A Practical Approach to Working with VA-Purchased “Community” Care Data

Erin Beilstein-Wedel, MA
Research Data Analyst, CHOIR COIN, VA Boston
CREEK Data and Measurement Science Hub
Audience

- Investigators and Analysts
- Who have been told to “pull community care data”
- Who want to assess how difficult using community care data may be
- Who want to know what to “put in grant”
  - Data sources
  - Fields to reference
  - Concordance between data sources

The VA-purchased/community care data landscape is often in flux.
All mistakes and omissions are my own.
Agenda

- Overview of community care data
- Data sources
- Deduplication
- PIT
- CCRS
- eCAMS
Overview: What is VA-Purchased Care?

• VA-purchased or “community care” (CC) is care paid for by the VA but delivered by providers outside a VA facility.
  • This care can take place in a multitude of settings
  • Providers could be VA staff at an academic affiliate, DoD providers, IHS/THP providers, or non-VA providers.
  • The Office of Integrated Veteran Care (IVC) oversees VA-purchased care
• VA-provided care
  • Care delivered in VA Healthcare Systems (VAHCS) and other VA facilities

IHS: Indian Health Services
THP: Tribal Health Program
Overview: VA-Purchased Care Process

Consult
- Consult created
- Consult sent to local IVC office

Referral/Authorization
- Eligibility determined
- SEOC selected
- CC provider selected
- Referral created
- Authorization granted
- Appointment is made

Claims
- Appointment(s) occur
- Provider submits claim(s)
  - Institutional
  - Professional
  - Dental
  - Prescription
  - DME
- Claim adjudication

Payment
- Claim authorization sent to FMS
- Payment data sent to Treasury
- Payment sent to provider
- Payment reconciliation data sent to FMS and claims processing system

SEOC: Standardized Episode of Care
DME: Durable Medical Equipment
FMS: Financial Management System
What is Claims Data?

- Form based
  - HCFA or CMS 1500
  - UB92/UB04 or CMS 1450
  - Electronic submission now, but hasn’t always been
- Identifies when services were provided
- Identifies what services were provided
- Identifies who provided services
- Identifies who services were provided to
Claims Data Structure

Claim Header

Claim

Professional

Institutional

Claim Line

Procedure 1

Procedure 2

Procedure 1

Procedure 2
How do Claims Data Sources Differ?

• VA has multiple claims sources
• Considerations when selecting a claims data source
  • Time Range Covered
  • Sources of claims
  • Primary vs Secondary source
  • Ease of use
## Claims Data Sources

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Claim Time Range</th>
<th>Type of Claims</th>
<th>Primary/Secondary Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISTA FEE</td>
<td>1985—current</td>
<td></td>
<td>Primary</td>
</tr>
<tr>
<td>MedSAS VISTA Fee</td>
<td>1985—current</td>
<td>Contains Plexis</td>
<td>Primary</td>
</tr>
<tr>
<td>FBCS\textsuperscript{d}</td>
<td>2014—2019</td>
<td></td>
<td>Primary</td>
</tr>
<tr>
<td>PIT</td>
<td>2000—current</td>
<td>Contains Plexis</td>
<td>Secondary</td>
</tr>
<tr>
<td>CCRS</td>
<td>2019—current</td>
<td>Community Care Network, MISSION only</td>
<td>Primary</td>
</tr>
<tr>
<td>eCAMS</td>
<td>2018—current</td>
<td>Community Care Non-Network Claims, replaced FBCS</td>
<td>Primary</td>
</tr>
<tr>
<td>CDS\textsuperscript{i}</td>
<td>2019—current</td>
<td>All claims</td>
<td>Secondary</td>
</tr>
</tbody>
</table>

\textsuperscript{d}: Depreciated  
\textsuperscript{i}: In development
Should I use PIT?

