
II.3 Risk Adjustment

This section provides a high level overview of the findings from the ICD-10 Impact Analysis for the Risk Adjustment business area. It describes the interdependencies between the supporting functional areas, how ICD codes are used, opportunities to leverage the codes to improve risk adjustments, and high level readiness activities that must be completed to transition to ICD-10.

The primary finding from the ICD-10 impact assessment of Risk Adjustment concluded that **if the Risk Adjustment business area is not prepared for ICD-10, then payments to Medicare Advantage (MA) and Part D Plans could be incorrect. The business area impact is very high.** The functional areas that play a role to ensure that payments to MA and Part D Plans are correct are outlined in the interdependency section that follows.

II.3.1 Risk Adjustment Interdependencies

This subsection describes the interdependencies between the following functional areas in the Medicare Risk Adjustment business area (see the supporting appendix for additional details):

- Risk Adjustment - Appendix R.

Figure 2 illustrates the functional area in the Medicare Risk Adjustment business area. The diagram also illustrates the complexity of the Risk Adjustment functional area, based on the results of the impact analysis. For more information regarding the Functional Area Complexity¹⁸, see the supporting appendix.

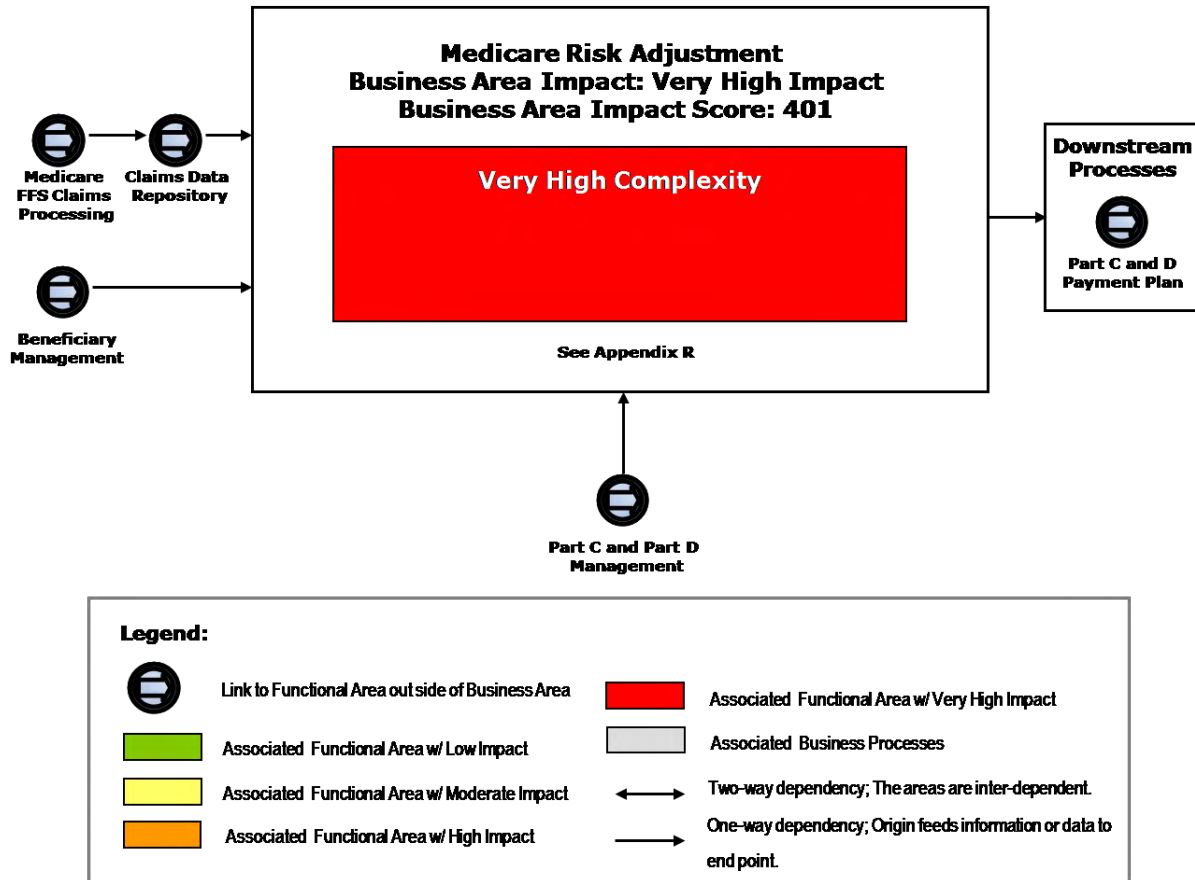


Figure 2: Risk Adjustment Functional Area Interdependencies

¹⁸ Functional Area Complexity Score (FACS) is a numerical score that identifies the complexity of the risks and associated work efforts within a specific functional area (e.g., Provider Cost Report) for the transition to ICD-10. For more information, refer to the Methodology section II.3.1.

II.3.2 Summary of ICD-10 Code Usage in Risk Adjustment

The foundation for quantifying the impact of the transition to ICD-10 requires knowledge of how the codes are used within the Risk Adjustment business area. The study revealed that the codes are used in the following manner:

- CPC adjusts per-beneficiary capitation payments to MA and Part D plans with a risk adjustment methodology. The risk adjustment methodology uses diagnoses (ICD codes) to measure the relative health risk of beneficiaries.
- The risk adjustment methodology uses ICD codes to create disease groups called Hierarchical Condition Categories (HCCs). CPC uses HCCs to predict costs and adjust payments to MA and Part D plans.
- CPC includes ICD codes in the Medicare Managed Care Manual that describes the risk adjustment methodology.
- CPC extracts ICD codes from Part C and D Plan encounter data and FFS claims to compute risk scores. CPC uses the risk score to create risk adjustment reports and factors.
- OIS loads the risk adjustment factors into the Medicare Advantage and Rx (MARx) system to adjust payments to Part C and Part D plan.
- Annually, CPC ensures that an MA Plan's risk adjustment diagnosis submitted for payment is based on valid medical record documentation. This process is a data abstraction and statistical sample of beneficiaries whose medical records are selected for medical record review.

II.3.3 ICD-10 Opportunities in Risk Adjustment

The increased granularity in the new ICD-10 code set offer potential benefits to improve the efficiency and effectiveness of meeting the Agency's key business objectives. For the Risk Adjustment business area, there are significant opportunities to improve the effectiveness and efficiency payments. The information that follows describes how the Risk Adjustment business area can leverage the codes.

ICD-10 codes present an opportunity to improve the accuracy and efficiency of the **Risk Adjustment** process as described below:

- **Improve HCC model accuracy to improve precision of capitation payments.**

The increased granularity of ICD-10 codes can improve the HCC models. Each HCC includes diagnosis codes that are related clinically and have similar cost profiles. The more precise diagnosis codes can allow for more accurate HCC models and risk adjustment. By providing more information on patient diagnoses, ICD-10 codes will provide CMS with more visibility into patients' health condition. Knowing more about diagnoses will allow the Risk

Adjustment process to measure the relative health of enrollees more accurately and perform more precise risk adjustment to the capitation payments to MA plans.

- **Reduce the need for second level medical reviews.**

The increased granularity of ICD-10 codes will provide more clinical detail on claims records and could reduce the need for second level medical record reviews conducted by Medical Review Contractors. This would allow for a reduction in the time and cost of medical record review to determine correct MA plan payments.

II.3.4 Summary of Risk Adjustment Higher Impact Risks

To transition to ICD-10, there will be a variety of risks that must be managed to ensure that the business area can implement the transition. The information below describes the most significant¹⁹ risks for the Risk Adjustment business area. If these risks are not managed, they will diminish CMS' ability to assign risk scores and calculate payments to Part C and Part D plans²⁰:

- If CPC/MPPG does not modify the risk adjustment policy to incorporate ICD-10 coding
- If processes for creating risk model algorithms, risk scores, and risk adjustment reports are not updated for ICD-10
- If the design of the algorithms stored in RAS do not allow for ICD-10 codes
- If the MA and PDP contractors do not update their front-end data collection processes to incorporate ICD-10 coding
- If MA Plans and PDPs do not capture ICD-10 codes correctly for patient encounter data
- If Medicare FFS claims processing does not capture ICD-10 codes correctly from patient encounters
- If CMS does not update the CMS-HCC Model Software, CMS-HCC-ESRD Model Software, and Rx Risk Adjustment software for ICD-10
- If vendors do not update vendor-supplied risk scoring software for ICD-10
- If the following risk adjustment systems and interfaces cannot accommodate ICD-10:
 - FERAS
 - RAPS
 - RAS
 - MDM Diagnosis Table
 - RAS and RAPS

¹⁹ Of all the risks for the Risk Adjustment business area, these risks received the highest ranking and score.

²⁰ The study also revealed additional, less severe risks, which are included in Appendix R.

II.3.5 Summary of Risk Adjustment ICD-10 Readiness Activities

The risks identified in the previous section have associated work efforts that are involved to ensure that the Risk Adjustment business area is prepared to transition to ICD-10. Table 5 describes these high-level activities that the Risk Adjustment business area will need to implement to ensure ICD-10 readiness.

Table 5: Risk Adjustment High Level Activities

Work Category	Highlights
Policy	<ul style="list-style-type: none"> • Update the ICD-based grouping of diseases into the Hierarchical Condition Category (HCC) and HCC-End Stage Renal Disease (HCC-ESRD) models. • Update the Medicare Managed Care Manual with appropriate ICD-10 language. • Update Medicare Part D (prescription drug coverage) risk adjustment models with ICD-10 codes
Process	<ul style="list-style-type: none"> • Educate Center for Drug and Health Plan Choice (CPC) risk adjustment staff, contractors, Plans, and vendors on ICD-10 codes. • Update the Medical Record and Validation processes for ICD-10. • Communicate with Center for Medicare Management (CMM) and Office of Information Services (OIS) to be aware of when Medicare FFS claims systems are ICD-10 ready.
Systems	<ul style="list-style-type: none"> • Design and implement the ability to utilize both ICD-9 codes and ICD-10 codes in risk scoring algorithms and in supporting processes and systems. • Update the following systems for ICD-10: <ul style="list-style-type: none"> – Front End Risk Adjustment System (FERAS) – Risk Adjustment Processing System (RAPS) – Risk Adjustment System (RAS) – Risk Adjustment Analysis and Reporting Tool (RASART) – Medical Decision Making (MDM) Diagnosis Table • Update system interfaces for ICD-10.

Appendix R

Risk Adjustment Process

ICD-10 Impact Analysis for
Planning and Implementation

**Centers for Medicare
& Medicaid Services**

Version 4.0
October 9, 2009

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Reference:

GSA Contract
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Task Order

No. GST0007NS0034

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3.0	7/22/09: Final version. Appendix R – Risk Adjustment.doc
4.0	10/9/09: Updated System Interaction Diagram, and incorporated comments from SMEs. Final version for publication with 508-compliance elements incorporated.

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Appendix R: Risk Adjustment

This document is an appendix to the main report, *ICD-10 Impact Analysis*. This appendix provides documentation of the impact assessment for Risk Adjustment. This appendix includes a description of the impact, potential risks, and work effort required to mitigate the risks.

The methodologies described in the main report, *ICD-10 Impact Analysis*, explain the process for arriving at the results contained in this appendix. To assist the reader with an understanding of the information in this appendix, Noblis has referenced relevant portions of the main report throughout the appendix.

R.1 Document Organization

The remainder of the document consists of the following sections:

Sections R-2 through R-4 contain an overview of the Risk Adjustment ICD-10 impact assessment.

- **Section R.2: High Level Summary of Risk Adjustment** provides an overview of Risk Adjustment and the relevant stakeholders.
- **Section R.3: Impact of ICD-10 Transition on Risk Adjustment** describes the use of ICD codes in Risk Adjustment policies, processes, and systems.
- **Section R.4: ICD-10 Transition Risks and Work Efforts** identifies the risks associated with the transition from ICD-9 to ICD-10 for Risk Adjustment. This section also outlines the work effort required to mitigate the identified risks and provides the total impact level for each risk. Section R.7 details how Noblis computed the impact level for each risk.

