

Understanding the Medicare LDS Denominator File for CMS Bundled Payments for Care Improvement (BPCI) Initiative

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BPCI Data Webinars

Date	Webinar Content	Presented By
February 13, 2012	Technical Aspects of Data Delivery and File Processing	Buccaneer
February 15, 2012	Understanding the Limited Data Set Denominator File	ResDAC
February 16, 2012	Understanding the Limited Data Set Utilization Files	ResDAC
February 17, 2012	Payment Variables Useful for Costing Bundled Payment Initiative Services	ResDAC

- All webinars will take place from 12:30p-1:45p EST
- Slides and webcast posted at <http://innovations.cms.gov>

Co-presenters and/or Co-developers of Presentation

- Research Data Assistance Center (ResDAC)
 - Barbara Frank, M.S., M.P.H.
 - Faith Asper, MHS
 - Beth Virnig – Ph.D, M.P.H.
- Centers for Medicare and Medicaid Services (CMS)
 - Pamela Pelizzari, M.P.H.
 - Jay Desai, MBA

Comment:

You might want to have the
“Research Data Distribution Center
LDS Denominator Record
Data Dictionary”

available as we go through the presentation.

Downloadable at

[http://innovations.cms.gov/Files/
x/Bundled-Payments-for-Care-Improvement-
Denominator-File.pdf](http://innovations.cms.gov/Files/x/Bundled-Payments-for-Care-Improvement-Denominator-File.pdf)

Educational Objective

- Describe the information contained in the BPCI Limited Data Set (LDS) Denominator File and how to use it in defining BPCI populations

In the beginning...

- There was a single Denominator File
 - created for researchers
 - based on the calendar year (CY)
 - thin (80 columns)
 - contained research identifiable information
 - ResDAC suggested that everyone get a copy of it for every study

Now...

- There have been additional 'denominator files' created, particularly in the past 5 years
 - Part D Denominator File
 - Beneficiary Summary File
 - Master Beneficiary File
 - LDS Denominator File – What is different compared with other denominator files?
 - Smallest geographic unit is county
 - Some omitted information regarding death

BPCI LDS Denominator File

- Annual file containing all beneficiaries entitled or enrolled for even one day in the calendar year (CY)
 - The file is NOT limited to users of Medicare services
- Eligibility information is determined by Social Security Administration (SSA) and Railroad Retirement Board (RRB) based on information at SSA & RRB
- Other information in Denominator File comes from the states, from claims, and from Medicare Advantage Plans
- Standard Denominator File and LDS Denominator File for CY 20XX are based on information known to CMS in March 20XX + 1.
- BPI LDS Denominator File is the same as regular LDS Denominator File, except the BPI LDS Denominator Files will be limited to specific HRCs (Hospital Referral Clusters)

Content of BPCI LDS Denominator File

Capitalized terms are the variable labels that appear in the LDS Denominator File Data Dictionary

- Variable used to identify beneficiaries and for linking records (DESY SORT KEY)
- Variables used for demographic information (AGE, SEX, BENEFICIARY RACE CODE, STATE CODE, COUNTY CODE), as well as mortality information (VALID DATE OF DEATH SWITCH and BENEFICIARY ENCRYPTED FILE (BEF) DATE OF DEATH)
- Variables used to identify and track entitlement and eligibility for receiving particular Medicare services

Record Linking Information

- DESY SORT KEY variable
 - Is unique
 - No two people share a DESY SORT KEY
- Use to link beneficiaries across files.

Demographic Information in BPCI LDS Denominator File

- Age
- Sex
- Race/ethnicity
- State and county of residence
- Death and date of death

Demographic Information in BPCI LDS Utilization (Claims) Files

- Variables about age, sex, race/ethnicity, and state and county of residence are present in the LDS and BPCI LDS utilization files for 2008 and 2009.
- However, all but sex variable have null entries for an unknown number of records in one or more of these years.
- Therefore, must use BPCI LDS Denominator file to have accurate demographic information and to calculate age groups
- BPCI LDS Denominator record can be linked to appropriate utilization file record using the DESY SORT KEY

Age in BPCI LDS Denominator File

- Age at the end of prior calendar year
- If Age > 98, age = 98

Sex

- SEX variable is coded 1=male 2=female
- There are no missing values for this field
- Persons with unknown information have it filled according to the rule:
 - if age is less than 65 and sex unknown, then sex=male
 - if age is greater than or equal to 65 and sex is missing then sex=female

Possible Mistaken Sex Assignment -- Rare

<u>Procedure</u>	<u>% male</u>	<u>% female</u>
Prostate cancer	100	0
Ovarian or cervical cancer	0.02	99.98
Breast reconstruction surgery	0	100