- PIT is meant to detect fraud, waste, and abuse
  - IVC recommends against using it
  - But it is the only way to access claims from some systems
- Use PIT cautiously until CCRS and eCAMS come onto DART
  - Know what claims are only in PIT
    - Plexis
    - Expedited payments

PIT: Performance Integrity Tool
IVC: Office of Integrated Veterans Care
Data Source Recommendations

- Use CCRS and eCAMS when they come onto the DART
- Use CDS when it comes onto the DART
  - Will replace all other sources

- If you can wait for CCRS/eCAMS and have resources to learn them then do so
  - Otherwise use PIT at your own risk
- If you can wait for CDS then do!
Duplication: Some causes

• Separate claims submitted for same service
  • Professional + Institutional
• Multiple claim submissions
• Slightly different dates between systems
• Claims in multiple systems
  • Fee + PIT
  • FBCS + PIT
  • CCRS + PIT
  • eCAMS + PIT
Some Methods of Deduplication

• Only include paid/accepted/approved and current claims
  • Current flags only don’t work well with CCRS claims

• Between sources
  • Claim id
    • VIReC factbook for PIT and FBCS

• Between and/or within sources
  • Patient + procedure
  • Patient + day
Picking a Deduplication Method

What method of deduplication you choose depends on what you are measuring

- **Utilization?** Probably deduplicate at the patient-day
  - Allows for alignment between VA-provided and VA-purchased data
- **Cost?** Probably need to keep both institutional and professional so you can sum the payments
- **People with X diagnosis:** maybe you don’t want to exclude rejected claims
  - Some claims are rejected not because the care wasn’t delivered or the diagnosis was incorrect, but because the
    - Procedures not included in the SEOC
    - Occurrence of CPTs exceeds what is allowed by a SEOC

SEOC: Standardized Episode of Care. Like Medicare bundled payments, but the payments are not bundled
## Fields to consider across sources pt 1

<table>
<thead>
<tr>
<th>Patient SSN</th>
<th>Patient ICN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FBCS</strong></td>
<td>Fbcs.hcfa.1a fbcs.ub92.box60a</td>
</tr>
<tr>
<td><strong>FEE</strong></td>
<td>Spatient.PatientSSN</td>
</tr>
<tr>
<td><strong>PIT</strong></td>
<td>Sveteran.PITPatient.MemberID</td>
</tr>
<tr>
<td><strong>CCRS</strong></td>
<td>Ccrs.claim_cob.insured_id</td>
</tr>
<tr>
<td><strong>ECAMS</strong></td>
<td>Ecams_replica.ad_claim_header.mbr_sid -&gt; ecams_replica.mbr_dmgrpchc.social_security_nmbbr</td>
</tr>
</tbody>
</table>

*Some claims are scanned, and data imported via optical text recognition*
# Fields to consider across sources pt 2

<table>
<thead>
<tr>
<th>Claim #</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBCS</td>
<td>fbcs.hcfalines.box24afrom</td>
</tr>
<tr>
<td></td>
<td>fbcs.ub92.box6from</td>
</tr>
<tr>
<td>FEE</td>
<td>Fee.FeeInpatInvoice. TreatmentFromDateTime</td>
</tr>
<tr>
<td></td>
<td>Fee.FeeInitialTreatment. InitialTreatmentDateTime</td>
</tr>
<tr>
<td>PIT</td>
<td>PIT.Claim.ClaimID</td>
</tr>
<tr>
<td>CCRS</td>
<td>ccrs.F_PROFESSIONAL_MEDICAL_CLAIM_DETAILS.service_from_date</td>
</tr>
<tr>
<td></td>
<td>ccrs.dim_institutional_claim.statement_from_date</td>
</tr>
<tr>
<td>ECAMS</td>
<td>ecams_replica.ad_claim_header.TCN</td>
</tr>
<tr>
<td></td>
<td>ecams_replica.ad_claim_header.from_service_date</td>
</tr>
</tbody>
</table>
Who are you counting?

