make selections in the following sections based on what data you want to have included in this extract. If you will be creating a Control Group, complete this section for your study population and not the Control Group.

Protected Health Information

Indicate which [Protected Health Information](#) data elements you require for your project purpose:

Available for Limited and Identifiable extracts:		
<input type="checkbox"/> Member 5-Digit Zip Code	<input type="checkbox"/> Member Census Tract	<input type="checkbox"/> Member County
<input type="checkbox"/> Member City	<input type="checkbox"/> Member Eligibility Date	<input type="checkbox"/> Employer Tax ID
<input checked="" type="checkbox"/> Member Dates of Service		
Available for Identifiable extracts only (see also Identifiable Data Use Approval):		
<input type="checkbox"/> Member Name	<input type="checkbox"/> Member Date of Birth (if requesting more than year only)	
<input type="checkbox"/> Member Street Address	<input type="checkbox"/> Member Geocoded Address	
Provide detailed justification for the inclusion of all PHI data selected above. ³		
Member Dates of Service: <i>We utilize the service date as one of the key parameters to detect instances of overbilling, as it aids in pinpointing potential issues such as administrative errors (e.g., duplication of the same service) or coding errors (incorrect or illogical unit amounts per date range).</i>		

Line(s) of Business

- Commercial Payers
- Health First Colorado (Colorado’s Medicaid and CHP+ programs)⁴
- Medicare Advantage
- Medicare Fee for Service (FFS)⁵

Year(s) of Data

- 2012 2013 2014 2015 2016 2017
- 2018 2019 2020 2021 2022 2023⁶

Claim Type(s)

- Inpatient Facility Outpatient Facility Professional
- Pharmacy Dental

³ Limited and Identifiable extracts must adhere to the [Minimum Necessary Requirement](#) under the [HIPAA Privacy Rule](#); only that data required to answer the project purpose can be included in the request.

⁴ Medicaid-only data requests must be approved by the Colorado Department of Health Care Policy and Financing.

⁵ Medicare FFS data are not available for all requests and must go through a separate approval process.

⁶ This year’s data is incomplete. Consult with your CIVHC Contact to find out what data is available at the time of your request.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

Financial Detail by Line Item

- Charged Amount Allowed Amount Plan Paid Amount
- Plan Pre-Paid Amount Member Copay Member Deductible
- Member Coinsurance Total Member Liability

Filter Criteria – Services, Providers, Facilities

If you need data for specific services, providers and/or facilities, specify that filter criteria below (ask your CIVHC Contact about including an additional file with this application for large code lists):

ICD Diagnosis Code(s):
Please specify here.
Procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):
Please specify here.
Drug(s) (list pharmacy NDC and/or HCPCS codes):
Please specify here.
Facility Type(s):
Please specify here.
Facilities (list NPIs and/or Pharmacy IDs):
Please specify here.
Facilities within these geographical areas (list county, zip code, Census Tract, etc.):
Please specify here.
Provider Type(s):
Please specify here.
Provider(s) (list NPIs):
Please specify here.
Providers within these geographical areas (list county, zip code, Census Tract, etc.):
Please specify here.
Specific payers (minimum of five):
Please specify here.
Other claim specification:
Please specify here.

Filter Criteria – Members/Patients

If you need data for specific member/patient groups, specify that filter criteria below (ask your CIVHC Contact about including an additional file with this application for large code lists):

Ages:		
<65		
<input type="checkbox"/> At the time of service.	<input checked="" type="checkbox"/> At year end	<input type="checkbox"/> By another anchor date:



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

		Please specify here.
With these ICD Diagnosis Code(s):		
Please specify here.		
Who have had the following procedure(s) (list CPT, HCPCS, DRG, ICD, and/or CDT codes):		
Please specify here.		
Within these geographical areas (list county, zip code, Census Tract , etc., in keeping you're your selected Protected Health Information):		
Please specify here.		

Value-Add Data Elements

Indicate which (if any) of the following value-add options you would like included with this extract:

- [Medicare Severity Diagnosis Related Group](#) Codes (MS-DRGs)
- [3M All Patient Refined Diagnosis Related Group](#) Codes (3M APR DRGs)
- [Medicare Repricer](#)
- Fields from the [American Community Survey](#):

Please specify here.

ADDITIONAL DOCUMENTATION

Data Element Selection Form

The Data Release Application must be accompanied by a completed Data Element Selection Form to be reviewed internally and by the Data Release Review Committee. Ask your CIVHC Contact for more information about completing this form.

- By checking this box, the Client Organization confirms that the Data Element Selection Form has been completed.

Identifiable Data Use Approval

If you are requesting [Identifiable](#) information, approval from an [Institutional Review Board \(IRB\)](#) or a [Privacy Board](#) is required before such data can be released.

- Not applicable; the Client Organization is requesting a Limited Extract.