Race/ethnicity - BENEFICIARY RACE CODE

- BENEFICIARY RACE CODE is a one column variable; many other federal data systems use 2 columns; one for ethnicity and one for race
- Initially, race was coded as:
 - white, black, other, unknown
- Effective 1994, race codes were expanded to:
 - White, Black, Asian, Hispanic, North American Native, Other, Unknown
- The Hispanic race/ethnicity code has an estimated sensitivity of about 40%; approximately 60% for Asian
- Continuous efforts at CMS to improve accuracy of race information

Residency – STATE CODE and COUNTY CODE

- State and county of residence included; zip code is not
- These are the mailing address for official correspondence from CMS
- Some persons have their mail sent to another person (e.g., son, daughter, guardian)
- Residency in the BPCI LDS Denominator File for CY 20XX is based on the information available in March 20XX + 1.

Residency - Caveats

- Residency in BPCI LDS utilization files is based on residence known to CMS at the time a claim is processed, so it may be different than in the BPCI LDS Denominator File
- State and County codes are SSA (Social Security Administration) codes, NOT FIPS (Federal Information Processing Standards) codes.
 - If combining information using the two systems, need a cross-walk file
 - Cross-walk file is available as a Public Use File at https://www.cms.gov/AcuteInpatientPPS/downloads/FY_12_FR_County_to_CBSA_Xwalk.zip.

Mortality

- Two related variables
 - VALID DATE OF DEATH SWITCH
 - BENEFICIARY ENCRYPTED FILE (BEF) DATE OF DEATH
- VALID DATE OF DEATH SWITCH
 - If value = V, the exact date of death has been confirmed, primarily by Social Security Administration (SSA)
 - If value = blank, the person may be dead, but death date has not been validated
- BENEFICIARY ENCRYPTED FILE (BEF) DATE OF DEATH variable
 - Has an 8 digit date if the person is dead and the date of death was validated
 - Is blank if
 - beneficiary is alive, OR
 - the VALID DATE OF DEATH SWITCH is blank
- Therefore, in BPCI LDS Denominator file, there will be beneficiaries who are dead, BUT you cannot know who they are because the exact date of death has not been validated.
- The other way of saying it is, there are beneficiaries who you think are alive, but they are dead.
- However, 96% of death dates are validated

Dealing with the 4% Non-validated Deaths

- Potential size of the problem
 - Annual all-cause mortality among all Medicare beneficiaries about 5%
 - Therefore, $0.05 \times 0.04 = 0.002$, or 0.2% of total beneficiaries might have incorrect information in a year.
 - But post-acute care patients will have higher mortality rates
 - Post-Acute Care Episodes Expanded Analytic File Data Chart Book, June 2011 prepared by RTI for ASPE, Chapter 5. The highest all-cause rates were for Long Term Care Hospital anchored episodes: 17.8% for 30-day variable-length episodes and 13.5% for fixed-length episodes.

Mortality - Recap

- Date of death is present only for those people with a validated date of death (VALID DATE OF DEATH SWITCH = "V").

Entitlement and Related Variables

- ORIGINAL REASON FOR ENTITLEMENT code
 - 0 = Old age and survivors insurance (OASI)
 - 1 = Disability
 - 2 = ESRD
 - 3 = Disability and ESRD
- CURRENT REASON FOR ENTITLEMENT code
 - Same categories as above
- MEDICARE STATUS CODE

MEDICARE STATUS CODE variable

- MEDICARE STATUS CODE variable combines entitlement and ESRD information
 - 10 = Aged without ESRD
 - 11 = Aged with ESRD
 - 20 = Disabled without ESRD
 - 21 = Disabled with ESRD
 - 31 = ESRD only
- END STAGE RENAL DISEASE INDICATOR (ESRD) code – Yes/no variable.

Entitlement Designation may be Important because the Beneficiaries are not the same by MEDICARE STATUS CODE variable

	Elderly, non-ESRD	Disabled, non-ESRD	ESRD
% male	41.6%	55.6%	54.5%
Annual mortality	6.1%	2.6%	8.1%
Mean age	74.6 years	49 years	46 years
Top DRG for inpatient care	Heart failure	Psychoses	Vascular procedures (e.g., for dialysis)

Inclusion and Exclusion Decisions using the BPCI LDS Denominator File

- Inclusion
 - Part A entitled and Part B enrolled - Required by BPI
- Exclusion
 - Not in Medicare Advantage - Required by BPI
 - No end-stage renal disease (ESRD) – Required by BPI
 - Mentioned that Railroad Retirement Board (RRB) entitled and United Mine Workers union beneficiaries be excluded. The way the BPCI LDS files have been created does not allow this. Only a small number of individuals in any Health Referral Cluster (HRC).
- In or out?
 - Mortality
- For the first inclusion criterion and the first exclusion criterion, use monthly indicators. – What do we mean?