- Some claims are only for non-veterans
  - CHAMPVA claims
    - PIT.SourceSystem = ‘EDI’,
  - Can also use data from Patient.Patient to exclude non-Veterans
PIT

• PIT has claims from multiple sources, including ones that researchers don’t currently have direct access to
• Multiple claim sources now flowing into PIT
  • Each primary claims database has its own structure
  • Creating differences between sources within PIT
## Identifying claim source in PIT

<table>
<thead>
<tr>
<th>Data Source</th>
<th>SourceSystem</th>
<th>Batchlogkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISTA FEE</td>
<td>Does not flow into PIT FBCS</td>
<td></td>
</tr>
<tr>
<td>MedSAS VISTA Fee</td>
<td>FBCS</td>
<td>RXVXXX</td>
</tr>
<tr>
<td>FBCS</td>
<td>FBCS</td>
<td>RXVXXX</td>
</tr>
<tr>
<td>CCRS</td>
<td>CCRS</td>
<td>CCRS_XXXX</td>
</tr>
<tr>
<td>eCAMS</td>
<td>CCNNC</td>
<td>CCNNC_XXX</td>
</tr>
<tr>
<td>Plexis</td>
<td>FBCS</td>
<td>VACDB_XXX</td>
</tr>
</tbody>
</table>
Comparing Claims in PIT to Source

- Fee and FBCS already covered by VIReC
- CCRS
  - Not all CCRS resubmissions are in PIT
  - PIT does not always contain the most recent submission
  - Delay between CCRS and PIT
- eCAMS
Why claim status may be missing in PIT

- Sometimes ClaimStatus is NULL in PIT in these cases:
  - Claim XM (SourceSystem= ‘CXM’)
  - EDI (Claims Processing & Eligibility; CHAMPVA claims)
  - FBCS (SourceSystem= ‘FBCS’; using CurrentFlag=‘Y’ will remove most of these)
- ClaimStatus is based on processed claims
  - Some claims are loaded into PIT before processing
    - ClaimXM & EDI
    - May be better to look at PITVAPayment tables
      - EDI
Partition Key Issues

- Sometimes the partition key isn’t the data you want
  - NULL values in partition key
  - You want a different date

<table>
<thead>
<tr>
<th>Schema</th>
<th>Partition Key</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee. FeeInitialTreatment</td>
<td>InitialTreatmentDateTime</td>
<td></td>
</tr>
<tr>
<td>Fee. FeeInpatInvoice</td>
<td>InvoiceReceivedDateTime</td>
<td>Usually want TreatmentFromDateTime</td>
</tr>
<tr>
<td>PIT. PITClaim</td>
<td>ServiceDate</td>
<td>Is often NULL (91.4% of records)</td>
</tr>
<tr>
<td>PIT. PITInstitutionalClaim</td>
<td>ServiceDate</td>
<td>Is always NULL (100% of records)</td>
</tr>
<tr>
<td>PIT. PITProfessionalClaimDetails</td>
<td>ServiceFromDate</td>
<td></td>
</tr>
</tbody>
</table>
“But I want that date!” What to do

• When you want to a field other than the partition key

```sql
select FeeInpatientInvoiceSID
FROM CDWWork.Fee.FeeInpatientInvoice
where InvoiceReceivedDateTime > convert(datetime2(0), '2015-01-01')
and TreatmentFromDateTime > convert(datetime2(0), '2015-01-01')
```

• When partition key is NULL (or truly unknown)
  • Be cautious of your query plan!
Intro to CCRS

- Community Care Reimbursement System (CCRS)
- Claims for providers in the Community Care Network (CCN)
  - MISSION Act
  - Rolling deployment
    - Start of Health Care delivery 6/26/2019
    - Full Health Care delivery: 1/25/2022
- Permissions: CDW_SPatient
CCRS Structure

- Status at the claim line, not claim level
- Contains resubmissions
- “Test” records: claim_ids containing ‘MISSING’
CCRS Tables of Interest

