

Non-Governmental Application for Massachusetts Case Mix and Charge Data [Exhibit A]

I. INSTRUCTIONS

This form is required for all Applicants, except Government Agencies as defined in 957 CMR 5.02, requesting protected health information. All Applicants must also complete the <u>Data Management Plan</u>, attached to this Application. The Application and the Data Management Plan must be signed by an authorized signatory of the Organization. This Application and the Data Management Plan will be used by CHIA to determine whether the request meets the criteria for data release, pursuant to 957 CMR 5.00. Please complete the Application documents fully and accurately. Prior to receiving CHIA Data, the Organization must execute CHIA's <u>Data Use Agreement</u>. Applicants may wish to review that document prior to submitting this Application.

Before completing this Application, please review the data request information on CHIA's website:

- Data Availability
- Fee Schedule
- Data Request Process

After reviewing the information on the website and this Application, please contact CHIA at <u>casemix.data@state.ma.us</u> if you have additional questions about how to complete this form.

All attachments must be uploaded to IRBNet with your Application. All Application documents can be found on the <u>CHIA website</u> in Word and in PDF format or on <u>IRBNet</u> in Word format, If you submit a PDF document, please also include a Word version in order to facilitate edits that may be needed.

Applications will not be reviewed until the Application and all supporting documents are complete and the required application fee is submitted. A Fee Remittance Form with instructions for submitting the application fee is available on the CHIA website and IRBNet. If you are requesting a fee waiver, a copy of the Fee Remittance Form and any supporting documentation must be uploaded to IRBNet.

II. FEE INFORMATION

- 1. Consult the most current Fee Schedule for Case Mix and Charge Data.
- 2. After reviewing the Fee Schedule, if you have any questions about the application or data fees, contact casemix.data@state.ma.us.
- 3. If you believe that you qualify for a fee waiver, complete and submit the <u>Fee Remittance Form</u> and attach it and all required supporting documentation with your application. Refer to the <u>Fee Schedule</u> (effective Feb 1, 2017) for fee waiver criteria.
- 4. Applications will not be reviewed until the application fee is received.
- 5. Data for approved Applications will not be released until the payment for the Data is received.

III. ORGANIZATION AND INVESTIGATOR INFORMATION

Project Title:	Cape Cod Healthcare CHIA Case Mix Data Application 2019
IRBNet Number:	1509560-1
Organization Requesting Data (Recipient):	Cape Cod Healthcare
Organization Website:	www.capecodhealth.org
Authorized Signatory for Organization:	Paul Niedzwiecki
Title:	Vice President Strategy and Government Affairs
E-Mail Address:	pniedzwiecki@capecodhealth.org
Address, City/Town, State, Zip Code:	297 North Street, Bldg 3, 3 rd Floor Hyannis, MA 02601
Data Custodian: (individual responsible for ogranizing, storing, and archiving Data)	Brenda Foley
Title:	Sr. Manager Strategy and Government Affairs
E-Mail Address:	bfoley@capecodhealth.org
Telephone Number:	774-470-5502
Address, City/Town, State, Zip Code:	297 North Street, Bldg 3, 3 rd Floor Hyannis, MA 02601
Primary Investigator: (individual responsible for the research team using the Data)	Christine Shaw
Title:	Director Strategy and Government Affairs
E-Mail Address:	chshaw@capecodhealth.org
Telephone Number:	774-470-5510
Names of Co-Investigators:	Brenda Foley
E-Mail Addresses of Co-Investigators:	bfoley@capecodhealth.org

IV. PROJECT INFORMATION

1. What will be the use of the	CHIA Data requested? [Check all that app	oly]
☐ Epidemiological	☐ Health planning/resource allocation	
☐ Longitudinal Research	☐ Quality of care assessment	Rate setting
☐ Reference tool	☐ Research studies	Severity index tool
☐ Surveillance	☐ Student research	☐ Utilization review of resources
☐ Inclusion in a product	☑ Other (describe in box below)	
Other – inform strategic decision	n making to align point of care services and fac	lities with the community's health care needs

2. Provide an abstract or brief summary of the specific purpose and objectives of your Project. This description should include the research questions and/or hypotheses the project will attempt to address, or describe the intended product or report that will be derived from the requested data and how this product will be used. Include a brief summary of the pertinent literature with citations, if applicable.