Sections R.5 through R.7 contain detailed information that supports the overview and analyses in the first four sections of the appendix.

- **Section R.5: Business Processes Impacted by the ICD-10 Transition** contains descriptions of the business processes impacted by the ICD-10 transition.
- **Section R.6: Systems Impacted by the ICD-10 Transition** contains descriptions of the Risk Adjustment systems that will be impacted by the transition.
- **Section R.7: Detailed Risk Adjustment Impact Assessment** includes a description of each risk. This section details the computation of the impact score for each risk. Section R.7 provides the detailed scoring methodology for each risk identified in Section R.4.

R.2 High Level Summary of Risk Adjustment

The purpose of this section is to provide a brief perspective on the policies, processes, systems, and stakeholders supporting Risk Adjustment.

Table R-1: High Level Overview of Risk Adjustment

Area: Risk Adjustment
Overview
Operational Policies
<p>The following factors govern this business process:</p> <ul style="list-style-type: none"> • Medicare Managed Care Manual, Chapter 8 – Payments to Medicare Advantage Organizations (http://www.cms.hhs.gov/manuals/downloads/mc86c08.pdf) • Code of Federal Regulations – 42 CFR, Part 422; Adjustments to capitation rates, benchmarks, bids, and payments. <p><i>Annual Notice of changes to payment methodology is published and subject to public comments.</i></p>
High Level Business Process Diagram¹
<pre> graph LR A[Submit Encounter and RX Data] --> B[Front End Editing and Validation] B --> C[RAS Processing Model Execution Risk Score] C --> D[Risk Adjustment Reports] D --> E[Risk Adjustment Payments] F[Medical Record Sampling] --> E </pre>

¹ See business process model in Section R.5 for details.

Area: Risk Adjustment

Process Description²

Medicare risk-adjusts its payments to health plans under the Medicare Advantage (MA) program and the Program for the All-Inclusive Care of the Elderly (PACE). Risk adjustment ensures that on average payments to Medicare Advantage Plans (Medicare Part C) are accurate for beneficiaries at any given level of expected cost (i.e. risk). This provides MA organizations with the appropriate incentives to enroll and retain beneficiaries regardless of their illness burden. Risk adjustment also helps provide MA organizations with protection against the risk of adverse selection. At the same time, risk adjustment lowers payments for beneficiaries expected to use fewer resources. CMS uses risk adjustment data (captured through Medicare FFS claims and data submitted directly by MA plans) to group patients into risk adjustment categories and assign payments based on a member's medical condition group and create "risk scores." Under Medicare Part C, CMS uses risk scores to standardize plan bids for bid comparison based on beneficiary populations with different health status and other characteristics.

Owners of Process

The following CMS component(s) own Risk Adjustment:

- Business Owner: Center for Drug and Health Plan Choice / Medicare Plan Payment Group (CPC/MPPG)

Stakeholders of Process

The following stakeholders participate in Risk Adjustment:

- *External Business Partners:*
 - Providers
 - MA Plan Enrollees
 - Employers
 - Medicare Advantage (MA) Plans
 - PACE Organizations
 - Prescription Drug Plans (PDP)
 - Medicare Advantage Prescription Drug Plan (MA-PD)
 - Researchers

² Please note that the impact analysis only considers processes that will be impacted by the transition to ICD-10.

Area: Risk Adjustment

Stakeholders of Process (cont.)

- *Internal Business Partners:*
 - CMS Office of Information Services (OIS)
- *Business and System Owners:*
 - Risk Adjustment System (RAS): CPC is the business owner and OIS is the system owner
 - Front End Risk Adjustment System (FERAS): CPC is the business owner and system owner
 - Medicare Advantage and Prescription Drug System (MARx): CPC is the business owner and OIS is the system owner
 - National Medicare Utilization Database (NMUD): CMM is the business owner and OIS is the system owner
 - Health Plan Management System (HPMS): CPC is the business owner and system owner
 - Risk Adjustment Processing System (RAPS): CPC is the business owner and OIS is the system owner
 - Risk Adjustment Analysis and Reporting Tool (RAS ART): CPC is the business owner and OIS is the system owner
- *Contractors:*
 - Statistical Contractors
 - RTI
 - Lead Analytical Contractors (LAC)
 - Medical Record Review Contractors
 - System Maintainers
 - Risk Adjustment Processing System (RAPS) - IBM
 - Front End Risk Adjustment System (FERAS) – Palmetto GBA

Systems³

The following systems are involved in Risk Adjustment:

- *Primary:*
 - Front End Risk Adjustment System (FERAS)
 - Risk Adjustment Processing System (RAPS)

³ Systems impacted by the transition to ICD-10 are defined in Section R.6 of this document

Area: Risk Adjustment

Systems (cont.)

- Risk Adjustment System (RAS)
- Risk Adjustment Analysis and Reporting Tool (RAS ART)
- Medical Decision Making (MDM) Diagnosis Table
- *Secondary (systems that send or receive data to or from the primary systems):*
 - Claims Data Repositories
 - Common Working File Medicare Quality Assurance System (CWFMQA)
 - National Claims History (NCH)
 - National Medicare Utilization Database (NMUD)
 - Statistical Analytical File (SAF)
 - Medicare Beneficiary Database (MBD)
 - Medicare Advantage and Part D System (MARx)
 - Health Plan Management System (HPMS)
 - Statistical Analysis Software (SAS) used by Analytic Contractors for Medical Record Review

Figure R-1 is a context diagram that identifies the major stakeholders and systems involved with Risk Adjustment not necessarily in order of business process or importance.

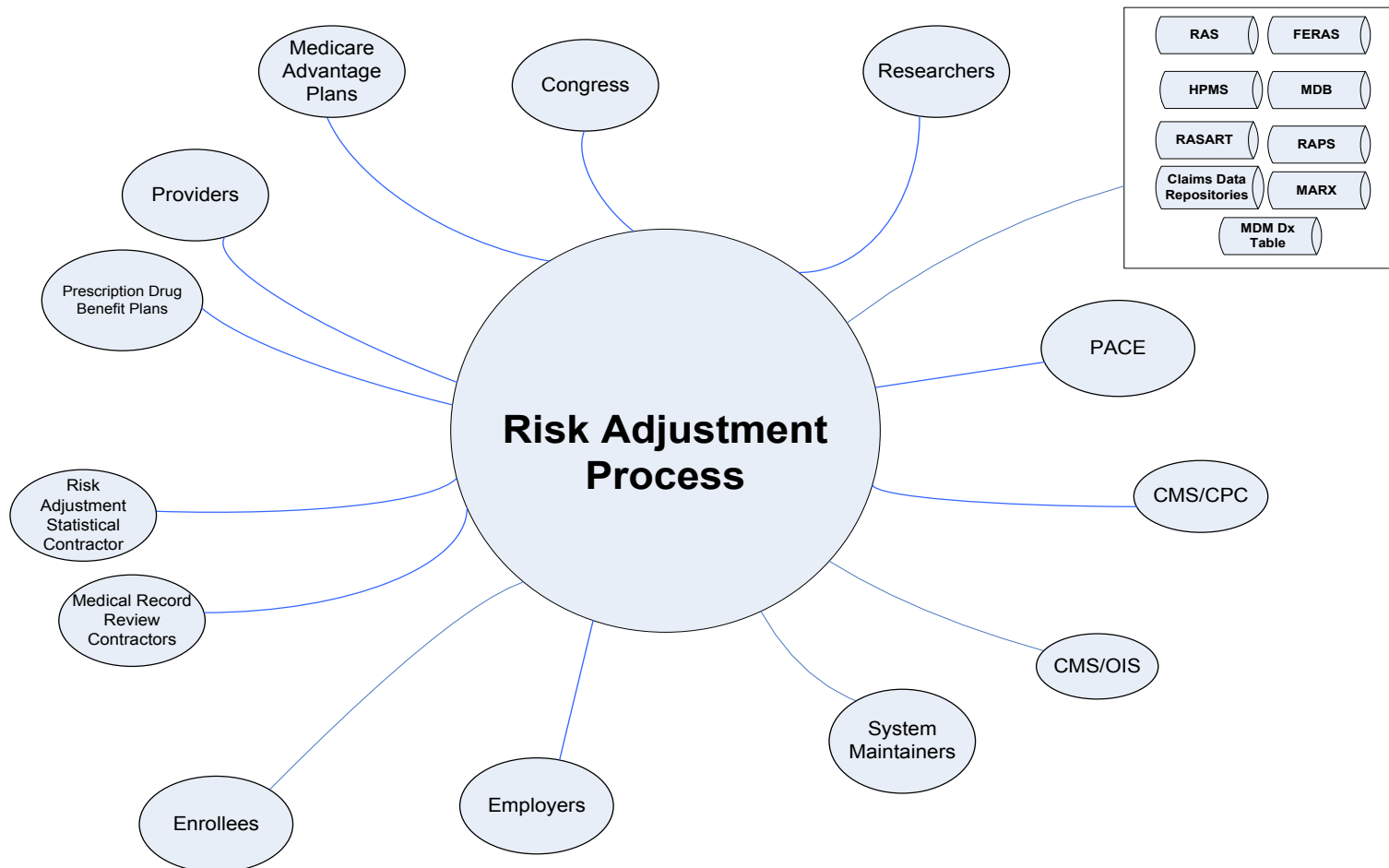


Figure R-1: Risk Adjustment Context Diagram

R.3 Impact of ICD-10 Transition on Risk Adjustment

This section identifies how ICD codes are used in Risk Adjustment policies, processes and systems. Based on ICD code usage, the section then identifies the overall impact of the ICD-10 transition on Risk Adjustment.

Table R-2 provides an overview of how ICD codes are used within Risk Adjustment and documents the Overall Impact Score for Risk Adjustment. The Overall Impact Score is based on the risks outlined in the following Section, R.4. For details on how the codes are used, see Tables R-3, R-4, and R-5 and review Section R.7.

Table R-2: Risk Adjustment ICD-10 Usage and Total Impact Score

Area: Risk Adjustment
Summary of ICD Code Usage and ICD-10 Transition Impacts
<p>ICD code usage within corresponding Risk Adjustment operational policy, processes, and systems is described below:</p> <ul style="list-style-type: none"> <p><i>Policy:</i> ICD codes are significant to several areas within Risk Adjustment policy. The Medicare Managed Care Manual contains reference to ICD codes as does the software available for download in the Medicare Advantage/Risk Adjustment section of the CMS website. These ICD codes are used in creating risk model algorithms that are used to calculate risk scores and payments to MA and PDP plans. MA plans utilize the ICD information in the Medicare Managed Care Manual and the website software as reference for risk models.</p> <p><i>Process:</i> ICD codes are critical to the risk adjustment process. CMS adjusts per-beneficiary capitation payments with a risk adjustment methodology using diagnoses to measure relative risk due to health. Risk adjustment using diagnoses provides more accurate payments for MA organizations than prior demographic-based adjustment methodologies. Risk adjustment results in higher payments for enrollees at risk for being sicker, and lower payments for enrollees predicted to be healthier.</p> <p>The risk adjustment methodology uses the Hierarchical Condition Category (HCC) model. The CMS-HCC models group ICD codes into disease groups called Hierarchical Condition Categories (HCCs). Each HCC includes diagnosis codes that are related clinically and have similar cost profiles. The CMS-HCC models are prospective as they use diagnosis information from a base year to predict costs for the next year.</p>

Summary of ICD Code Usage and ICD-10 Transition Impacts (cont.)

CMS uses demographic and diagnostic information from Medicare FFS and all MA organizations a beneficiary may have joined to determine the appropriate risk score for each beneficiary. The risk score is computed for each beneficiary for a given year and applied prospectively. When an MA organization forwards beneficiary enrollment information to CMS, CMS then sends the organization the appropriate risk scores for the beneficiary, as well as the resultant payment.

