Finding Outpatient Visits in PIT

This document presents one logical approach; it is not study specific. Users should assess whether the code in this document fits their particular need. Please consult with the study PI, Office of Community Care, CREEK, and/or VIReC regarding study-specific questions.

Revision History

Author(s)	Date	Description
Erin Beilstein-Wedel	15March2021	Original

Introduction

This document focuses on identifying claims for outpatient visits (excluding claims for emergency rooms, home health, nursing facilities, outpatient surgeries at ambulatory surgery centers, renal dialysis centers, and laboratory services). Appendix A presents code pairs that may be useful in identifying these other types of care.

In PIT, outpatient visits can be found in both the institutional and professional tables. This separation of data is caused by the claims process, which uses two different claim forms depending on the type of provider submitting the claim.

In the professional claims table, place of service (PoS) codes are used to identify whether a service was rendered in an outpatient setting. In the institutional claims tables, type of bill codes (ToB) are used to identify outpatient services received at a facility (e.g. hospital, rural health clinic). The outpatient indicating values of both code types are listed in Table 1.

- *Type of Bill:* Four-digit code that identifies the location (e.g., hospital, clinic) and type of bill (e.g., outpatient, ambulatory surgery center). This field can be found on PIT.PITInstitutionalClaim. A full breakdown of ToB codes can be found here.
- *Place of Service:* Two-digit codes representing the setting care was received in. This field can be found on the PIT.PITProfessionalClaimDetails. A full breakdown of PoS codes can be found here. A list of values found in PIT and associated descriptions can be found in `CDWWork.NDim.PITPlaceOfService.`

To identify outpatient claims in the Institutional tables, the query presented in this document relies on the type of bill variable (values starting with 13x, 14x, 43x, 71x, 72x, 73x, 74x, 75x, 76x, 77x, 83x, 84x, 85x, 86x, 89x). This list of ToB values was gleaned from ResDAC documentation and correspondence with VIReC. Although the Institutional tables in PIT have a PoS field, using it to identify outpatient visits is unreliable because it is not a required field. For Institutional claims with an outpatient ToB, there is high agreement between the ToB and PoS fields (Table 2).

Outpatient claims in the Professional tables can be found using PoS values 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 17, 18, 19, 22, 24, 26, 49, 50, 52, 53, 55, 56, 57, 62, 71, and 72. Additionally, PoS values 10, 27, 28, 29, 30, 35, 36, 37, 38, 39, 40, 43, 44, 45, 46, 47, 48, 59, 63, 64, 99 are unassigned, and the CPTs on the claim

can be compared against BETOS (v1 or v2) categories to classify the claim as outpatient or other. For example, laboratory services are identified with codes T1A-T1H in BETOS v1 and TA-TX in BETOS v2.

Table 1. Outpatient Code Values

Code Type	Inpatient-related Values
Type of Bill	13x, 14x, 43x, 71x, 72x, 73x, 74x, 75x, 76x, 77x, 83x, 84x, 85x, 86x, 89x
Place of Service	2,3,4,5,6,7,8,9,11,12,15,17,18,19,22,24,26,49,50,52,53,55,56,57,62,71,72

TOB values of 86x and 89x are also used to indicate long term care. ToB value 85x can also indicate inpatient care.

Table 2. Breakdown of PoS categories for Institutional Claims with Outpatient ToB

PoS Category	N Claims	% Claims
Home health	15178	0.16%
Inpatient	47471	0.49%
Laboratory	23207	0.24%
Outpatient	9616473	98.90%
Unassigned	10578	0.11%
Unknown	10170	0.10%

Appendix B contains the code used to generate Table 2.

1. PIT Institutional Claims

1.1. The first query gets ToB values that indicate outpatient claims. These ToB values, along with a date range will be used to limit the claims pulled from the Institutional tables.

```
drop table if exists #outpatient_tob
     select *
     into #outpatient_tob
     from CDWWork.NDim.PITBillType
     where pitbilltypecode like '[0-9a-z]%' -- bill type codes that only contain
letter or numbers
```