Cape Cod Healthcare requires data driven market research to:

- 1) Align services/facilities with community need.

 By continuously aligning services with community health care needs, Cape Cod Healthcare will be able to improve points of access throughout is primary service area (Barnstable County)
- 2) Assess and identify its primary service area patients' outmigration to higher cost, academic hospitals (Boston). Reducing

	EXHIBIT A: CHA NOIP-GOVERNMENT Case With Data Application 2015 VIII.0
	outmigration will lower the cost of care and provide care close to patients and families homes.
•	3. Has an Institutional Review Board (IRB) reviewed your Project? ☐ Yes [If yes, a copy of the approval letter and protocol must be included with the Application package on IRBNet.] ☐ No, this Project is not human subject research and does not require IRB review. 4. Research Methodology: Applicants must provide either the IRB protocol or a written description of the Project methodology (typically 1-2 pages), which should state the Project objectives and/or identify relevant research questions. This document must be included with the Application package on IRBNet and must provide sufficient detail to allow CHIA to understand how the Data will be used to meet objectives or address research questions.
	V. PUBLIC INTEREST
	1. Briefly explain why completing your Project is in the public interest. Use quantitative indicators of public health importance where possible, for example, numbers of deaths or incident cases; age-adjusted, age-specific, or crude rates; or years of potential life lost. Uses that serve the public interest under CHIA regulations include, but are not limited to: health cost and utilization analysis to formulate public policy; studies that promote improvement in population health, health care quality or access; and health planning tied to evaluation or improvement of Massachusetts state government initiatives.
	Cape Cod Healthcare will be informed about market demand throughout its primary service area. Due to the rural nature and aging demographic of Barnstable County, it is vital for Cape Cod Healthcare to make informed, data driven decisions that improve access, quality, and lower the cost of care for its residents.
	VI. DATASETS REQUESTED
	The Massachusetts Case Mix and Charge Data are comprised of Hospital Inpatient Discharge, Emergency Department and Outpatient Hospital Observation Stay Data collected from Massachusetts' acute care hospitals, and satellite emergency facilities. Case Mix and Charge Data are updated each fiscal year (October 1 – September 30) and made available to approved data users. For more information about Case Mix and Charge Data, including a full list of available elements in the datasets please refer to release layouts, data dictionaries and similar documentation included on CHIA's website.
	Data requests are typically fulfilled on a one time basis, however; certain Projects may require years of data not yet available. Applicants who anticipate a need for future years of data may request to be considered for a subscription. Approved subscriptions will receive, upon request, the <u>same data files and data elements</u> included in the initial release annually or as available. Please note that approved subscription request will be subject to the Data Use Agreement, will require payment of fees for additional Data, and subject to the limitation that the Data can be used only in support of the approved Project.
	1. Please indicate below whether this is a one-time request, or if the described Project will require a subscription.
	☐ One-Time Request OR

2. Specify below the dataset(s) and year(s) of data requested for this Project, and your justification for requesting <u>each</u> dataset. Data prior to 2004 is not available.

☐ Hospital Inpatient Discharge Data
□2004 □2005 □2006 □2007 □2008 □2009 □2010 □2011 □2012 □2013 □2014 ⊠2016 ⊠ 2017 ⊠ 2018
Describe how your research objectives require Inpatient Discharge data:
Inpatient discharge data will provide needed attributes about our resident and visitor patient population. Attributes such as
acuity, length of stay, service lines, and diseases will inform Cape Cod Healthcare's efforts to continuously assess and plan
services and operations based on market demand.
☑ Outpatient Hospital Observation Stay Data
□2004 □2005 □2006 □2007 □2008 □2009 □2010 □2011 □2012 □2013 □2014 ⊠2016 ⊠ 2017 ⊠ 2018
Describe how your research objectives require Outpatient Hospital Observation Stay data:
Observation discharge data will provide needed attributes and measures about our resident and visitor patient population.
Attributes such as length of stay, service lines, and diseases will inform Cape Cod Healthcare's efforts to assess and plan services
and operations based on market demand.
⊠ Emergency Department Data
□2004 □2005 □2006 □2007 □2008 □2009 □2010 □2011 □2012 □2013 □2014 ⊠2016 ⊠ 2017 ⊠ 2018
Describe how your research objectives require Emergency Department data:
Cape Cod Healthcare's two acute hospitals, Falmouth Hospital and Cape Cod Hospital have a significant demand for emergency
room services—especially during the summer months on Cape Cod; a resort destination. Emergency Department data will inform
Cape Cod Healthcare about acuity, and diseases—all of which are important factors in determining not only the Emergency
Departments' operations but also the System's four urgent care centers operations as lower-cost alternatives to the Emergency
Departments' operations but also the System's four urgent care centers operations as lower-cost alternatives to the Emergency
Departments' operations but also the System's four urgent care centers operations as lower-cost alternatives to the Emergency