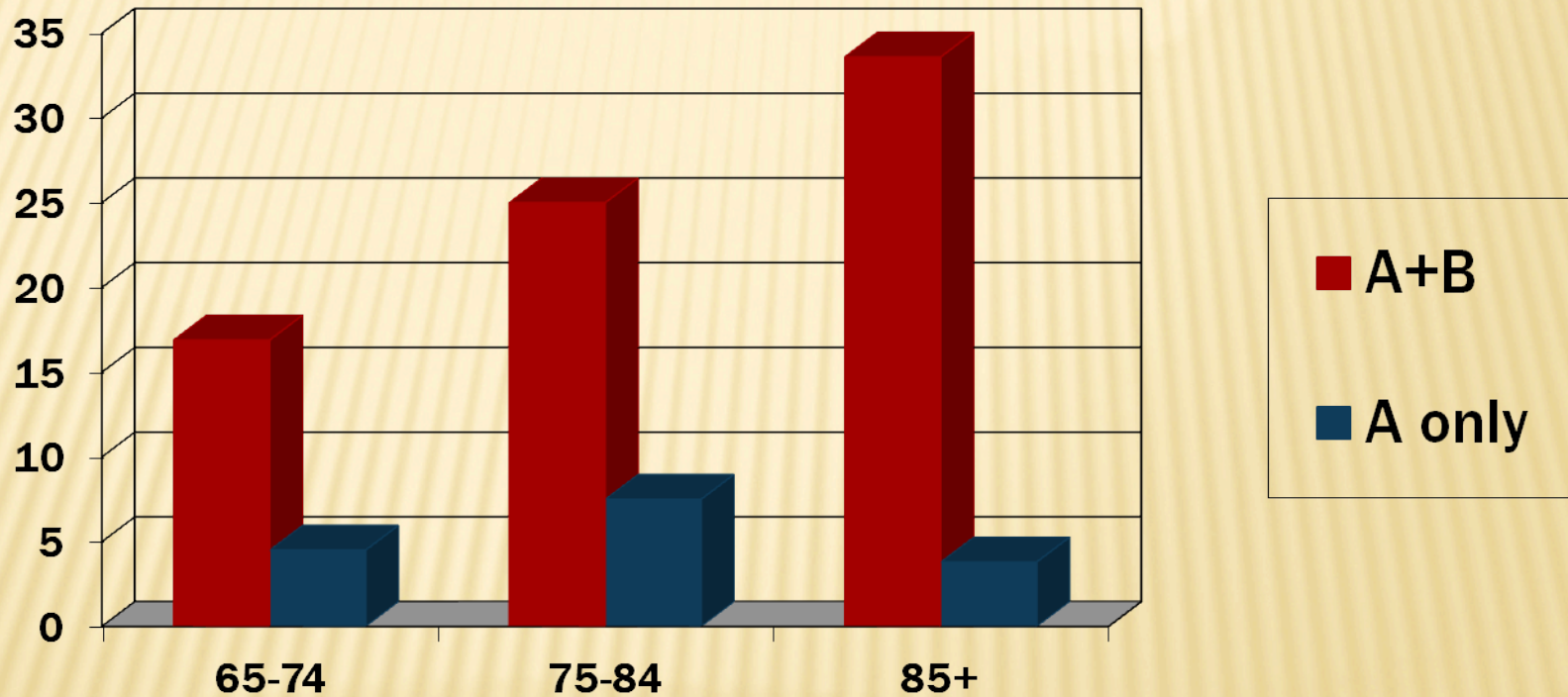
Monthly Enrollment Status

- Medicare participation is determined on a monthly basis
- CMS gathers and maintains information related to each beneficiary's enrollment status, including:
 - Part A entitlement
 - Part B enrollment
 - Disenrollment
- This information is in the BPCI LDS Denominator File

Part A and Part B Participation

- BPCI requires the assessment of Part A and Part B services, and that the beneficiaries be Part A entitled and enrolled in Part B.
- Beneficiaries are not required to have Part B benefits.
- However, 94% of beneficiaries have both Part A and Part B
- Should you agree that only those beneficiaries with Part A and Part B coverage be included in your study population? We recommend, “Yes”. Why? – next slide.
- How determine Part A and Part B participation?
 - Use MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable

Hospitalization rates (per 100 elderly Medicare beneficiaries) by Type of Coverage among Fee-for-service Beneficiaries, by age group



MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable

- For each month there is an entitlement/buy-in indicator that summarizes Part A and Part B benefits and state buy-in.
 - 0 = Not entitled
 - 1 = Part A only
 - 2 = Part B only
 - 3 = Part A and Part B
 - A = Part A, State buy-in
 - B = Part B, State buy-in
 - C = Parts A and B, State buy-in

MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable

- State “Buy-in” – means that the state has paid the premium and/or cost sharing for Part B for the beneficiary through traditional Medicaid or one of the other Medicare Savings Programs administered by the state Medicaid Program
- For the reasons shown in the last Figure on page 28, we recommend that only beneficiaries with MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable values of 3 or C be included in analyses
- We recommend that you use the values for the month of the anchoring event to determine participation at the time of that event, and then require monthly indicator values of 3 or C until the end of your observation period.

MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable – Calendar year of data

- Examples:
 - 333333333333 (12 months A&B)
 - CCCCCCCCCCCC (12 months A&B, State Buy-in)
 - 111111333333 (5 months A, then 7 months A&B)
 - 111111111111 (12 months A)
 - 333300000000 (4 months A&B, 8 mon. not entitled)
 - 000000000033 (10 months not elig, 2 months A&B)
 - CCCCCCCC0000 (8 months A&B, State Buy-in, 4 months not entitled)

“Number of months” variables in BPCI LDS Denominator File

- There are annual summary counts of the number of months (1 through 12) of several of the variables we have discussed. The “number of months” variables are
 - HI COVERAGE (Part A coverage)
 - SMI COVERAGE (Part B coverage; SMI = Supplemental Medical Insurance)
 - HMO COVERAGE
 - STATE BUY-IN COVERAGE
- We recommend that you work with the monthly variables, not the “number of months’ variables.

Medicare Advantage Information for BPCI

- BPI projects are to exclude Medicare Advantage beneficiaries.
- Medicare Advantage plans transmit enrollment and disenrollment information to CMS
- The accuracy of these data is essential to ensure that MA plans are paid a monthly premium from CMS and to make sure that claims that are inadvertently submitted to CMS are rejected.
- The monthly HMO INDICATOR variable tells whether or not a beneficiary is in an MA plan, or not, for that month.

Monthly HMO INDICATOR variable

- Values:
 - A, B or C - Risk or “Lock-in” managed care
 - 1 or 2 – “Non-lock-in” managed care (cost managed care program)
 - 0 - Not in managed care
 - 4 - FFS beneficiaries in demonstration program; CMS to process claims (relatively new therefore not in LDS Data dictionary; In 2006, about 174,000 people nationally (.38%) had this value)
- Indicator does not distinguish between individuals in the fee-for-service system (FFS) and those not eligible for Medicare benefits for that month
- Therefore, use of the monthly HMO INDICATOR variable is limited to excluding those enrolled in managed care plans, not selecting those in fee-for service. The person could be not yet entitled or enrolled in Medicare in that month, or he/she could be dead.

Use of Monthly HMO INDICATOR variable

- Use at the time of the anchoring event?
 - Shouldn't be necessary. Why?
 - Only fee-for-services beneficiaries included in the BPI LDS utilization files
- Use after the month of the anchoring event?
 - YES, because no utilization information will be available for them, and you will not know if they did not use services, or moved from fee-for-service to managed care.

Using the monthly MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable and the monthly HMO INDICATOR variable to define your study population

1. Use the monthly MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable to determine and include those with Part A and Part B coverage
2. Use the monthly HMO INDICATOR variable to exclude those enrolled in Medicare Advantage plans when that occurs
3. Remember that the END STAGE RENAL DISEASE INDICATOR (ESRD) variable is an annual variable, so you will eliminate these beneficiaries for the entire year even if disease occurred in May.

Suggestion for way to identify the 4% of beneficiaries with non-validated date of death

- Use PART B TERMINATION CODE variable
- Values
 - 0 = Not terminated
 - 1 = Dead (BUT this requires that it be a validated date of death)
 - 2 = Non-payment of premium
 - 3 = Voluntary withdrawal
 - 9 = Other termination
- Now remember the MEDICARE ENTITLEMENT/BUY-IN VARIABLE. For those who change from "3" or "C" to "0" and who are "0" in the PART B TERMINATION CODE variable are likely to have died, and be in the 4%.
- PART B TERMINATION CODE an annual variable, so need to use the MEDICARE ENTITLEMENT/BUY-IN INDICATOR variable to know the month of termination, and the presumed month of death.

Summary

- All demographic information should be taken from the BPCI LDS Denominator File, not the utilization files
- Part A entitlement, Part B enrollment and Medicare Advantage enrollment should be determined on a monthly basis, and is easy to do.
- Excluding persons with end-stage renal disease presence is easy using one of several variables
- Not all deaths can be known precisely, but there is a “work around”.

Technical assistance

Please submit technical questions to:

resdac@umn.edu

Please reference
Bundled Payments
in the Subject line

Please include
DUA number and
Request ID