Approval Type

- IRB approval
- Privacy Board approval

State of Approval

- Approval request not yet submitted.
Anticipated submission date: Click or tap to enter a date.
- Approval request submitted and under review.
Anticipated project approval date: Click or tap to enter a date.
- Approval already received.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

Approval Documentation

- By checking this box, the Client Organization confirms that the IRB or Privacy Board application and approval documents have been provided to CIVHC.

Data Management Plan

An organization requesting CO APCD data must submit an organizational Data Management Plan to CIVHC outlining the organization's data security and data management policies and procedures to safeguard the data. This Data Management Plan must be approved by CIVHC prior to any data release.

- Submitted to CIVHC on 8/7/2023
- Approved by CIVHC on [Click or tap to enter a date.](#)

CLIENT ACKNOWLEDGEMENTS AND SIGNATURES

Change Agent Index

CIVHC can publicly share the Client Organization's name in its [Change Agent Index](#).

- Yes
- No

Report or Product Distribution

If your project results in the production of a report for public distribution in any format (print, electronic, lecture, slides, etc.), including peer-reviewed publication, it must be submitted to CIVHC for review prior to public release. CIVHC will assess compliance with [CMS cell suppression rules](#), risk of inferential identification, CIVHC and CO APCD citations, and consistency with the purpose and methodology described in this Data Release Application. CIVHC will not assess the accuracy of the study results or attempt to recreate results.

This requirement is further defined in the Data Use Agreement. Failure to pursue and obtain CIVHC approval prior to publication will be a violation of the Data Use Agreement and may put the organization's future access to data from the CO APCD at risk.

- By checking this box, the Client Organization acknowledges this requirement.

Data Destruction Period

All data must be destroyed within 30 days of the project end date. If your project end date changes from this application, please reach out to your CIVHC Contact for a project extension request form.

- By checking this box, the Client Organization acknowledges that CIVHC's [Data Destruction Certificate](#)⁷ must be completed and returned to DataCompliance@CIVHC.org by [Click or tap to enter a date based on the Anticipated Project End Date.](#)

Data Users

List any individuals that will be working with the data. The Data Use Agreement must be updated through your CIVHC Contact every time individuals are granted access to the data during the course of the project.

⁷ Available on the [Data Release Application and Documents](#) page of CIVHC's website under *Privacy, Security, and Regulatory Information*.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

Name	Role	Organization
Gal Frishman	CTO	Bluespine
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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

Data Release Application Version Approvals

Checkpoint 1: Preparation for CIVHC's internal Application Review Meeting

The Client Organization has reviewed and confirms that V.02 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	MT	Initials:	YM
Name:	Mason Thaxton	Name:	Yossi Mansano
Title:	Health Data Consultant	Title:	Analyst
Date:	10/16/2023	Date:	10/16/2023

Checkpoint 2: Preparation for presentation to the Data Release Review Committee

The Client Organization has reviewed and confirms that V.03 of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	MT	Initials:	YM
Name:	Mason Thaxton	Name:	Yossi Mansano
Title:	Health Data Consultant	Title:	Analyst
Date:	11/6/2023	Date:	11/6/2023

Checkpoint 3: Final approval to begin project production

The Client Organization has reviewed and confirms that V. of this Data Release Application represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Signature:		Signature:	
Name:	Click or tap here to enter text.	Name:	Click or tap here to enter text.
Title:	Click or tap here to enter text.	Title:	Click or tap here to enter text.
Date:	Click or tap to enter a date.	Date:	Click or tap to enter a date.



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VALUE IN HEALTH CARE

Data Release Application Limited and Identifiable Extract

Data Element Selection Form Version Approvals

Checkpoint 1: Preparation for CIVHC's internal Application Review Meeting

The Client Organization has reviewed and confirms that V.01 of the Data Element Selection Form represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	MT	Initials:	YM
Name:	Mason Thaxton	Name:	Yossi Mansano
Title:	Health Data Consultant	Title:	Analyst
Date:	10/16/2023	Date:	10/16/2023

Checkpoint 2: Preparation for presentation to the Data Release Review Committee

The Client Organization has reviewed and confirms that V.01 of the Data Element Selection Form represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Initials:	MT	Initials:	YM
Name:	Mason Thaxton	Name:	Yossi Mansano
Title:	Health Data Consultant	Title:	Analyst
Date:	11/7/2023	Date:	11/7/2023

Checkpoint 3: Final approval to begin production

The Client Organization has reviewed and confirms that V. of the Data Element Selection Form represents the correct details to meet the project objectives.

CIVHC Sign-Off		Receiving Organization Sign-Off	
Signature:		Signature:	
Name:	Click or tap here to enter text.	Name:	Click or tap here to enter text.
Title:	Click or tap here to enter text.	Title:	Click or tap here to enter text.
Date:	Click or tap to enter a date.	Date:	Click or tap to enter a date.