VII. DATA ENHANCEMENTS REQUESTED

State and federal privacy laws limit the release and use of Data to the minimum amount of data needed to accomplish a specific Project objective.

Case Mix and Charge Data are grouped into six "Levels" or Limited Data Sets (LDS) for release, depending on the fiscal year. Data for FY 2004 – 2014 are organized into Levels. Level 6 Data will be released to Government Applicants only. CHIA staff will use the information provided in this section to determine the appropriate Level of Data justified for release.

Data for FY 2015 and later are organized into LDS's. All applicants receive the "Core" LDS, but may also request the data enhancements listed below for inclusion in their analyses. Requests for enhancements will be reviewed by CHIA to determine whether each represents the minimum data necessary to complete the specific Project objective.

For a full list of elements in the release (i.e., the "Core" elements and enhancements), please refer to <u>release layouts</u>, <u>data dictionaries</u> and similar documentation included on CHIA's website.

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1. Specify below which e to determine what Level			-	"Core" LDS. CHIA will	use this information
Geographic Subdivisions			(1944年) (1944年)		
State, five-digit zip code, Town of residence is ava	-				
Select <u>one</u> of the followi	ng options:				
☐ 3-Digit Zip Code (Standard)	☐ 3-Digit Z City/Town *		⊠ 5-Digit Zip Code '	*** S-Digit Zip (Code & City/Town ***
***If requested, provide methodology: Due to varying population with City and Town will aff from Provincetown to Orle community's health needs	demographics ord needed in ans compared	throughout Barnsta formation to specific I to Hyannis—the lo	able County (nine of the cally identify the service wer and outer Cape are	fifteen towns are rural) e needs and placement o more remote and more	, full five digit zip codes of services. Consider
Demographic Data Select <u>one</u> of the followi ☑ Not Requested (Standard)			☐ Race & Ethnicit	V***	
** If requested, provide		for requesting Ra			r methodology:
Date Resolution Select <u>one</u> of the follow	ing options fo	or dates of admiss	ions, discharges, and	significant procedures	
⊠ Year (YYYY)(Standard	1)	☐ Month (YYYYN	/M) ***	☐ Day (YYYYMMDD)***
***If requested, provid	le justificatio	n for requesting N	lonth or Day. Refer t	o specifics in your me	thodology:
	g a	x			
	-				

PR actioner Identifiers (UPN)

Select one of the following options.

☑ Not Requested (Standard)	☐ Hashed ID ***	☐ Board of Registration in Medicine Number(BORIM) ***
***If requested, provide justification methodology:	on for requesting Hashed ID or B	ORIM Number. Refer to specifics in your
	•	
Unique Health Information Number	(UHIN)	
Select <u>one</u> of the following options.		
	☐ UHIN Re	equested * **
*** If requested, provide justification		
ĭ		
11hd24h/-6	1	
Hashed Mother's Social Security Nun Select <u>one</u> of the following options:	nber	
ocidet one of the following options.		
⋈ Not Requested (Standard)		Mother's SSN Requested ***
*** If requested, provide justification	on for requesting Hashed Mothe	er's SSN. Refer to specifics in your methodology:
VIII. DATA LINKAGE		
		a more extensive database for analysis. Data in one database that refer to a single person within
1. Do you intend to link or merge CH ⊠ Yes	IA Data to other data?	
☐ No linkage or merger with	h any other data will occur	
	/pes of data to which CHIA Data ata (e.g. disease registries, death Data (e.g., American Medical Ass	n data)

Other (please describe):

3. If yes, describe the data base(s) to which the CHIA Data will be linked, indicate which CHIA Data elements will be linked and the purpose for each linkage.