1.2. This query pulls institutional claims for outpatient care.

```sql
drop table if exists #tmp_dim_inpatTOB
/* Institutional outpatient claims */

declare @startdate    date='2018-10-01'
declare @enddate      date='2019-10-01'

drop table if exists #inst_outpatient
select distinct
claim.PITClaimSID,
claim.[PITInstitutionalClaimSID]
,claim.StatementFromDate
,claim.StatementToDate
,tob.FacilityType
,tob.pitbilltypecode
,tob.pitbilltypefrequency
,tob.BillClassification
,pit.ClaimID
,claim.PITPatientSID
,pos.PITPlaceOfServiceCode
,pos.PITPlaceOfService
into #inst_outpatient
from   cdwwork.pit.PITInstitutionalClaim as claim
-- Getting TOB
left outer join # outpatient_tob as tob on claim.PITBillTypeSID=tob.PITBillTypeSID
left outer join CDWWork.NDim.PITPlaceOfService as pos on
claim.PITPlaceOfServiceSID=pos.PITPlaceOfServiceSID
inner join cdwwork.pit.pitclaim as pit on claim.pitclaimsid=pit.pitclaimsid
where
claim.statementfromdate >= @startdate
and claim.StatementFromDate < @enddate
and claim.[CurrentFlag] = 'Y'
and pit.claimstatus='Accepted'
and pit.currentflag='Y'
-- limiting to claims for outpatient visits
and (substring(pitbilltypecode,1,2) in (13, 14, 43, 71, 73, 74, 75, 76, 77, 83,
84, 85, 86, 89) and
(BillClassification not like '%Ambulatory Surgery Center%' and BillClassification
not like '%laboratory%') and
PITPlaceOfServiceCode <> '23')
```

2. PIT Professional Claims
   To pull outpatient visits from the Professional claims we use PoS values, which are contained in CDWWork.NDim.PITPlaceofService.

Table 3. Values for place of service from NDIM.PITPlaceofService that may be considered inpatient

Place of Service Code	Place of Service Description
2	Telehealth
3	School
4	Homeless Shelter
5	Indian Health Service Free-standing Facility
6	Indian Health Service Provider-based Facility
7	Tribal 638 Free-standing Facility

8	Tribal 638 Provider-based Facility
9	Prison/Correctional Facility
11	Office
15	Mobile Unit
17	Walk-in Retail Health Clinic
18	Place of Employment-Worksite
19	Off Campus-Outpatient Hospital
22	On Campus-Outpatient Hospital
26	Military Treatment Facility
49	Independent Clinic
50	Federally Qualified Health Center
52	Psychiatric Facility-Partial Hospitalization
53	Community Mental Health Center
57	Non-residential Substance Abuse Treatment Facility
62	Comprehensive Outpatient Rehabilitation Facility
71	Public Health Clinic
72	Rural Health Clinic

2.1. The first SQL query selects claims from the PIT.PITProfessionalDetails table with an outpatient PoS that fall within a date range of interest.

```sql
-- declared variables

declare @startdate    date='2018-10-01'
declare @enddate      date='2019-10-01'

drop table if exists #tmp_professionalclaims
-- PITProfessional
select
        p.PITClaimSID
        ,p.ClaimStatus
        ,p.PITpatientSID
        ,picd.[ServiceFromDate]
        ,picd.[ServiceToDate]
        ,picd.ServiceDate
        ,picd.PITProfessionalClaimDetailssid
        ,picd.IsCurrentFlag
        ,picd.[PaidAmount]
        ,picd.[PayFlag]
        ,picd.[ModifierCode]
        ,place.pitplaceofservice
        ,place.pitplaceofservicecode
        -- here we keep Unknown/unassigned PoS in case we want to check the CPTs
on the claim against BETOS classification codes
        ,case when pitplaceofservicecode in
(2,3,4,5,6,7,8,9,11,12,15,17,18,19,22,24,26,49,50,52,53,55,56,57,62,71,72) then
'Outpatient'
            when pitplaceofservicecode is null or pitplaceofservicecode in
(10,27,28,29,30,35,36,37,38,39,40,43,44,45,46,47,48,59,63,64,99,'') then
'Unknown'
            end as setting_type

into #tmp_professionalclaims
from    CDWWORK.PIT.PITProfessionalClaimDetails  as picd
left outer join CDWWORK.PIT.PITProfessionalClaim as ppc on
picd.pitclaimsid=ppc.pitclaimsid
left outer join CDWWORK.PIT.PITClaim      as p   on picd.PITClaimSID=p.PITClaimSID

left outer join CDWWork.NDim.PITPlaceOfService  as place on
picd.pitplaceofservicesid=place.pitplaceofservicesid

        where
        p.CurrentFlag='Y'
        and p.ClaimStatus='accepted'
        and picd.IsCurrentFlag='Y'
        and picd.PayFlag='Y'
        -- Dates of interest
        and picd.ServiceFromDate >= @startdate
        and    picd.ServiceFromDate < @enddate
        and ISNULL(pitplaceofservicecode,2) in
(2,3,4,5,6,7,8,9,11,12,15,17,18,19,22,24,26,49,50,52,53,55,56,57,62,71,72,10,27,2
8,29,30,35,36,37,38,39,40,43,44,45,46,47,48,59,63,64,99,''    )
```