- Claim header: dim_va_claim
- Patient Demographics: claim_cob
- Claim status: decision
- Institutional claim information: dim_institutional_claim
  - F_Institutional_Medical_Claim_Details
- Professional claim information: dim_professional_claim
  - F_Professional_Medical_Claim_details
- Diagnosis information: claim_diagnosis (ICD-10)
- Procedure information: claim_procedure (majority—96.4%—ICD-10 PCS)
  - F_Professional_Medical_Claim_details (CPT/HCPCS, a few records with HIPPS)
  - F_Institutional_Medical_Claim_Details (CPT/HCPCS, 3% of records with HIPPS codes)

HIPPS Codes | CMS
## CCRS Joins

<table>
<thead>
<tr>
<th>FKTable¹</th>
<th>FKField¹</th>
<th>PKTable²</th>
<th>PKField²</th>
</tr>
</thead>
<tbody>
<tr>
<td>claim_cob</td>
<td>claim_key</td>
<td>dim_va_claim</td>
<td>claim_key</td>
</tr>
<tr>
<td>dim_institutional_claim</td>
<td>claim_key</td>
<td>dim_va_claim</td>
<td>claim_key</td>
</tr>
<tr>
<td>F_Institutional_Medical_Clam_Details</td>
<td>claim_key</td>
<td>dim_institutional_claim</td>
<td>claim_key</td>
</tr>
<tr>
<td>dim_professional_claim</td>
<td>claim_key</td>
<td>dim_va_claim</td>
<td>claim_key</td>
</tr>
<tr>
<td>F_Professional_Medical_Clam_details</td>
<td>claim_key</td>
<td>dim_professional_claim</td>
<td>claim_key</td>
</tr>
<tr>
<td>claim_diagnosis</td>
<td>claim_key</td>
<td>dim_va_claim</td>
<td>claim_key</td>
</tr>
<tr>
<td>Decision</td>
<td>Claim_key</td>
<td>F_Professional_Medical_Clam_details</td>
<td>claim_key</td>
</tr>
<tr>
<td>Decision</td>
<td>Claim_key</td>
<td>F_Institutional_Medical_Clam_details</td>
<td>claim_key</td>
</tr>
</tbody>
</table>

¹ Foreign Key
² Primary key
CCRS Structure: handling resubmissions

• Claims tied together based on resubmissions

• Dim_va_claim
  • One row per submission
  • Prior_claim_id and prior_claim_key link to the prior (1) submission

• Ledger table
  • Not all resubmissions are in ledger
  • Contains ‘root’ (initial) claim key: RootClaimKey field

• Max resubmissions by year
  • 2019 up to 32 resubmissions
  • 2020 up to 9 resubmissions
  • 2021 & 2022 up to 10 resubmissions
• There are some claims with non-NULL values for prior_claim_key in the dim_va_claim table that are not in the ledger.
## Claim Statuses in CCRS

<table>
<thead>
<tr>
<th>Decision Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROVED</td>
<td></td>
</tr>
<tr>
<td>BILL_SENT</td>
<td></td>
</tr>
<tr>
<td>DENIED</td>
<td>“If counting paid claims, exclude”</td>
</tr>
<tr>
<td>NO_ACTION</td>
<td>“Lines that weren’t paid as part of the normal dynamic of claims payment methodology but may still be relevant to see the overall picture of what was provided on that claim” Not the same as denied</td>
</tr>
<tr>
<td>PAID</td>
<td>Paid &amp; processed claims</td>
</tr>
<tr>
<td>PENDING_REVIEW</td>
<td>Awaiting processing; no data in payment tables</td>
</tr>
<tr>
<td>REJECTED</td>
<td>Most with no data in payment tables</td>
</tr>
<tr>
<td>VOID</td>
<td>Most with no data in payment tables</td>
</tr>
</tbody>
</table>
Intro to eCAMS