CHIA data will be compared with previous years' data to discern patterns and trends over time. Routine analyses will be used to look at market share over a three year historical span.

The following CHIA data elements will be linked to Sg2 methodology that groups data into service lines.

- Clinical Codes
- Diagnosis Codes
- Procedure Codes
- DRGs

Zip codes will link to Sg2 zip code reference file which then links the zip codes in the CHIA data set to specific geographies. Hospital ID will link to the hospital reference file which contains all information on specific organizations, parent companies and affiliates.

4. If yes, for each proposed linkage above, please describe your method or selected algorithm (e.g., deterministic or probabilistic) for linking each dataset. If you intend to develop a unique algorithm, please describe how it will link each dataset.

Deterministic algorithms are used to link CHIA data with the reference tables mentioned above, eg: unique zip codes, and DRG codes to produce the same output. Zip codes in the CHIA data will be mapped to our pre-defined service areas, regions/geographies as mentioned above in order to compare where CCHC patients are coming from compared to other hospitals in MA.

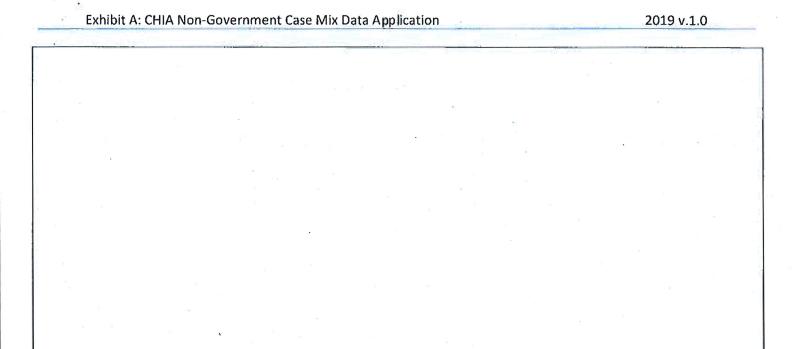
- 5. If yes, attach complete listing of the variables from all sources to be included in the final linked analytic file.
 - Clinical Codes
 - Diagnosis Codes
 - Procedure Codes
 - DRGs
 - Zip codes
 - Hospital ID
- 6. If yes, please identify the specific steps you will take to prevent the identification of individual patients in the linked dataset.

		68 - 58 - 58 - 1				1,5,
No disclosure or publica	tion of data will occur	that exposes indivi	dual identifiable data.			
	760 ₂₀₀					7
IX. PUBLICATION / DI	SSEMINAITON / RE-	RELEASE				
1. Do you anticipate the intend to disseminate web page, seminar, concell size suppression publications will not a display of a cell less the	the results of the st enference, statistical eolicy, as set forth in disclose a cell less th	udy (e.g.; publicat tabulation)? Any the Data Use Agro	tion in professional jou and all publication of eement. Please expla	urnal, poster pre f CHIA Data must in how you will e	sentation, nev comply with nsure that an	wsletter, CHIA's Y
The results will not be p	ublished or made publ	lically available. Re	sults are for internal pla	nning purposes on	ıly.	
	* .					
2. Describe your plan paper, report, website	e, statistical tabulati	on, seminar, or ot	her setting that is not	disseminated to	the public.	, in any
furthermore, reports to small cell suppression g	Cape Cod Healthcare	Leadership and its I				with
					y	
3. What will be the lo (e.g., state level, city/ ensure that individua	town level, zip code	level, etc.)? Will				
At the zip code or DRG graphical in construct (I Barnstable County—Up	Bar Graphs), and will b	e highly summarize	ession guidelines. All and d—including maps, which			

4. Will you be using CHIA Data for consulting purposes?

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Exhibit A: CHIA Non-Government Case Mix Data Application	2019 v.1.0
☐ Yes ☑ No	
If yes, in what format will you be reselling CHIA Data?	
9. If you have answered "yes" to questions 5, 6, 7 or 8, provide the name and a description of services, or tools.	the products, software,
10. If you have answered "yes" to questions 5, 6, 7 or 8, what is the fee you will charge for successor tools?	ch products, software,
	and a second
XI. INVESTIGATOR QUALIFICATIONS	
1. Describe your previous experience using hospital data. This question should be answered and any co-investigators who will be using the Data.	by the primary investigator
The Investigator has over 9 years and the Co-Investigator has over 8 years of health care provider mark and data analyses experience. They have the experience, education, and ability to transform the data information to facilitate Cape Cod Healthcare leadership strategic and operational decision making.	