- *Systems* – The following systems collect and store ICD codes
 - FERAS
 - RAPS
 - RAS
 - RAS ART
 - Medical Decision Making (MDM) Diagnosis Table

Opportunities

Does the ICD-10 transition present opportunities for Risk Adjustment?: Yes

ICD-10 codes present an opportunity to improve the accuracy and efficiency of the Risk Adjustment process by:

Improving HCC model accuracy: The increased granularity of ICD-10 codes can improve the HCC models. Each HCC includes diagnosis codes that are related clinically and have similar cost profiles. The more precise diagnosis codes can allow for more accurate HCC models and risk adjustment. By providing more information on patient diagnoses, ICD-10 codes will provide CMS with more visibility into patients' health condition. Knowing more about diagnoses will allow the Risk Adjustment process to measure the relative health of enrollees more accurately and perform more precise risk adjustment to the capitated payments to MA plans.

Streamlining Medical Record Review: The increased granularity of ICD-10 codes will provide more clinical detail on claims records and could reduce the need for second level Medical Record Reviews conducted by Medical Review Contractors. This would allow for a reduction in the time and cost of medical record review to determine correct MA plan payments.

Work Effort Summary

The components involved in the Risk Adjustment process will need to complete the following activities to prepare for ICD-10. These activities will mitigate the risks of ICD-10.⁴

- Update the Medicare Managed Care Manual with appropriate ICD-10 language.
- Update Medicare Part D (prescription drug coverage) risk adjustment models with ICD-10 codes.
- Educate CPC/MPPG staff on ICD-10 codes and update risk adjustment policy as appropriate.
- Educate MA Plans and PDPs on the increased granularity and use of the ICD-10 code set and the importance of utilizing the correct code.
- Communicate with OIS to be aware of when FFS claims systems are ICD-10 ready.
- Update the ICD based grouping of diseases into the HCC and HCC-ESRD models.
- Design, test, and implement updates to the following processes:
 - The front end risk adjustment process.
 - The Medical Record and Validation processes for ICD-10.
 - New risk algorithms.
- Update FERAS, RAPS, RAS, RAS ART, and the MDM Diagnosis Table⁵:
 - Update FERAS data model and business logic for ICD-10 codes.
 - Build the capability to store and utilize ICD-9 and ICD-10 codes.
- Update the following interfaces for ICD-10:
 - NMUD to RAS
 - RAPS to RAS
 - MDM Diagnosis Table to RAS
 - RAS to RAS ART

⁴ See Section R.4 and R.7 for more detail on the risks and associated work effort.

⁵ MDM will be replaced by an equivalent table for ICD-10 diagnoses codes

Overall Functional Area Impact Score ⁶

**Very High Complexity
Functional Area Impact Score: 401**

Although the numerical score would indicate a High Complexity Range, Noblis determined that the Risk Adjustment Process is a Very High Complexity Functional Area because a failure to incorporate ICD-10 codes would negatively affect CMS payments to Part C and D Plans.

⁶ The Functional Area Impact Score is a numerical score that identifies the complexity of the risks and work efforts that must be managed within a specific independent component for the transition to ICD-10. This score does not consider how changes made to processes and systems managed by the independent component will impact related business areas.

Tables R-3 to R-5 provides a more detailed description of ICD code usage in Risk Adjustment. For system definitions, refer to Section R.6.

Table R-3: ICD Code Usage in the Policy for Risk Adjustment

Usage	Yes / No
Does the area reference policy that includes ICD codes?	Yes
Does the relevant policy print ICD codes?	Yes

Table R-4: ICD Code Usage in the Processes for Risk Adjustment

Usage	Risk Adjustment Payment Policy	Create Algorithms	Front End Editing	Extract Risk Adjustment Data	RAS Processing Risk Scoring	Risk Adjustment Payment	Risk Adjustment and Data Validation and Medical Review
Does the process include automated business processes that utilize ICD codes?	No	No	Yes	Yes	Yes	Yes	Yes
Does the process include human based business processes ⁷ that utilize ICD codes?	Yes	Yes	No	No	Yes	Yes	Yes
Does the process have hardcopy forms that utilize ICD codes?	Yes	No	No	No	No	No	Yes

⁷ A human based business process requires human intervention in order for the process to end in completion.

Table R-5: ICD Code Usage in the Systems for Risk Adjustment

Usage	RAS	FERAS	RAPS	RAS ART	MDM Diagnosis Table	MBD	MARx	HPMS
Do the supporting systems collect and store ICD codes?	Yes	Yes	Yes	Yes	Yes	No	No	No
Do the supporting systems have automated processing or business rules that utilize ICD codes?	Yes	Yes	Yes	Yes	Yes	No	No	No
Do the supporting systems have workflow rules or alerts based on ICD codes?	No	Yes	No	No	No	No	No	No
Do the systems include ICD codes on user interfaces?	Yes	No	Yes	Yes	Yes	No	No	No
Do the systems include ICD codes in system-to-system interfaces?	Yes	Yes	Yes	Yes	Yes	No	No	No
Do the systems include ICD codes on reports?	Yes	Yes	Yes	Yes	N/A	No	No	No
Do the systems include ICD codes on correspondence?	No	No	No	No	N/A	No	No	No

R.4 ICD-10 Transition Risks and Work Efforts

This section identifies the risks associated with the ICD-10 transition, describes the work effort required to mitigate the risks, and documents the impact and the corresponding score. The assessment assigns each risk to an owner(s) and assumes that the owner(s) will manage and/or perform the work effort. This risk assessment does not estimate the level of effort or timeframes for the work efforts.⁸

Table R-6 presents the location of risks associated with Risk Adjustment operational policy (*Note: See Section R.7.1 for impact assessment details and factors incorporated to determine the Impact Level*).

Table R-6: Description of Risk Adjustment Policy Risks

#	Risk Description	Transition Effort Required	Impact Level ⁹	Risk and Work Effort Owner
POL #1	If CPC/MPPG creates new policies for risk adjustment that incorrectly address ICD coding, then algorithms, risk scores and payment calculation will be incorrect, leading to incorrect risk adjustments and payments to Part C and Part D plans. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update the ICD based grouping of diseases into the HCC and HCC-ESRD models.	High	CPC/MPPG

⁸ The Implementation Plan, another deliverable for this project, will include timeframes and a level of effort estimate for the work efforts required to mitigate the risks.

⁹ See Section R-7 for a detailed description of impact scoring.

#	Risk Description	Transition Effort Required	Impact Level ⁹	Risk and Work Effort Owner
POL #2	The Medicare Managed Care Manual refers to the use of ICD-9 codes in the HCC models. If CMS does not update the Medicare Managed Care Manual with ICD-10 language, then the manual that external stakeholders use for reference may not have the correct information potentially causing misinterpretations and introductions of errors in models, resulting in improper payment to Part C and Part D plans.	Update the Medicare Managed Care Manual with appropriate ICD-10 language.	Moderate	CPC/MPPG
POL #3	The CMS website provides risk model diagnosis codes for external stakeholders. If CMS does not update these models for ICD-10, then MA plans may not have the correct information for risk adjustment, potentially resulting in increased appeals of risk adjustment since risk adjustment payments will not be what they were expecting, resulting in increased costs from appeals.	Update Part D risk adjustment models with the ability to incorporate ICD-10 codes.	Moderate	CPC/MPPG
POL #4	If the design of the algorithms stored in RAS do not allow for ICD-10 codes, then incorrect risk scores will be produced, leading to incorrect risk adjustments and payments to Part C and Part D plans. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Translate ICD-9 codes in specifications and algorithms stored in RAS to correct ICD-10 codes.	High	CPC/MPPG

Table R-7 presents the risks associated with the Risk Adjustment business processes (Note: See Section R.7.2 for impact assessment details and factors incorporated to determine the Impact Level).

Table R-7: Description of Risk Adjustment Process Risks

#	Risk Description	Transition Effort Required	Impact Level ¹⁰	Risk and Work Effort Owner
PRO #1	MA and PDP contractors must update their front-end data collection processes to incorporate ICD-10 coding. If this is done incorrectly, then format, data integrity, and validity edits will be incorrect resulting in inaccurate data being generated for risk adjustment analysis and incorrect Part C and Part D payments.	Design, test, implement, and maintain updates to the front end risk adjustment process.	High	CPC/MPPG
PRO #2	Risk Adjustment Extraction Processes must be updated to obtain data from sources such as NCH, NMUD, MA Plans, and PDP. If the extraction process is not changed to incorporate ICD-10 codes, then risk adjustment data will be incorrect. This will cause errors in risk scoring models and Part C and Part D plan payments.	Design, test, implement, and maintain interfaces from external front end data sources.	Moderate	CPC/MPPG

¹⁰ See Section R.7 for a detailed computation of the impact level.

#	Risk Description	Transition Effort Required	Impact Level ¹⁰	Risk and Work Effort Owner
PRO #3	Processes for creating new risk model algorithms, risk scores, and risk adjustment reports must be updated. If the algorithms are not changed to incorporate ICD-10 codes, then risk adjustment data and risk scores will be incorrect, resulting in incorrect payment for Part C and Part D plans. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, implement, and maintain new risk algorithms.	High	CPC/MPPG
PRO #4	If CMS does not ensure that the statistical contractor and Medical Record Review contractors translate ICD-9 codes to ICD-10 codes correctly in their algorithms and review process, then incorrect information will be available for the risk adjustment process and risk models may be invalid, resulting in inaccurate plan payments.	Provide assistance and oversight to contractors as they modify algorithms and review processes for correct translations to ICD-10.	Moderate	CPC/MPPG
PRO #5	MA Plans and PDPs must capture ICD-10 codes correctly for patient encounter data. If they do not capture ICD-10 codes correctly when sending CMS encounter data and information, then CPC may not have the correct data for the risk scoring, resulting in inaccurate payments. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Educate MA Plan and PDPs on the increased granularity and use of the ICD-10 code set and the importance of utilizing the correct code.	High	CPC/MPPG

#	Risk Description	Transition Effort Required	Impact Level ¹⁰	Risk and Work Effort Owner
PRO #6	Medicare FFS claims processing must capture ICD-10 codes correctly from patient encounters. If the Medicare FFS process (e.g., claims from providers, physicians, suppliers, etc.) does not capture ICD-10 codes correctly when sending CMS claims data and information, then CPC may not have the correct data for the risk scoring, resulting in inaccurate plan payment. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Communicate with OIS to keep apprised of when FFS claims systems are ICD-10 ready.	High	CPC/MPPG
PRO #7	If CMS does not ensure that external vendors and system maintainers have appropriate knowledge of ICD-9 to ICD-10 translation, then vendor-supplied software for collecting and storing and reporting on risk data will be incorrect and payment calculations will be incorrect.	Provide education and outreach to external vendors on ICD-9 to ICD-10 translations.	High	CPC/MPPG
PRO #8	The process for validating Part C risk adjustment diagnoses is based on clinical medical record documentation. If these processes do not incorporate ICD-10 coding, then medical review may not accurately assist with validating risk scores, resulting in inaccurate risk adjustment and payment.	Update the Medical Record and Validation processes for ICD-10.	Moderate	CPC/MPPG

#	Risk Description	Transition Effort Required	Impact Level ¹⁰	Risk and Work Effort Owner
PRO #9	MA Plans can appeal risk adjustment decisions. CMS will need to maintain historical data containing both ICD-9 and ICD-10 codes for a period of five years. If the risk adjustment systems cannot store ICD-9 and ICD-10 codes, then CMS will not be able to adjudicate risk adjustment appeals properly, resulting in increased costs from incorrect appeals decisions or grievances.	Build the capability to store both ICD-9 and ICD-10 code sets in FERAS, RAPS, RAS, RAS ART, and the MDM Diagnosis Table.	Moderate	CPC/MPPG

Table R-8 presents the risks associated with the existing Risk Adjustment systems (*Note: See Section R.7.3 for impact assessment details and factors incorporated to determine the Impact Level*).