- Electronic Claims Adjudication Management System
- Community Care Non-Network Claims (CCNNC)
  - Claims for emergency care
  - Claims for providers not in a CCN
- Permissions: CDW_SPatient
- ecams_replica
  - Tables starting with Ad_ tables = adjudicated claims
- Contains resubmissions
  - Root claim is usually original_TCN
  - Immediately prior claim is usually parent_TCN
Tables are not explicitly split into institutional and professional

Use values in `ecams_replica.ad_claim_header.Invoice_type_lkpcd` to determine type of claim
select top 50 head.tcn, head.BSNS_STATUS_CID, head.BSNS_STATUS_TYPE_CID, s.STATUS_NAME
FROM [CDWWork].[ecams_replica].ad_claim_header as head
inner join CDWWork.ecams_replica.status as s on head.BSNS_STATUS_CID=s.STATUS_CID
and head.BSNS_STATUS_TYPE_CID=s.STATUS_TYPE_CID
eCAMS Tables of Interest

- Claim header: ad_claim_header
- Patient Demographics: mbr_demographic
- Claim status: status
- Claim line: ad_claim_line
- Diagnosis information:
  - ad_clm_hdr_x_diagnosis
  - ad_clm_x_dgns_x_clm_ln
- Procedure information: ad_clm_hdr_x_procedure (CPT/HCPCS and ICD-10 PCS)
## eCAMS Joins

<table>
<thead>
<tr>
<th>FKTable&lt;sup&gt;1&lt;/sup&gt;</th>
<th>FKField&lt;sup&gt;1&lt;/sup&gt;</th>
<th>PKTable&lt;sup&gt;2&lt;/sup&gt;</th>
<th>PKField&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>ad_claim_header</td>
<td>bsns_status_cid</td>
<td>status</td>
<td>status_cid</td>
</tr>
<tr>
<td>ad_claim_header</td>
<td>bsns_status_type_cid</td>
<td>status</td>
<td>status_type_cid</td>
</tr>
<tr>
<td>ad_claim_line</td>
<td>claim_header_sid</td>
<td>ad_claim_header</td>
<td>claim_header_sid</td>
</tr>
<tr>
<td>ad_clm_hdr_x_diagnosis</td>
<td>claim_header_sid</td>
<td>ad_claim_header</td>
<td>claim_header_sid</td>
</tr>
<tr>
<td>ad_clm_hdr_x_procedure</td>
<td>claim_header_sid</td>
<td>ad_claim_header</td>
<td>claim_header_sid</td>
</tr>
<tr>
<td>ad_claim_header</td>
<td>mbr_sid</td>
<td>mbr_dmgrphc</td>
<td>mbr_sid</td>
</tr>
</tbody>
</table>

<sup>1</sup> Foreign Key  
<sup>2</sup> Primary Key
Summary

- PIT is mostly complete (in terms of claims submitted across systems)
  - IVC recommends *against* using PIT
  - Delay in claims moving from source systems to PIT
  - PIT contains unprocessed claims—Be careful and thoughtful!
  - Duplication of claims is an issue
    - Currentflag='Y' used to take care of most of these, but no longer does because of CCRS

- CCRS and eCAMS are currently being added to the DART
  - Different structures than each other and than PIT

- CDS is in development
  - FY19 onwards
  - Most recent/summarized claims from all systems
  - Initial iteration will be available for operations in December
  - Will be available for researchers in 2023
Resources: Weblinks

VIReC
- Community Care for Veterans (va.gov)

IVC
- OCC FGB Landing Page (sharepoint.com)
- Community Care Home (va.gov)
- Community Care Hub Home - VHA Office of Integrated Veteran Care (va.gov)
- Data locations

Community Care Research Evaluation & Knowledge Center

HERC

BISL Daily Community Care CDW-Raw Updates

Non-VA resources
- Find, Request and Use CMS Data | ResDAC
- CMS claims manual
- CMS costs
Thank you

erin.beilstein-wedel@va.gov

Questions?