2.2. If you know you are only interested in claims with an explicit outpatient PoS, then delete records with 'Unknown' here.

```sql
-- Keep only Professional claims with Inpatient or Unknown PoS

delete from #tmp_professionalclaims where setting_type = 'Unknown'
```

3. Combining Institutional and Professional Claims
   3.1. Identify Professional claims that overlap with Institutional claims.
        Using MemberID (SSN) from the SVeteran.PITPatient table, we can identify which Professional claims fall within the date range on the Institutional outpatient claims.

```sql
-- combining institutional claims with professional claims via MemberID where
servicefromdate falls between statementfromdate and statemenetodate
drop table if exists #Combined_inpatient
;with prof as(
select p.*, pat.MemberID
        from #tmp_professionalclaims as p
        inner join CDWWork.SVeteran.PITPatient as pat on
        p.PITPatientSID=pat.PITPatientSID
)
-- professional claims that overlap with institutional
select distinct
pat.MemberID
, pat.PatientICN
, i.PITClaimSID as institutional_pitclaimsid
, p.PITClaimSID as professional_pitclaimSID
, i.FacilityType
, i.PITBillTypeCode
, i.StatementFromDate
, i.StatementToDate
, i.AdmissionDate
, p.ServiceFromDate
, p.ServiceToDate
, p.PITPlaceOfServiceCode
, p.setting_type
into #Combined_inpatient
from #inst_outpatient as i
inner join CDWWork.SVeteran.PITPatient as pat on
i.PITPatientSID=pat.PITPatientSID
left outer join prof as p on pat.MemberID=p.MemberID and p.servicefromdate >=
i.StatementFromDate and
              p.servicefromdate <= i.StatementToDate
```

   3.2. Identify Professional claims that do not overlap with any institutional claims.

```
-- Professional claims that do not overlap in date with Institutional claims

create clustered columnstore index cci_claimid on #tmp_professionalclaims

drop table if exists #professional_only_outpatient
select
p.*, pat.MemberID
into #professional_only_outpatient
from #tmp_professionalclaims as p
inner join CDWWork.SVeteran.PITPatient as pat on
p.PITPatientSID=pat.PITPatientSID
left outer join #Combined_inpatient as has_match on
p.PITClaimSID=has_match.professional_pitclaimSID
where has_match.professional_pitclaimSID is null
```

3.3. Counts of outpatient claim records from the Institutional and Professional tables.

```
--1,641,938 institutional outpatient claims
Select
        count(distinct institutional_pitclaimsid) as n_institutional
from #Combined_inpatient

-- 1,014,989 institutional claims that have an overlapping professional
outpatient claim
select
        count(distinct institutional_pitclaimsid) as n_institutional_w_professional
from #Combined_inpatient
where professional_pitclaimSID is not null

-- 10,839,957 professional claism match to an institutional
select
        count(distinct pitclaimSID) as n_only_prof
from #professional_only_outpatient
```


Appendix A

A list of ToB and PoS code sets for other potential types of inpatient stays is presented below. They are a place to start and have not been tested; please contact VIReC and/or a program office and use your best judgement before wholesale applying them.