Table R-8: Description of Risk Adjustment System Risks

#	Risk Description	Transition Effort Required	Impact Level ¹¹	Risk and Work Effort Owner
SYS #1	If FERAS cannot accommodate the longer ICD-10 codes, then it will not be able to accept or accurately validate encounter data from providers and MA/PD plans, resulting in incorrect risk adjustment and plan payment.	Update FERAS data model and business logic for ICD-10 codes.	High	CPC/MPPG
SYS #2	If RAPS cannot accommodate the longer ICD-10 codes, then it will not be able to accept or store data from FERAS and the MDM diagnoses table. This would prevent the establishment of risk scoring models, resulting in incorrect risk adjustment and plan payment.	Update RAPS data model and business logic for ICD-10 codes. Update interface	High	CPC/MPPG

¹¹ See Section R.7 for a detailed computation of the impact level.

#	Risk Description	Transition Effort Required	Impact Level ¹¹	Risk and Work Effort Owner
SYS #3	If RAS cannot accommodate the longer ICD-10 codes, then it will not be able to accept or store risk data from data repositories, RAPS, MARX, and HPMS and will not calculate risk scores correctly and incorrect plan payment. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update RAS data model and business logic for ICD-10 codes.	High	CPC/MPPG
SYS #4	If RAS ART cannot accommodate the longer ICD-10 codes, then it will not be able to accept or store risk data and generate risk adjustment reports accurately. As a result, incorrect and inadequate risk adjustment information would be provided to users of the reports.	Update RAS ART data model and business logic for ICD-10 codes.	Moderate	CPC/MPPG
SYS #5	If the MDM Diagnosis Table cannot accommodate the longer ICD-10 codes, then it will not be able to store or provide ICD-10 information to RAS. This would affect the risk scoring process and could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update MDM Diagnosis Table data model and business logic for ICD-10 codes.	High	CPC/MPPG

#	Risk Description	Transition Effort Required	Impact Level ¹¹	Risk and Work Effort Owner
SYS #6	The interface between RAS and the NMUD data repositories includes ICD codes. If the interface is not updated for ICD-10, then the risk score calculation will not function and payment calculation will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement an updated RAS-NMUD interface.	Moderate	CPC/MPPG
SYS #7	RAS will need to continue using ICD-9 codes for five years after ICD-10 implementation. If RAS is unable to: (a) accept both ICD-9 and ICD-10 codes from the feeder systems; and (b) use ICD-9 codes for retroactive scenarios, then risk scoring and payments will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update RAS to include the ability to utilize and store accept both ICD-9 and ICD-10 codes.	Moderate	CPC/MPPG

#	Risk Description	Transition Effort Required	Impact Level ¹¹	Risk and Work Effort Owner
SYS #8	If RAS does not update its business rules for ICD-10 codes correctly, then risk scores and payments may be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update RAS business rules for ICD-10.	High	CPC/MPPG
SYS #9	RAS constructs the risk scores based partly on FFS claims history. The claims history prior to ICD-10 implementation will have ICD-9 codes, while post implementation, claims will have ICD-10 codes. If RAS cannot separately construct risk scores using ICD-9 and ICD-10 records, then risk adjustments and risk scores will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	The RAS system maintainer will need to update any logic that creates risk scores across ICD-9 and ICD-10 records.	Moderate	CPC/MPPG

#	Risk Description	Transition Effort Required	Impact Level ¹¹	Risk and Work Effort Owner
SYS #10	The interface between RAS and RAPS includes ICD codes. If the interface is not updated for ICD-10, then the risk score calculation will not function and payment calculation will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement an updated RAS-RAPS interface.	High	CPC/MPPG
SYS #11	The interface interaction between RAPS and MDM includes ICD codes. If the interface is not updated for ICD-10, then the risk score calculation and risk adjustment reports will not function correctly. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated RAPS-MDM interface.	Moderate	CPC/MPPG

#	Risk Description	Transition Effort Required	Impact Level ¹¹	Risk and Work Effort Owner
SYS #12	The interface between RAS and RAS ART includes ICD codes. If the interface is not updated for ICD--10, This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated RAS-RAS ART interface.	Moderate	CPC/MPPG
SYS #13	CMS provides software related to risk adjustment on its website in the <i>Medicare Advantage Special Rates</i> area. CMS provides software for CMS-HCC Model Software, CMS-HCC-ESRD Model Software, and Rx Risk Adjustment software. If CMS does not update this software for ICD-10, then the risk score calculation will not function and payment calculation will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated HCC and Rx Risk adjustment software.	High	CPC/MPPG

R.5 Business Processes Impacted by the ICD-10 Transition

This section documents the Risk Adjustment process that will be impacted by the transition to ICD-10. The following information provides an overview, a business process model (BPM) diagram, and a textual description of the process.

Table R-9 provides an overview of the Implement Risk Adjustment Payment Policy process.

Table R-9: Implement Risk Adjustment Payment Policy Overview

Attribute	Description
Process Name	Implement Risk Adjustment Payment Policy
Process Description	At a high level, the Implement Risk Adjustment Payment Policy works as follows: <ul style="list-style-type: none"> • Legislation and CMS initiatives drive Risk Adjustment Payment policy • CPC/MPPG creates policy to manage change to the Risk Adjustment process • Non-routine changes are published through the <i>Annual Notice</i> of changes to payment methodology and subject to public comment
Triggers	The Implement Risk Adjustment Payment Policy process begins when: <ul style="list-style-type: none"> • Legislation or CMS initiatives can include changes to the risk adjustment process.
Input	The primary input(s) to Implement Risk Adjustment Payment Policy are: <ul style="list-style-type: none"> • Legislative rules • CMS directive
Output	The primary output(s) from Implement Risk Adjustment Payment Policy are: <ul style="list-style-type: none"> • New RA payment policy that includes business and system requirements to meet the needs of the modified policy.

Attribute	Description
Business Owner	The business owners of Implement Risk Adjustment Payment Policy: <ul style="list-style-type: none"> • CPC/MPPG
Related Processes	The following business processes are related to of Implement Risk Adjustment Payment Policy: <ul style="list-style-type: none"> • Medicare FFS Claims Processing • Part C and Part D payment policy
Failures	If Implement Risk Adjustment Payment Policy does not function correctly, CMS may experience the following potential consequences: <ul style="list-style-type: none"> • Incorrect plan payments • Increase in appeals
Governing Legislation / Regulation	Specific policy documents include: <ul style="list-style-type: none"> • Medicare Managed Care Manual, Chapter 8 – Payments to Medicare Advantage Organizations • <i>Code of Federal Regulations – 42CFR, Part 422; Adjustments to capitation rates, benchmarks, bids, and payments</i>
Participants	Participants in Implement Risk Adjustment Payment Policy include: <ul style="list-style-type: none"> • Congress • CPC/MPPG • RA System maintainers • Support contractors
Timing	Ongoing
Additional Information	N/A

Attribute	Description
Referenced Documents	<p><i>ICD-10 Planning and Implementation Final Impact Report</i>, Foundation of Research and Education of AHIMA, September 15, 2008</p> <p>Medicare Managed Care Manual, Chapter 8 – Payments to Medicare Advantage Organizations</p> <p>Code of Federal Regulations - 42CFR, Part 422; Adjustments to capitation rates, benchmarks, bids, and payments</p>

Implement Risk Adjustment Payment Policy BPM

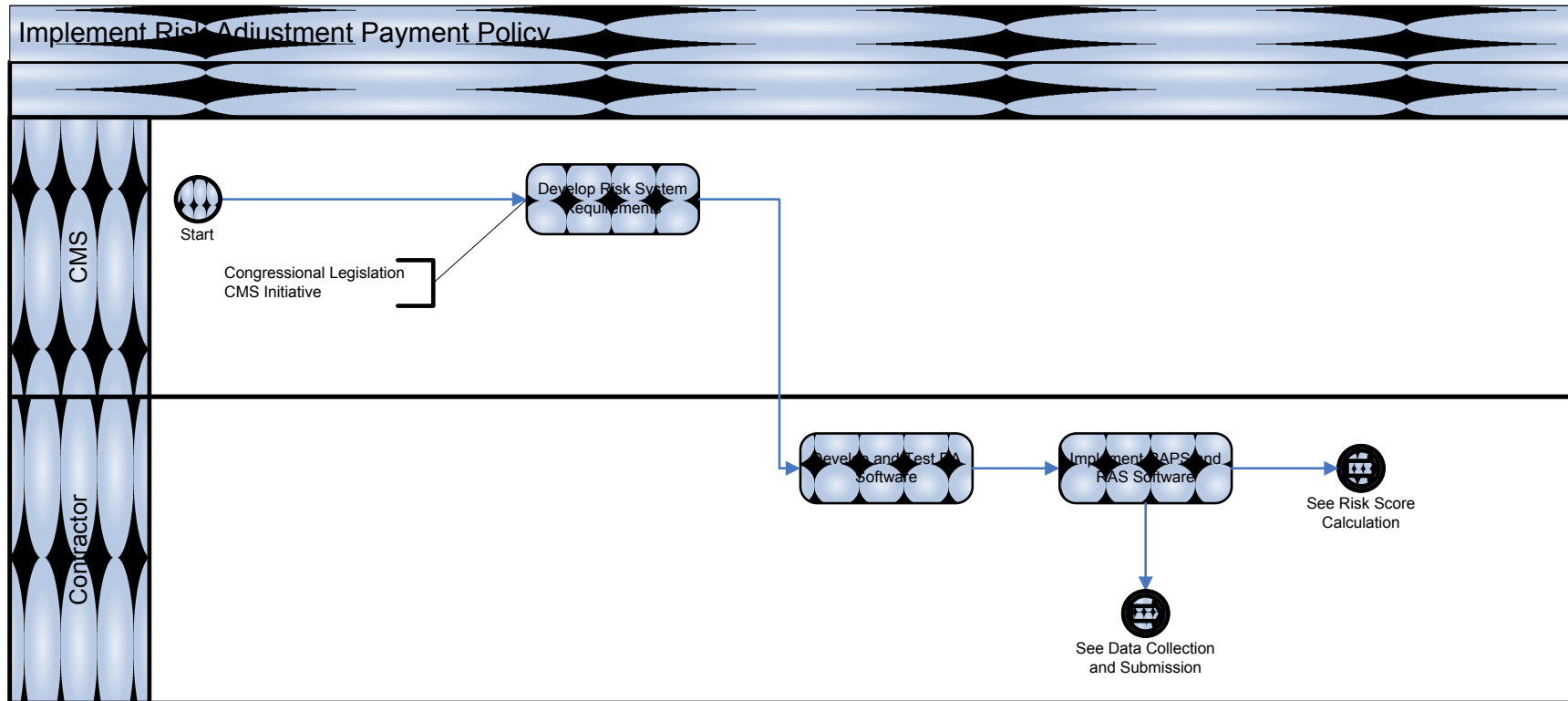


Figure R-2: Implement Risk Adjustment Payment Policy

Table R-10: Implement Risk Adjustment Payment Policy Business Process Description

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Congressional Legislation	Congress passes legislation impacting Risk Adjustment payments.	Congress	None	Legislation	Federal Regulation	No	N/A
New CMS Initiative	CMS has an initiative that impacts risk adjustment payment policy.	CMS	None	CMS Directive	CMS Directive	No	N/A
New RA Payment Policy	CMS creates new RA payment policy to support changes in legislation or CMS initiative	CPC\MPPG	May involve ICD	Federal Regulations and CMS Directive	New payment policy System/business requirements Communication of System Requirements	Yes	FERAS RAS RAPS RAS ART
Implement RA Payment Policy	Develop, test, and implement changes to RA systems and business processes	Appropriate support contractor, systems maintainers	May involve ICD	System Requirements	Updated Systems Update Business Processes	Yes	FERAS RAS RAPS RAS ART Risk Algorithms

Table R-11 provides an overview of the Data Collection and Submission process.