2. <u>Resumes/CVs</u>: When submitting your Application package on IRBNet, include résumés or curricula vitae of the principal investigator and co-investigators. (These attachments will not be posted on the internet.)

XII. USE OF AGENTS AND/OR CONTRACTORS

By signing this Application, the Agency assumes all responsibility for the use, security and maintenance of the CHIA Data by its agents, including but not limited to contractors. The Agency must have a written agreement with the agent of contractor limiting the use of CHIA Data to the use approved under this Application as well as the privacy and security standards set forth in the Data Use Agreement. CHIA Data may not be shared with any third party without prior written consent from CHIA, or an amendment to this Application. CHIA may audit any entity with access to CHIA Data.

Provide the following information for <u>all</u> agents and contractors who will work with the CHIA Data. [Add agents or contractors as needed.]

AGENT/CONTRACTOR #1 INFORMATION	
Company Name:	Sg2
Company Website:	www.sg2.com
Contact Person:	Stephanie Ting
Title:	Manager Data Operations
E-mail Address:	STing@sg2.com
Address, City/Town, State, Zip Code	5250 Old Orchard Road, Skokie, IL 60077
Telephone Number:	847-779-5620
Term of Contract:	3 years

1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.

Sg2 will develop 5 and 10 year forecasts using the CHIA data for Cape Cod Healthcare's internal reporting. Internal reporting from these forecasts will be summarized by service are, service lines, diseases, and procedure market data.
2. Describe the Organization's oversight and monitoring of the activities and actions of the agent or contractor for this Project, including how the Organization will ensure the security of the CHIA Data to which the agent or contractor has access.
access.
Please refer to Sg2's data management plan; specifically details explaining how Sg2 will ensure the security of CHIA data. Additionally, Sg2 has other Massachusetts's customers and has been approved by CHIA
3. Will the agent or contractor have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database?
⊠ Yes
□No
4. If yes, a separate Data Management Plan <u>must</u> be completed by the agent or contractor.
AGENT/CONTRACTOR #2
INFORMATION
Company Name:
Company Website:
Contact Person: Title:
E-mail Address:
Address, City/Town, Zip Code
Telephone Number:
Term of Contract:
1. Describe the tasks and products assigned to the agent or contractor for this Project and their qualifications for completing the tasks.
And the state of t

Exhibit A: CHIA Non-Government Case Mix Data Application	2019 v.1.0
	30.05
2. Describe the Organization's oversight and monitoring of the activities and actions of the Project, including how the Organization will ensure the security of the CHIA Data to which taccess.	
 3. Will the agent or contractor have access to or store the CHIA Data at a location other the off-site server and/or database? Yes No 4. If yes, a separate Data Management Plan must be completed by the agent or contractor 	
4. If yes, a separate bata management i an interest be completed by the agent of sometimes.	-
[INSERT A NEW SECTION FOR ADDITIONAL AGENTS/CONTRACTORS A	AS NEEDED1
XIII. ATTESTATION	is record
By submitting this Application, the Organization attests that it is aware of its data use, priving imposed by state and federal law and confirms that it is compliant with such use, privacy a Organization further agrees and understands that it is solely responsible for any breaches disclosure or use of CHIA Data including, but not limited to, any breach or unauthorized at third party to which it grants access.	and security standards. The or unauthorized access,
Applicants approved to receive CHIA Data will be provided with Data following the payme the execution of a Data Use Agreement requiring the Organization to adhere to processes prevent unauthorized access, disclosure or use of data.	
By my signature below, I attest: (1) to the accuracy of the information provided herein; the minimum necessary to accomplish the purposes described herein; (3) that the Organ privacy and security requirements described in this Application and supporting document third party with access to the Data meets the data use, privacy and security requirement bind the Organization.	nization will meet the data nts, and will ensure that any

Paul Niedzwiecki

Cape Cod Healthcare Vice President Strategy and Government Affairs

Signature:

Printed Name:

(Authorized Signatory for Organization)

Atta	ch	m	er	its

A completed Application must have the following documents attached to the Application or uploaded separately to IRBNet:

- ☐ 1. IRB approval letter and protocol (if applicable), or research methodology (if protocol is not attached)
- ☑ 2. Data Management Plan (including one for each agent or contractor that will have access to or store the CHIA Data at a location other than the Organization's location, off-site server and/or database)
- ☑ 3. CVs of Investigators (upload to IRBnet)

APPLICATIONS WILL NOT BE REVIEWED UNTIL THEY ARE COMPLETE, INCLUDING ALL ATTACHMENTS.

[INSERT IRB approval letter and protocol, or research methodology]

Cape Cod Healthcare CHIA Case Mix Data Application 2019

IRBNet Number: 1509560-1

Attachment to Exhibit A, Section IV Project Information, Sub-Section 4 Research Methodology

Project Objectives:

Primary objectives using a data-driven approach are:

- Align services with community need
- Reduce Cape Cod Healthcare's primary service area outmigration to higher-cost, Boston Hospitals

Methodology

CHIA data will be securely sent to our partner, Sg2. Sg2 will load the data into its Market Demand Forecast Analytics application. Cape Cod Healthcare Investigator and Co-Investigator will access the summarized (by Service Lines) and organized (by Zip Code into Regions) data from Sg2's Market Demand Forecast Analytics application.

Inpatient, Observation, and Emergency Room data in Sg2 will be organized by Cape Cod Healthcare's custom service lines—service lines that support the community's residents and visitors with high quality and cost effective care on Cape Cod.

The service line approach will inform Cape Cod Healthcare what services it should expand (both access and capacity), maintain, or reduce and, what new services are needed. Access points (regions) will be identified by zip codes summarized into the four regions of Barnstable County, upper Cape, mid Cape, lower Cape, and outer Cape. Regionalizing utilization will provide data driven information to determine if current facilities and sites are adequate or if there are population areas with unmet needs. Importantly, nine of the fifteen Barnstable County towns are rural.

Service lines combined with regions will provide insight into what service lines and demographic are outmigrating to higher cost providers from Cape Cod Healthcare's primary service area, Barnstable County. Identified service needs and placement of services will inform Cape Cod Healthcare's strategic planning.

Fields from the Zip code file. Only fields highlighted in yellow appear in the tool.

- [ZIPCODE] = 5 digit zip code
- [ResZip] = Maps a non-residential zip code to a residential zip code so that proper growth rates can be applied.
- [IsResidential] = Flag that indicates if zip code is residential, commercial or PO box
- [STATE] = State Code
- [COUNTY] = County Code
- [CBSA CODE] = CBSA code
- [STNAME] = State Name
- [CTYNAME] = County Name
- [CBSA NAME] = CBSA Name
- [GEONAME] = Geo
- [YCOORD] = Latitude assigned to Zip Code
- [XCOORD] = Longitude assigned to the Zip Code
- [HRR] = Hospital Referral Region Code
- [STATECODE] = State Abbreviations

Hospital File

- [HospitalName] = Hospital Name
- [InstitutionType] = Competitor Flag (Competitor or Client are the only values)
- [HospMedicareID] = Medicare ID if available
- [ClientHospMedicareIDSuffix] = if provided
- [ChildrensHosp] = indicated whether or not a hospital is a children's hospital.
- [UseInForecast] = flag to indicate whether or not institution should appear in the forecast.
- [HealthSystem] = Name of the health system that the facility belongs to.

Sg2:

Sg2 uses the patient's zip code field to add the county, state, and CBSA descriptions for each zip code based a US postal service crosswalk which Sg2 purchases. Sg2 also use a combination of the patient's zip code, age, gender, primary diagnosis and primary procedure codes in order to apply Sg2's proprietary utilization and growth rates. In either scenario no "data linking" occurs that would in any way make it easier for an end user to identify any one individual from the CHIA dataset.

US Postal Service Zip Code Attributes file – Sg2 uses the patient's 5 digit zip code to add the following fields

Patient County description,

Patient State

Patient CBSA (Core-Based Statistical Area)

*All fields which may have specific patient identifier information are excluded from Sg2's platform.