Type of Care	Type of Bill codes	Place of Service code
Emergency Room	PITBillTypeCode ,FacilityType ,BillClassification ,ClassificationType ,PITBillTypeFrequency from cdwwork.NDim.PITBillType where len(pitbilltypecode) = 3 and PITBillTypeCode like '1[3]%' ResDAC recommends using revenue codes VIReC has a list of ER related CPT codes	20,23
Home Health	select distinct PITBillTypeCode ,FacilityType	12

	,BillClassification ,ClassificationType ,PITBillTypeFrequency from cdwwork.NDim.PITBillType where len(pitbilltypecode) = 3 and (PITBillTypeCode like '3[12345678]%')	
Laboratory Services	select distinct PITBillTypeCode ,FacilityType ,BillClassification ,ClassificationType ,PITBillTypeFrequency from cdwwork.NDim.PITBillType where len(pitbilltypecode) = 3 and (PITBillTypeCode like '14[a-z]%' or BillClassification like '%laboratory%')	81
Ambulatory Surgical Center	select distinct PITBillTypeCode ,FacilityType ,BillClassification ,ClassificationType ,PITBillTypeFrequency from cdwwork.NDim.PITBillType where len(pitbilltypecode) = 3 and PITBillTypeCode like '83%'	24
Renal Dialysis	select distinct PITBillTypeCode ,FacilityType ,BillClassification ,ClassificationType ,PITBillTypeFrequency from cdwwork.NDim.PITBillType where len(pitbilltypecode) = 3 and PITBillTypeCode like '72%'	65

Appendix B

```
/***************************************************************************//*
INSTITUTIONAL CLAIMS FOR FY18
*//***************************************************************************/

declare @startdate    date='2018-10-01'
declare @enddate      date='2019-10-01'


drop table if exists #instclaim
select distinct
claim.PITClaimSID
,claim.[PITInstitutionalClaimSID]
,claim.StatementFromDate
,claim.StatementToDate
,claim.DRGNumber
,tob.FacilityType
,tob.pitbilltypecode
,tob.pitbilltypefrequency
```

```sql
    ,tob.BillClassification
    ,pit.ClaimID, claim.PITPatientSID,
    ,pos.PITPlaceOfServiceCode, pos.PITPlaceOfService,
    ,case when pos.pitplaceofservicecode in
(2,3,4,5,6,7,8,9,11,12,15,17,18,19,22,24,26,49,50,52,53,55,56,57,62,71,72) then
'Outpatient'
                when pos.pitplaceofservicecode is null or pitplaceofservicecode in
        (10,27,28,29,30,35,36,37,38,39,40,43,44,45,46,47,48,59,63,64,99,'') then
        'Unassigned'
                when pos.PITPlaceOfServiceCode in (20,23) then 'Emergency Room'
                when pos.PITPlaceOfServiceCode in (21,31,32,33,34,51,54,55,56,61) then
        'Service During Facility Stay'
                when pos.PITPlaceOfServiceCode  in (12,13,14,16) then 'Home health'
                when pos.PITPlaceOfServiceCode = 81 then 'Laboratory'
            else 'Unknown'
            end as PoS_setting_type
into #instclaim
from  cdwwork.pit.PITInstitutionalClaim as claim
-- Getting TOB
left outer join CDWWork.NDim.PITBillType as tob on
claim.PITBillTypeSID=tob.PITBillTypeSID
left outer join CDWWork.NDim.PITPlaceOfService as pos on
claim.PITPlaceOfServiceSID=pos.PITPlaceOfServiceSID
inner join cdwwork.pit.pitclaim as pit on claim.pitclaimsid=pit.pitclaimsid
where
claim.statementfromdate >= @startdate
and claim.StatementFromDate < @enddate
and claim.CurrentFlag = 'Y'
and pit.claimstatus='Accepted'
and pit.currentflag='Y'


/*************************************************************************//*
Table 2. EXAMINING ALIGNMENT BETWEEN TOB VALUES AND PLACE OF SERVICE CODES ON
INSTITUTIONAL CLAIMS
*//************************************************************************/
select BillClassification, substring(pitbilltypecode,1,2) as fac_type, PoS_setting_type,
PITPlaceOfServiceCode, sourceentity, sourcesystem, count(pitclaimsid) as n
from #instclaim
where substring(pitbilltypecode,1,2) in (13, 14, 43, 71, 73, 74, 75, 76, 77, 83, 84, 85,
86, 89) and
        (BillClassification not like '%Ambulatory Surgery Center%' and BillClassification
not like '%laboratory%') and
        PITPlaceOfServiceCode <> 23
group by BillClassification, substring(pitbilltypecode,1,2) , PoS_setting_type,
PITPlaceOfServiceCode,sourceentity, sourcesystem
order by substring(pitbilltypecode,1,2) ,BillClassification, PoS_setting_type
```