Table R-11: Data Collection and Submission Overview

Attribute	Description
Process Name	Data Collection and Submission Overview
Process Description	<p>At a high level, the Data Collection and Submission works as follows:</p> <ul style="list-style-type: none"> • Providers submit Medicare beneficiary encounter data to the beneficiary’s Medicare Advantage Plan or pharmacies submit prescription drug transaction data to the beneficiary’s Prescription Drug Plan. • FERAS edits and accepts/rejects the encounter/drug data • If accepted, FERAS sends the data to CMS for further processing in RAPS • If rejected then data error reports are sent to the MA or PD Plans for correction
Triggers	<p>The Data Collection and Submission process begins when:</p> <ul style="list-style-type: none"> • Providers submit Medicare beneficiary encounter data to the beneficiary’s MA Plan and prescription drug data is submitted to the PDP or MA-PD
Input	<p>The primary input(s) to Data Collection and Submission are:</p> <ul style="list-style-type: none"> • Encounter and Rx data
Output	<p>The primary output(s) from Implement Risk Adjustment Payment Policy are:</p> <ul style="list-style-type: none"> • Accepted encounter/Rx data • Data Error report for data not passing edits

Attribute	Description
Business Owner	The business owners of Data Collection and Submission: <ul style="list-style-type: none"> • CPC\MPPG
Related Processes	The following business processes are related to Data Collection and Submission: <ul style="list-style-type: none"> • Risk score calculation
Failures	If Data Collection and Submission does not function correctly, CMS may experience the following potential consequences: <ul style="list-style-type: none"> • Incorrect risk adjustment payments • Increase in appeals
Governing Legislation / Regulation	Specific policy documents include: <ul style="list-style-type: none"> • <i>Medicare Managed Care Manual, Chapter 8 – Payments to Medicare Advantage Organizations</i>
Participants	Participants in Data Collection and Submission include: <ul style="list-style-type: none"> • Providers • MA Plans • PDP/MA-PD Plans
Timing	Ongoing
Additional Information	N/A
Referenced Documents	<i>ICD-10 Planning and Implementation Final Impact Report</i> , Foundation of Research and Education of AHIMA, September 15, 2008 Medicare Managed Care Manual, Chapter 8 – Payments to Medicare Advantage Organizations Code of Federal Regulations – 42CFR, Part 422; Adjustments to capitation rates, benchmarks, bids, and payments

Data Collection and Submission BPM

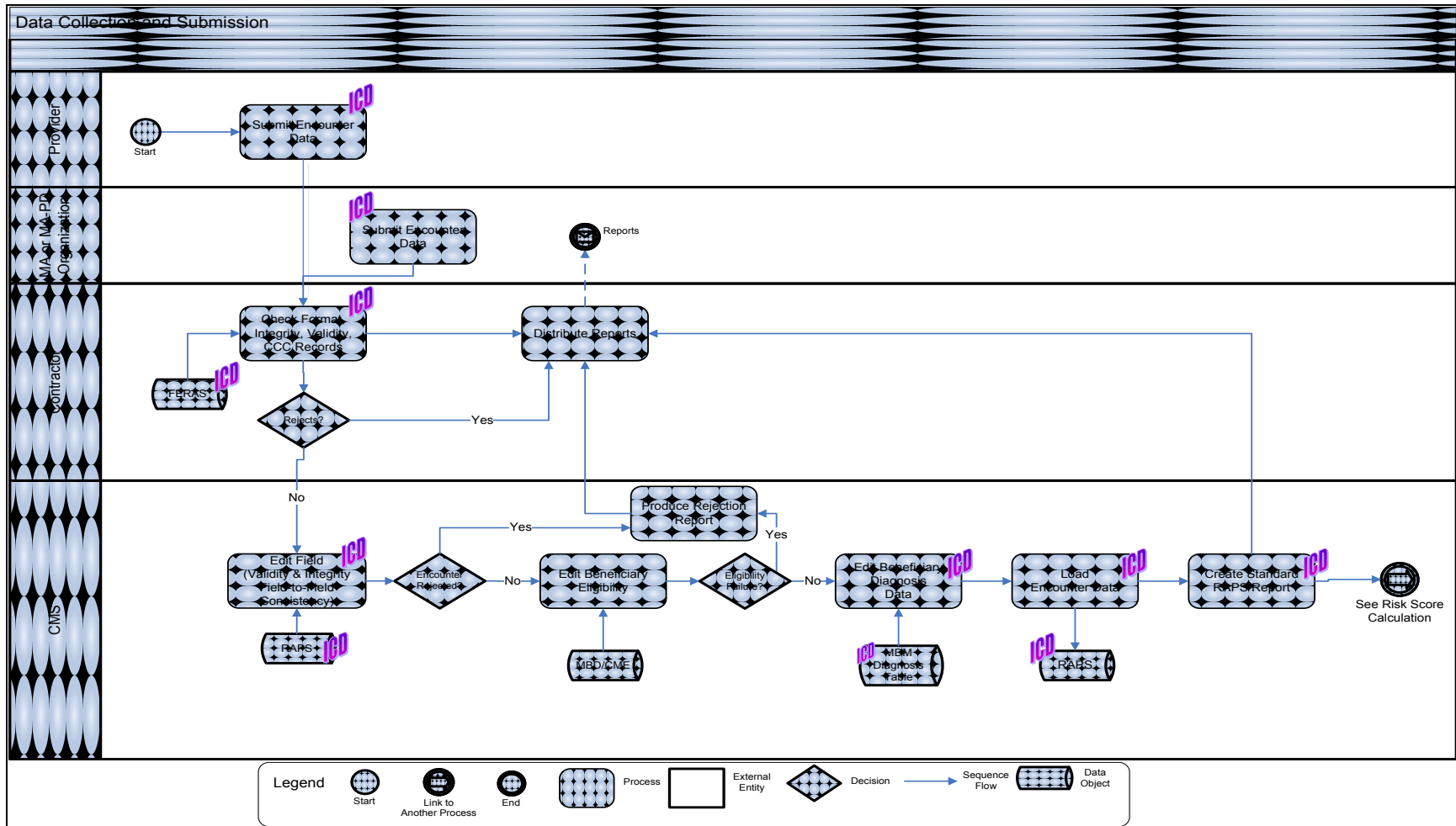


Figure R-3: Data Collection and Submission

Table R-12: Data Collection and Submission Business Process Description

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Encounter Data Submission	Provider submits beneficiary encounter data to MA plan	Provider	Part C rules	Encounter data	Submission of encounter data to FERAS	Yes	N/A
Rx data submission	Pharmacy submits prescription drug data to PDP/MA-PD	Pharmacy	Part D rules	Rx data	Submission of Rx data to FERAS	No	N/A
Front end editing	Contractor uses FERAS to edit the encounter data.	FERAS	FERAS edit rules	Encounter and Rx data	<ul style="list-style-type: none"> ▪ Edited encounter and Rx data sent to RAPS ▪ Data error report returned to MA Plan for correction 	Yes	FERAS

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
RAPS Processing	RAPS edits and validates encounter data.	RAPS	RAPS edit rules	Encounter and Rx data	<ul style="list-style-type: none"> ▪ RAPS data reports e.g., Return File Report, Transaction Error Report, Transaction Summary Report, Duplicate Diagnosis Cluster Report ▪ Valid plan data stored in RAPS ▪ Returned file to MA plans 	Yes	RAPS

Table R-13 provides an overview of the Risk Score Calculation process.

Table R-13: Risk Score Calculation Overview

Attribute	Value
Process Name	Risk Score Calculation
Process Description	<p>At a high level, the Risk Score Calculation works as follows:</p> <ul style="list-style-type: none"> • RAS calculates Risk Adjustment Factors (RAF) by executing risk algorithm models. RAS extracts data from several sources including MBD, MDM Diagnosis Table, NCH, and the Minimum Data Set (MDS). • RAF and Model Output Report (MOR) are loaded into MARx for Part C and D payment application. • MOR and Monthly Membership Reports (MMR) are made available to the MA Plans. • RA data is housed in the RAS ART reporting environment
Triggers	<p>The Risk Score Calculation process begins when:</p> <ul style="list-style-type: none"> • RAS extracts data from RAPS, MBD, MDM Diagnosis Table, NMUD, NCH, SAF, and MDS to initiate model runs to calculate RAFs.
Input	<p>The primary input(s) to Risk Score Calculation are:</p> <ul style="list-style-type: none"> • Data is extracted from RAPS, MBD, MDM Diagnosis Table, NMUD, NCH, SAF, and MDS.
Output	<p>The primary output(s) from Risk Score Calculation are:</p> <ul style="list-style-type: none"> • RAF • MOR • Model run data stored in RAS ART • MMR

Attribute	Value
Business Owner	The business owners of Risk Score Calculation: <ul style="list-style-type: none"> • CPC/MPPG
Related Processes	The following business processes are related to Risk Score Calculation: <ul style="list-style-type: none"> • Data Collection and Submission
Failures	If Risk Score Calculation does not function correctly, CMS may experience the following potential consequences: <ul style="list-style-type: none"> • Incorrect risk adjustment payments • Increase in appeals
Governing Legislation / Regulation	Specific policy documents include: <ul style="list-style-type: none"> • Medicare Manage Care Manual
Participants	Participants in Risk Score Calculation include: <ul style="list-style-type: none"> • CPC/MPPG • Analytics Support Contractor for model algorithm design and regression runs • OIS for SAF files • Support contractors for RAS, MARx, RAS ART, MDM Diagnosis Table, and RAPS
Timing	<ul style="list-style-type: none"> • Risk Score Calculation Timing • An Initial Model Run is typically performed in the fourth quarter of the previous year to determine initial risk adjustment scores • The Mid-year Model Run ,performed three months into the current year, updates the initial risk adjustment scores to adjust payments for those beneficiaries whose scores have changed since the initial model run • A Final Model Run is performed approximately in July-August following the payment year. This run creates the most accurate risk adjustment score. • A Rate Book Run creates the MA and PDP rate book for future years. Rate books contain county rates for MA and PDP capitation, demographic cost factors, HCC coefficients, and regional rate factors.

Attribute	Value
Additional Information	N/A
Referenced Documents	<i>ICD-10 Planning and Implementation Final Impact Report</i> , Foundation of Research and Education of AHIMA, September 15, 2008 Medicare Managed Care Manual – Chapter 8

Risk Score Calculation BPM

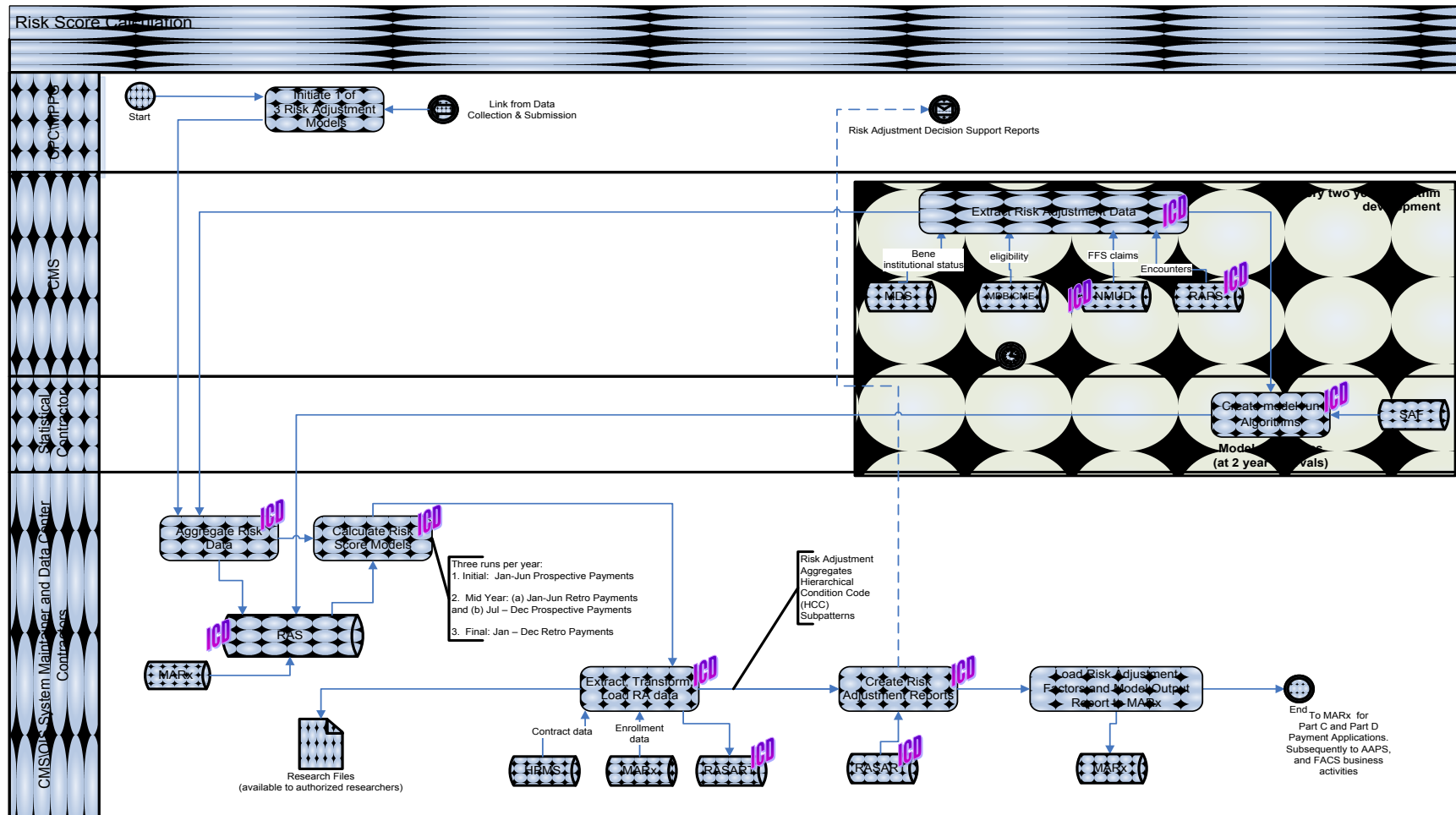


Figure R-4: Risk Score Calculation

Table R-14: Risk Score Calculation Business Process Description

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Initiate one of three risk adjustment model runs	For each payment year, risk adjustment data is included in three separate model runs (initial, mid-year, and final). CPC performs a fourth run to create the rate book for future years.	RAS	RAS processing rules	Risk score calculations	<ul style="list-style-type: none"> ▪ Initial Model Run typically performed in the fourth quarter of the previous year to determine initial risk adjustment scores ▪ Mid-year Model Run performed 3 months into the current year updates the initial risk adjustment scores to adjust payments for those beneficiaries whose scores have changed since the initial model run ▪ Final Model Run performed approximately in July-August following the payment year. Creates the most accurate risk adjustment score. ▪ Rate Book Run creates the rate book for future years. 	Yes	RAS

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Aggregate risk data	RAS extracts data from several sources including RAPS, MDB, MDS, NMUD, and MDM Diagnosis Table.	RAS	ETL data extract	Beneficiary data from MDB, Beneficiary diagnoses from RAPS, Beneficiary FFS data from NCH, institutional data from MDS	Data input for model runs.	Yes from RAPS and NCH	RAS MDB MDS NCH SAF MDM Diagnosis
Risk Scoring Models - Diagnoses Code Association	Diagnosis codes are associated with the correct beneficiaries since beneficiaries may be referenced using more than one beneficiary identifier in NMUD and RAPS.	RAS	Uniquely identify beneficiary	Beneficiary data from MBD	Correct associations between diagnosis codes and beneficiaries	No	MBD RAS
Risk Scoring Models - Cohort Grouping	Extracted data is divided into 3 different cohort groupings; FFS, Managed Care, and ESRD	RAS		Extracted Data	<ul style="list-style-type: none"> ▪ Extracted data in 3 cohort groups 	Yes	RAS

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Risk Adjustment Factor	The RAF and MOR data is loaded into MARx for Part C and D payment applications. MARx identifies individuals enrolled in an organization for a particular month. It then accesses the risk factor for each individual and multiplies the risk factor by the individuals state and county capitation rates. MARx calculates the correct demographic payment and then calculates the correct payment by blending the risk and demographic payments.	MARx	MARx blending rules	Risk scores	<ul style="list-style-type: none"> ▪ MARx risk and demographic payments 	No	RAS MARx

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
MOR and MMR data availability	MOR and MMR are made available to MA Plans. HCC data used by RAS is displayed. MMR data provides information to MA Plans for reconciling Medicare membership and payment records compared to records maintained by CMS.	RAS	RAS risk score algorithm	Risk score data	<ul style="list-style-type: none"> ▪ MOR report data ▪ MMR Medicare membership data 	No	RAS
Updating Model Run Data	Enrollment data from MARx and HPMS Plan contract data is added to the RAS model run data.	RAS	Interface format	MARx enrollment data HPMS Plan contract data	<ul style="list-style-type: none"> ▪ Updated model run data 	No	MARx HPMS
Risk adjustment data storage	RAS ART stores RA data. RAS ART also contains RAPS data and provides RA reports for MPPG.	RAS ART	ETL processes.	RA and RAPS data	<ul style="list-style-type: none"> ▪ Risk Adjustment reports 	Yes	RAS RAS ART RAPS

Table R-15 provides an overview of the Risk Adjustment Data Validation process.

Table R-15: Risk Adjustment Data Validation Overview

Attribute	Value
Process Name	Risk Adjustment Data Validation
Process Description	<p>At a high level, the Risk Adjustment Data Validation works as follows:</p> <ul style="list-style-type: none"> • Confirm discrepancies associated with payment, measure payment errors and identify problematic MA contracts. • Annual process of validating medical records to ensure a MA Plan’s risk adjustment diagnosis submitted for payment is based on clinical medical record documentation from a face-to-face patient/provider encounter, coded to <i>ICD-CM Official Guidelines for Coding and Reporting</i>
Triggers	<p>The Risk Adjustment Data Validation process begins when:</p> <ul style="list-style-type: none"> • Annual schedule for performing Payment Validation
Input	<p>The primary input(s) to Risk Adjustment Data Validation are:</p> <ul style="list-style-type: none"> • Data abstraction and statistical sample of beneficiaries whose medical records are selected for medical record review • Abstracted beneficiary data from MARx and HCC data from RAS
Output	<p>The primary output(s) from Risk Adjustment Data Validation are:</p> <ul style="list-style-type: none"> • Correct Plan Payment
Business Owner	<p>The business owners of Risk Adjustment Data Validation process are::</p> <ul style="list-style-type: none"> • CPC/MPPG

Attribute	Value
Related Processes	<p>The following business processes are related to Risk Adjustment Data Validation:</p> <ul style="list-style-type: none"> • Risk Score Calculation
Failures	<p>If Risk Adjustment Data Validation does not function correctly, CMS may experience the following potential consequences:</p> <ul style="list-style-type: none"> • Incorrect final payments for Part C encounters • Increase in appeals
Governing Legislation / Regulation	<p>Specific policy documents include:</p> <ul style="list-style-type: none"> • Medicare Managed Care Manual • ICD-CM Official Guidelines for Coding and Reporting
Participants	<p>Participants in Risk Adjustment Data Validation include:</p> <ul style="list-style-type: none"> • Medicare Technical Data Processing Support Contractor (TDPS) • Lead Analytic Contractors (LACs) • Medical Record Review Contractors (MRRCs) • MA Plans
Timing	<p>Risk Adjustment Data Validation Timing</p> <p><i>Conducted annually according to the DPV Annual Schedule for Performing Payment Validation</i></p>
Additional Information	N/A
Referenced Documents	<p><i>ICD-10 Planning and Implementation Final Impact Report</i>, Foundation of Research and Education of AHIMA, September 15, 2008</p>

Implement Risk Adjustment Data Validation BPM

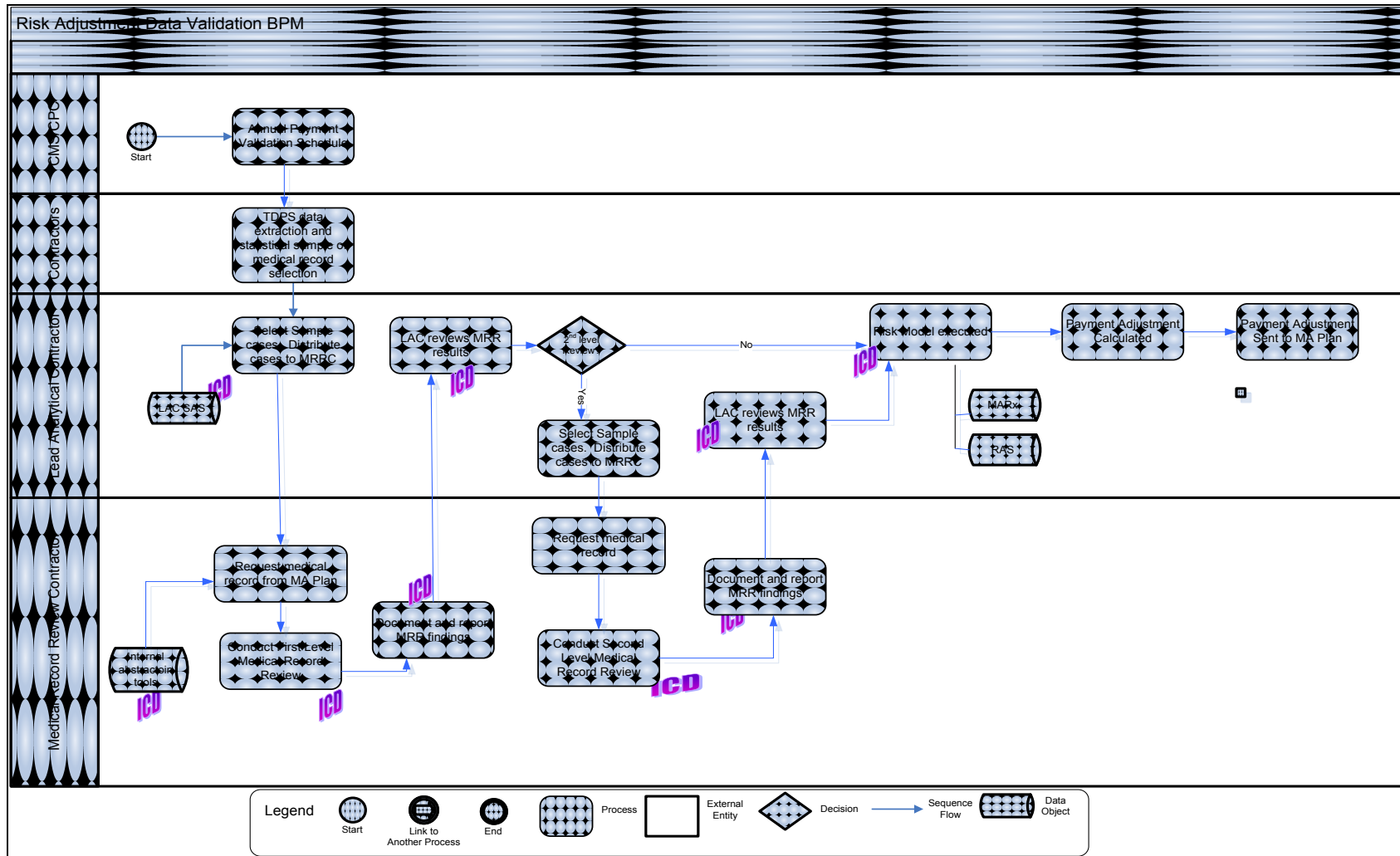


Figure R-5: Risk Adjustment Data Validation

Table R-16: Risk Adjustment Data Validation Business Process Description

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Sampling and Medical Record Request	Annual schedule. TDPS performs data abstraction and develops a statistical sample of beneficiaries from which medical records are selected for medical record review.	TDPS	Statistical sample algorithm	Beneficiary data	Medical Records sample cases selected for review	No	MARx RAS
Sampling and Medical Record Request	Sample selection is sent to LACs for analysis and action. LACs determine whether to perform one or two levels of medical record review LACs use their own Statistical Analysis Software (SAS) for analysis.	LACs	None	Sample case	Results of all medical record reviews	Yes	LAC SAS
Sampling and Medical Record Request	LACs distribute sample case list to Medical Review Contractor's (MRRC). MRRC request medical record from MA Plan.	MRRC	None	Sample case list	<ul style="list-style-type: none"> List of requested medical review 	No	SAS
Medical Record Review	MRRC receives record and conducts a first level Medical Record Review (MRR). MRRC returns results of review to LAC.	MRRC	ICD coding guidelines		<ul style="list-style-type: none"> Result of Medical Record Review 	Yes	SAS

Process Step	Description / Event Triggers	Performed By	Business Rules	Data Inputs	Data Outputs	ICD Codes	Supporting Systems
Medical Record Review	LAC determines if second review is necessary. If necessary sends record to second MRRC. Also include integrity check of small subset of records without discrepancies.	MRRC	ICD coding guidelines	Medical Record	<ul style="list-style-type: none"> Results of Medical Record Review 	Yes	SAS
MRR Findings and Contract Payment Adjustments	LAC analyzes MRR data in terms of ICD coding to determine correct or incorrect Plan payment. Model is executed to calculate the corrections and payment adjustment is calculated in MARx. The MA Plan receives the adjustment.	LAC	ICD coding guidelines	MRR data	<ul style="list-style-type: none"> Model Run 	Yes	RAS MARx

R.6 Systems Impacted by the Transition to ICD-10

This section documents the systems involved with Risk Adjustment, identifies where ICD codes are involved, and illustrates how the systems interact with one another. Table R-17 describes the systems that are involved in Risk Adjustment and outlines which will be impacted by the transition.

Table R-17: Risk Adjustment Systems

System Name	Description	Impacted by Transition to ICD-10? ¹²
FERAS	The Front-End Risk Adjustment System (FERAS) captures clinical encounter data from managed care plans. FERAS distributes reports for managed care plans.	Yes
RAPS	The Risk Adjustment Processing System (RAPS) edits, store and reports data. Reports generated include Return File Report, Transaction Error Report, Duplicate Diagnosis Cluster Report, and Error Frequency Report.	Yes
RAS	The Risk Adjustment System (RAS) is the primary application used for risk adjustment modeling. RAS uses data from FFS claims, MA, MARx, MDS, NCH, NMUD and HPMS. RAS calculates Risk Adjustment Factors and risk scores, which contain ICD codes.	Yes
RAS ART	The Risk Adjustment Analysis and Reporting Tool (RAS ART) is a database and reporting tool within RAS and stores model run data. It captures aggregated model run data from RAS and reports on plan submission and risk score metrics compared to benchmarks. RAS ART stores data from FERAS, MARx and RAPS and provides risk adjustment reports to MPPG.	Yes
MDM Diagnoses Table	This table provides ICD codes to RAPS. As noted previously MDM will be replaced by an equivalent table for ICD-10 diagnoses codes.	Yes

¹² Refer to Section R.3 for more information on ICD code usage for each system.

Figure R-6 is a system interaction diagram that illustrates the information flow for Risk Adjustment. The system interaction diagram is not a business process model that denotes activity sequence or decision points. The diagram is intended to highlight the Risk Adjustment systems and the information that flows between the systems. The diagram uses the “ICD” labels to indicate: (1) if a system stores ICD codes; and (2) if a system-to-system data exchange includes ICD codes.

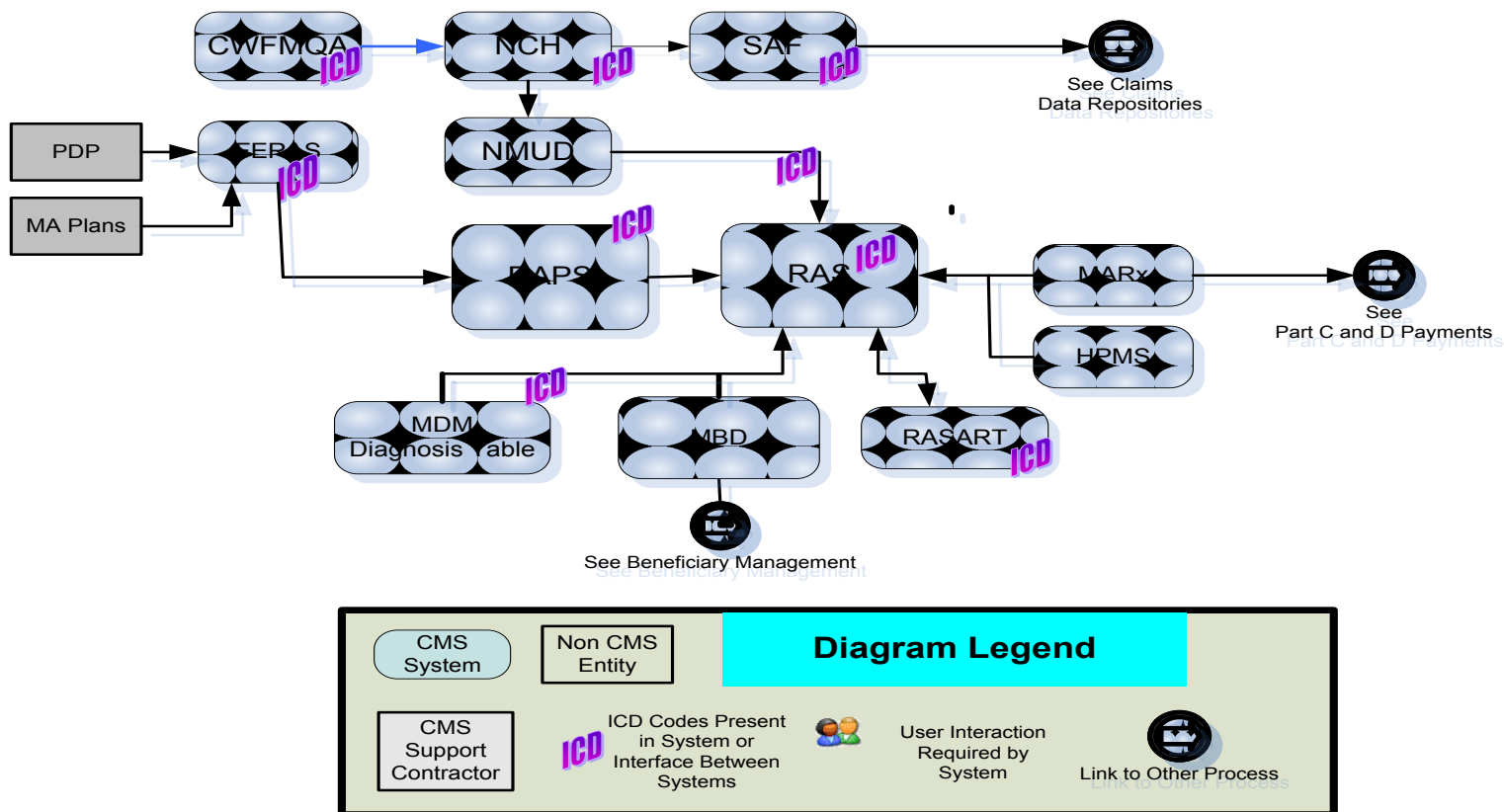


Figure R-6: Risk Adjustment System Interaction Diagram

R.7 Detailed Risk Adjustment Impact Assessments

This section includes details surrounding the impact of the transition to ICD-10 on Risk Adjustment policy, processes, and systems. The impact assessments are based on the framework outlined in Section III.3 Impact Analysis Approach of the *ICD-10 Impact Analysis*. For each area (policy, processes, and systems), Noblis identified the respective risks and the mitigation strategies. This information led to the identification of the transition and steady state efforts involved in mitigating the risks. Using this information, the Noblis team quantified the Transition Effort (TrE), Steady State Effort (SSE), Likelihood (L), and Severity (S) factors for each risk by associating a score to these areas. These scores are factored into the Work Effort (WE) score and the Risk (R) score, which when summed yield the Impact (I) score per risk. For more information regarding the Impact Analysis Framework, please refer to Section III.3.1 of the *ICD-10 Impact Analysis*.

R.7.1 Policy Impact Assessment

Table R-18 is a list of issues and risks that may have a negative impact on the Risk Adjustment Process after implementation of ICD-10 codes. The respective mitigation strategies and transition and steady state efforts are also described. The scoring for each factor involved in calculating the Impact is also included in the table.

Table R-18: Risk Adjustment Policy Impact Assessment¹³

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ¹⁴	S ¹⁵	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
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¹³ Work Effort (WE), Risk (R), and Impact (I) are scored differently; therefore while the numerical scores may be the same, the levels (high, moderate, low, etc.) may be different. Please refer to Section III.3.2: Impact Score Calculation of the ICD-10 Impact Analysis document for an explanation of the scoring.

¹⁴ L = Likelihood of Risk

¹⁵ R = Severity of Risk

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ¹⁴	S ¹⁵	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
POL #1	If CPC/MPPG creates new policies for risk adjustment that incorrectly address ICD coding, then algorithms, risk scores and payment calculation will be incorrect, leading to incorrect risk adjustments and payments to Part C and Part D plans. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update the ICD based grouping of diseases into the HCC and HCC-ESRD models.	Thorough review and update of risk adjustment policies and HCC grouping.	Monitor performance of risk scoring. Update the HCC models as necessary.	2	1	Mod 3	1	10	Cat 10	High 13	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ¹⁴	S ¹⁵	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
POL #2	The Medicare Managed Care Manual refers to the use of ICD-9 codes in the HCC models. If CMS does not update the Medicare Managed Care Manual with ICD-10 language, then the manual that external stakeholders use for reference may not have the correct information potentially causing misinterpretations and introductions of errors in models, resulting in improper payment to Part C and Part D plans.	Update the Medicare Managed Care Manual with appropriate ICD-10 language.	Thorough review and update Medicare Managed Care Manuals.	Continued update of Medicare Managed Care Manual as necessary.	2	1	Mod 3	1	3	Low 3	Mod 6	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ¹⁴	S ¹⁵	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
POL #3	The CMS website provides risk model diagnosis codes for external stakeholders. If CMS does not update these models for ICD-10, then MA plans may not have the correct information for risk adjustment, potentially resulting in increased appeals of risk adjustment since risk adjustment payments will not be what they were expecting.	Update Part D risk adjustment models and ICD-10 codes.	Thorough review and relevant testing of updated risk models.	Continued update and review of risk adjustment models.	2	1	Mod 3	2	3	High 6	Mod 9	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ¹⁴	S ¹⁵	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
POL #4	If the design of the algorithms stored in RAS do not allow for ICD-10 codes, then incorrect risk scores will be produced, leading to incorrect risk adjustments and payments to Part C and Part D plans. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Translate ICD-9 codes in specifications and algorithms stored in RAS to correct ICD-10 codes.	Review all specifications and algorithms stored in RAS/ to correct ICD-10 codes.	Monitor and test updates to algorithms.	2	1	Mod 3	2	10	Cat 10	High 23	CPC/MPPG

R.7.2 Process Impact Assessment

Table R-19 includes the risk that may have a negative impact on Risk Adjustment processes during the transition to ICD-10 codes. The respective mitigation strategies and transition and steady state efforts are also described. The scoring for each factor involved in calculating the Total Impact is also included in the table.

Table R-19: Risk Adjustment Process Impact Assessment¹⁶

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #1	MA and PDP contractors must update their front-end data collection processes to incorporate ICD-10 coding. If this is done incorrectly, then format, data integrity, and validity edits will be incorrect resulting in inaccurate data being generated for risk adjustment analysis and incorrect Part C and Part D payments.	Design, test, implement, and maintain updates to the front end risk adjustment process.	Design, implement, test, and maintain updates to the front end risk adjustment process.	Monitor accuracy of front end editing. Update editing process if necessary.	3	1	Mod 4	2	10	Cat 20	High 24	CPC/MPPG

¹⁶ Work Effort (WE), Risk (R), and Impact (I) are scored differently; therefore while the numerical scores may be the same, the levels (high, moderate, low, etc.) may be different. Please refer to Section III.3.2: Impact Score Calculation of the ICD-10 Impact Analysis document for an explanation of the scoring.

¹⁷ L = Likelihood of Risk

¹⁸ S = Severity of Risk

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #2	Risk Adjustment Extraction Processes must be updated to obtain data from sources such as NCH, NMUD, MA Plans, and PDP. If the extraction process is not changed to incorporate ICD-10 codes, then risk adjustment data will be incorrect. This will cause errors in risk scoring models and Part C and Part D plan payments.	Design, test, implement, and maintain interfaces from external front end data sources.	Design, implement, test, and maintain interfaces from external front end data sources.	Monitoring of interfaces from external front end data sources.	3	1	Mod 4	2	2	Mod 4	Mod 8	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #3	Processes for creating new risk model algorithms, risk scores, and risk adjustment reports must be updated. If the algorithms are not changed to incorporate ICD-10 codes, then risk adjustment data and risk scores will be incorrect, resulting in incorrect payment for Part C and Part D plans. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, implement, and maintain new risk algorithms.	Design, implement, test, and maintain new risk algorithms.	Monitoring of updates to risk algorithms.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #4	If CMS does not ensure that the statistical contractor and Medical Record Review contractors translate ICD-9 codes to ICD-10 codes correctly in their algorithms and review process, then incorrect information will be available for the risk adjustment process and risk models may be invalid, resulting in inaccurate plan payments.	Provide assistance and oversight to contractors as they modify algorithms and review processes for correct translations to ICD-10.	Provide assistance and oversight to contractors as they modify algorithms and review processes for correct translations to ICD-10.	Monitoring of updates to risk algorithms.	3	1	Mod 4	2	3	High 6	Mod 10	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #5	MA Plans and PDPs must capture ICD-10 codes correctly for patient encounter data. If they do not capture ICD-10 codes correctly when sending CMS encounter data and information, then CPC may not have the correct data for the risk scoring, resulting in inaccurate payments. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Educate MA Plan and PDPs on the increased granularity and use of the ICD-10 code set and the importance of utilizing the correct code.	Educate MA Plans and PDPs on the increased granularity and use of the ICD-10 code set and the importance of utilizing the correct code.	Monitor updates to interfaces.	2	1	Mod 3	2	10	Cat 20	Mod 23	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #6	Medicare FFS claims processing must capture ICD-10 codes correctly from patient encounters. If the Medicare FFS process (e.g., claims from providers, physicians, suppliers, etc.) does not capture ICD-10 codes correctly when sending CMS claims data and information, then CPC may not have the correct data for the risk scoring, resulting in inaccurate plan payment. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Communicate with OIS to keep apprised of when FFS claims systems are ICD-10 ready.	Communicate with OIS to keep apprised of when FFS claims systems are ICD-10 ready.	Communicate with OIS as required to keep abreast of updates.	3	1	Mod 4	2	10	Cat 20	High 24	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #7	If CMS does not ensure that external vendors and system maintainers have appropriate knowledge of ICD-9 to ICD-10 translation, then vendor-supplied software for collecting and storing and reporting on risk data will be incorrect and payment calculations will be incorrect.	Provide information to external vendors on ICD-9 to ICD-10 translations.	Provide information to external vendors on ICD-9 to ICD-10 translations.	Update educational materials for evolving changes in ICD-10.	3	1	Mod 4	2	10	Cat 20	High 24	CPC/MPPG
PRO #8	The process for validating Part C risk adjustment diagnoses is based on clinical medical record documentation. If these processes do not incorporate ICD-10 coding, then medical review may not accurately assist with validating risk scores, resulting in inaccurate risk adjustment and payment.	Update the Medical Record and Validation processes for ICD-10.	Update the Medical Record and Validation processes for ICD-10.	Update processes pending future updates to ICD-10 coding.	3	1	Mod 4	2	3	High 6	Mod 10	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (E) = TrE + SSE	L ¹⁷	S ¹⁸	Risk (R) = L*S	Impact (I) = E + R	Risk and Work Owner
PRO #9	MA Plans can appeal risk adjustment decisions. CMS will need to maintain historical data containing both ICD-9 and ICD-10 codes for a period of five years. If the risk adjustment systems cannot store ICD-9 and ICD-10 codes, then CMS will not be able to adjudicate risk adjustment appeals properly, resulting in increased costs from incorrect appeals decisions or grievances.	Build the capability to store both ICD-9 and ICD-10 code sets in FERAS, RAPS, RAS, RAS ART, and the MDM Diagnosis Table.	Build the capability to store both ICD-9 and ICD-10 code sets in FERAS, RAPS, RAS, RAS ART, and the MDM Diagnosis Table.	None	2	1	Mod 3	2	2	Mod 4	Mod 7	CPC/MPPG

R.7.3 System Impact Assessment

Table R-20 includes the risks that may have a negative impact on Risk Adjustment systems during the transition to ICD-10 codes. The respective mitigation strategies and transition and steady state efforts are also described. The scoring for each factor involved in calculating the Total Impact is also included in the table.

Table R-20: Risk Adjustment System Impact Assessment¹⁹

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #1	If FERAS cannot accommodate the longer ICD-10 codes, then it will not be able to accept or accurately validate encounter data from providers and MA/PD plans, resulting in incorrect risk adjustment and plan payment.	Update FERAS data model and business logic for ICD-10 codes.	Submit a change request through appropriate MAPD Change Control Board. Design, test, and implement updated FERAS.	Monitor the accuracy and performance of FERAS and troubleshoot as necessary.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG

¹⁹ Work Effort (WE), Risk (R), and Impact (I) are scored differently; therefore while the numerical scores may be the same, the levels (high, moderate, low, etc.) may be different. Please refer to Section III.3.2: Impact Score Calculation of the ICD-10 Impact Analysis document for an explanation of the scoring.

²⁰ L = Likelihood of Risk

²¹ S = Severity of Risk

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #2	If RAPS cannot accommodate the longer ICD-10 codes, then it will not be able to accept or store data from FERAS and the MDM diagnoses table. This would prevent the establishment of risk scoring models, resulting in incorrect risk adjustment and plan payment.	Update RAPS data model and business logic for ICD-10 codes.	Submit a change request through appropriate MAPD Change Control Board. Design, test, and implement updated RAPS.	Monitor the accuracy and performance of RAPS and troubleshoot as necessary.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #3	If RAS cannot accommodate the longer ICD-10 codes, then it will not be able to accept or store risk data from data repositories, RAPS, MARX, and HPMS and will not calculate risk scores correctly and incorrect plan payment. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update RAS data model and business logic for ICD-10 codes.	Submit a change request through appropriate MAPD Change Control Board. Design, test, and implement updated RAS.	Monitor the accuracy and performance of RAS and troubleshoot as necessary.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #4	If RAS ART cannot accommodate the longer ICD-10 codes, then it will not be able to accept or store risk data and generate risk adjustment reports accurately. As a result, incorrect and inadequate risk adjustment information would be provided to users of the reports.	Update RAS ART data model and business logic for ICD-10 codes.	Submit a change request through appropriate MAPD Change Control Board. Design, test, and implement updated RAS ART.	Monitor the accuracy and performance of RAS ART and troubleshoot as necessary.	2	1	Mod 3	2	3	High 6	Mod 9	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #5	If the MDM Diagnosis Table cannot accommodate the longer ICD-10 codes, then it will not be able to store or provide ICD-10 information to RAS. This would affect the risk scoring process and could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update MDM Diagnosis Table data model and business logic for ICD-10 codes.	Submit a change request through appropriate MAPD Change Control Board. Design, test, and implement updated MDM Diagnosis Table.	Monitor the accuracy and performance of MDM and troubleshoot as necessary.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #6	The interface between RAS and the NMUD data repositories includes ICD codes. If the interface is not updated for ICD-10, then the risk score calculation will not function and payment calculation will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated interfaces.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD) with updated technical specifications. Develop and test the new interfaces.	Monitor the accuracy and performance of the interface and troubleshoot problems as necessary.	2	1	Mod 3	2	3	High 6	Mod 9	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #7	RAS will need to continue using ICD-9 codes for five years after ICD-10 implementation. If RAS is unable to: (a) accept both ICD-9 and ICD-10 codes from the feeder systems; and (b) use ICD-9 codes for retroactive scenarios, then risk scoring and payments will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update RAS to include the ability to accept both ICD-9 and ICD-10 codes.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD). Design, test, and implement updated RAS. Design and implement the ability for RAS to use ICD-9 and ICD-10 codes.	Monitor the accuracy and performance of RAS and troubleshoot as necessary.	2	1	Mod 3	2	3	High 6	Mod 9	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #8	If RAS does not update its business rules for ICD-10 codes correctly, then risk scores and payments may be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Update RAS business rules for ICD-10.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD). Design, test, and implement updated RAS business rules.	Monitor the accuracy and performance of RAS processes and troubleshoot as necessary.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #9	RAS constructs the risk scores based partly on FFS claims history. The claims history prior to ICD-10 implementation will have ICD-9 codes, while post implementation, claims will have ICD-10 codes. If RAS cannot separately construct risk scores using ICD-9 and ICD-10 records, then risk adjustments and risk scores will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	The RAS system maintainer will need to update any logic that creates risk scores across ICD-9 and ICD-10 records.	Submit a change request through appropriate MAPD Change Control Board. Design, test, and implement updated RAS logic.	Monitor the accuracy and performance of RAS and troubleshoot as necessary.	2	1	Mod 3	2	3	Mod 6	Mod 9	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #10	The interface between RAS and RAPS includes ICD codes. If the interface is not updated for ICD-10, then the risk score calculation will not function and payment calculation will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated interfaces.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD) with updated technical specifications. Develop and test the new interfaces.	Monitor the accuracy and performance of the interface and troubleshoot problems as necessary.	2	1	Mod 3	1	10	Cat 10	High 13	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #11	The interface interaction between RAPS and MDM includes ICD codes. If the interface is not updated for ICD-10, then the risk score calculation and risk adjustment reports will not function correctly. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated interfaces.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD) with updated technical specifications. Develop and test the new interfaces.	Monitor the accuracy and performance of the interface and troubleshoot problems as necessary.	2	1	Mod 3	1	3	Low 3	Mod 6	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #12	The interface between RAS and RAS ART includes ICD codes. If the interface is not updated for ICD-10, This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated interfaces.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD) with updated technical specifications. Develop and test the new interfaces.	Monitor the accuracy and performance of the interface and troubleshoot problems as necessary.	2	1	Mod 3	1	3	Low 3	Mod 6	CPC/MPPG

#	Risk Description	Mitigation Strategy	Transition Effort (TrE) Description	Steady State Effort (SSE) Description	TrE	SSE	Work Effort (WE) = TrE + SSE	L ²⁰	S ²¹	Risk (R) = L*S	Impact (I) = WE + R	Risk and Work Owner
SYS #13	CMS provides software related to risk adjustment on its website in the <i>Medicare Advantage Special Rates</i> area. CMS provides software for CMS-HCC Model Software, CMS-HCC-ESRD Model Software, and Rx Risk Adjustment software. If CMS does not update this software for ICD-10, then the risk score calculation will not function and payment calculation will be incorrect. This could introduce uncertainty as to whether on average payments or premiums are accurate for beneficiaries at any given level of expected cost (i.e. risk) and result in overpayment or underpayment to MA and PDP plans. In addition, trend analysis of plan performance and beneficiary care may be incorrect.	Design, test, and implement updated HCC and Rx Risk adjustment software.	Submit a change request through appropriate MAPD Change Control Board. Update the Interface Control Document (ICD) with updated technical specifications. Develop and test the new updated software.	Monitor the accuracy and performance of the updated software and troubleshoot problems as necessary.	2	1	Mod 3	2	10	Cat 20	High 23	CPC/MPPG