3M Science.
Applied to Life.™

Breakfast and brainstorm:
Meet the experts: PPEs (PPR, PFP, PPC) & AM-PPC

David Gannon, 3M HIS

Peter Musimami, 3M HIS

Jocelyn Gunn, 3M HIS

Lisa Turner, 3M HIS

Miki Patterson, 3M HIS

Dana Casey, 3M HIS

July 26, 2022

Health Policy Executive Summit 2022

Potentially Preventable Events

Agenda

1. Value Prop/Use Case

2. Intro to Methodology

3. What's Next?

The information presented herein contains the views of the presents and does not imply a formal endorsement for consultation engagement on the part of 3M. Participants are cautioned that information contained in this presentation is not a substitute for informed judgement. The participant and/or participant's organization are solely responsible for compliance and reimbursement decisions, including those that may arise in whole or in part from participant's use of or reliance upon information contained in the presentation. 3M and the presenters disclaim all responsibility for any use made of such information.

3M is sponsoring the following educational course. This presentation was prepared and authored by _____ All trademarks displayed are the property of their respective owners. 3M and its authorized third parties will use your personal information according to 3M's privacy policy (see Legal link). This meeting may be recorded. If you do not cons ent to being recorded, please exit the meeting when the recording begins.

3M

Meet the speakers

Jocelyn Gunn – Clinical Analyst

Jocelyn has been with 3M for 5 years working on PPCs and PFPs, championing continuous improvement in clinical classification logic/methodology to improve health outcomes. Jocelyn has a background and license in mental health and substance use counseling and a decade of working with underserved communities with a focus on SDOH.

Peter Musimami – Product Owner

Peter has been with 3M for 4 years and has over 10 years background in Healthcare Product development with experience delivering software to achieve the triple aim of value-based healthcare. Peter is the product owner of PPCs and PFPs since 2022.

3M

Meet the speakers

Lisa Turner – Clinical Analyst

Lisa has been working on 3M patient classification methodologies dating back to 1994 with National Association of Children's Hospital and Related Institutions (NACHRI). Lisa joined 3M in 2014 and in 2016 joined the team that actively manages longitudinal software development for CRG, PFE and PPR.

David Gannon - Product Owner and Engineer

David has been working on 3M patient classification methodologies dating back to 1996 when he joined 3M. In 2016 he formed the team that actively manages longitudinal software development for CRG, PFE and PPR. He has been serving as product owner of 3M Population Health methodologies since 2019.

3M

Value prop/Use case

PPEs: Potentially Preventable Events Including;
   - Potentially Preventable Readmissions (PPR) & Revisits to ED (PPR ED)
   - Potentially Preventable Complications (PPC)
   - Population-focused Preventables (PFP)
         Potentially Preventable Admissions (PPA)
         Potentially Preventable Visits (PPV)
         Potentially Preventable Services (PPS)

The 3M approach to potentially preventable events

- The focus is on adverse outcomes that are potentially preventable, are meaningful for patients, and are expensive for the health care system

- Overall rates, not individual events

- Not all events are preventable, but meaningful reductions can be achieved, saving money and improving health

- Comparisons always case-mix adjusted
  - PPCs and PPRs/ PPR ED by APR DRGs
  - PPAs, PPVs, PPSs by Clinical Risk Groups

- We compare actual PPE rates with expected PPE rates, where expected rates depend on the case-mix of the health plan, hospital, or other population

Example of Potentially Preventable Admission A/E calculations			
	Actual PPAs	Expected PPAs	A / E
High Acuity MCO	100	120	0.83
Low Acuity MCO	100	80	1.25
All MCOs	**200**	**200**	**1.00**

- A/E ratios > 1.00 => worse than expected

- A/E ratios < 1.00 => better than expected

- "A/E ratios," "Actual minus expected," and "risk adjusted rates per 1,000 beneficiaries" are merely alternative presentations of the same concept

3M

Incentive Payments using Potentially Preventable Readmissions (PPR)/Revisits to Emergency Department (PPR ED)

- The Mississippi Medicaid Quality Incentive Payment Program measures hospital performance on PPRs and PPR EDs, combining into a PPHR metric

- PPR EDs about as frequent as PPRs – though PPRs more significant clinically and financially

- PPRs and PPR EDs are also measures of population health (e.g., ACO performance)

Source: Mississippi Division of Medicaid, Quality Incentive Payment Program: Potentially Preventable Readmissions Methodology Supplement (October 2019). https://medicaid.ms.gov/wp-content/uploads/2020/01/MS-QIPP-Readmissions-Methodology-Supplement-2019-09.pdf

Mississippi Medicaid Potentially Preventable Returns to Hospital after an Inpatient Stay: Readmission and ED Visit

Table 4.1
Statewide Performance During the Baseline Period by Medicaid Care Category

Medicaid Care Category	Number of Patients	At-Risk Stays	PPHR Rate	At-Risk Stays	PPR Rate	At-Risk Stays	PPED Rate
Adult misc	6,794	8,555	16.8%	8,555	7.6%	8,999	10.4%
Adult mental health	2,890	4,189	17.2%	4,189	9.2%	4,558	9.8%
Adult circulatory	2,147	2,784	20.6%	2,784	9.9%	2,983	12.0%
Adult gastroent	1,857	2,195	21.0%	2,195	10.0%	2,358	12.0%
Adult respiratory	1,677	2,126	17.7%	2,126	9.2%	2,309	9.4%
Adult transplant	2	2	0.0%	2	0.0%	2	0.0%
Adult subtotal	**13,574**	**19,851**	**18.0%**	**19,851**	**8.7%**	**21,209**	**10.6%**
Pediatric mental health	4,278	5,351	8.2%	5,351	5.7%	5,613	2.7%
Pediatric misc	3,364	3,793	9.3%	3,793	3.3%	3,853	6.0%
Pediatric respiratory	2,400	2,650	5.6%	2,650	2.1%	2,678	3.6%
Pediatric transplant	-	-	0.0%	-	0.0%	-	0.0%
Pediatric subtotal	**9,830**	**11,794**	**8.0%**	**11,794**	**4.1%**	**12,144**	**4.0%**
Rehab	38	39	5.1%	39	0.0%	39	5.1%
Total	**23,420**	**31,684**	**14.2%**	**31,684**	**7.0%**	**33,392**	**8.2%**

Note:

1. Patients may have at-risk inpatient admissions, inpatient readmissions and/or ED visits in more than one Medicaid Care Category. For this reason, the total number of patients is lower than the sum of patients across Medicaid Care Categories.

Addressing Severe Maternal Morbidity - Potentially Preventable Complications (PPCs)

- **50,000 severe maternal morbidity events per year and increasing**
- **Overwhelmingly occurs in Medicaid population**
- **Enormous priority area for Medicaid policy - particularly given racial inequities**

- **CDC defines list of 21 SMM indicators including blood transfusions, embolism, shock, sepsis, renal failure, MI, hysterectomy**
- **PPCs capture 86% of the CDC list**
- **PPAs capture 2 of the remaining 3 – heart failure and aneurysm; and soon the third, pre-eclampsia**

- **PPCs go far beyond CDC list – CDC implicated 30 PPCs ; 3M tracks an additional 30 more**
- **We have a fully risk-adjusted, operational ability to examine maternal morbidity**
- **States can examine variation not only by provider & system but also race, geography**
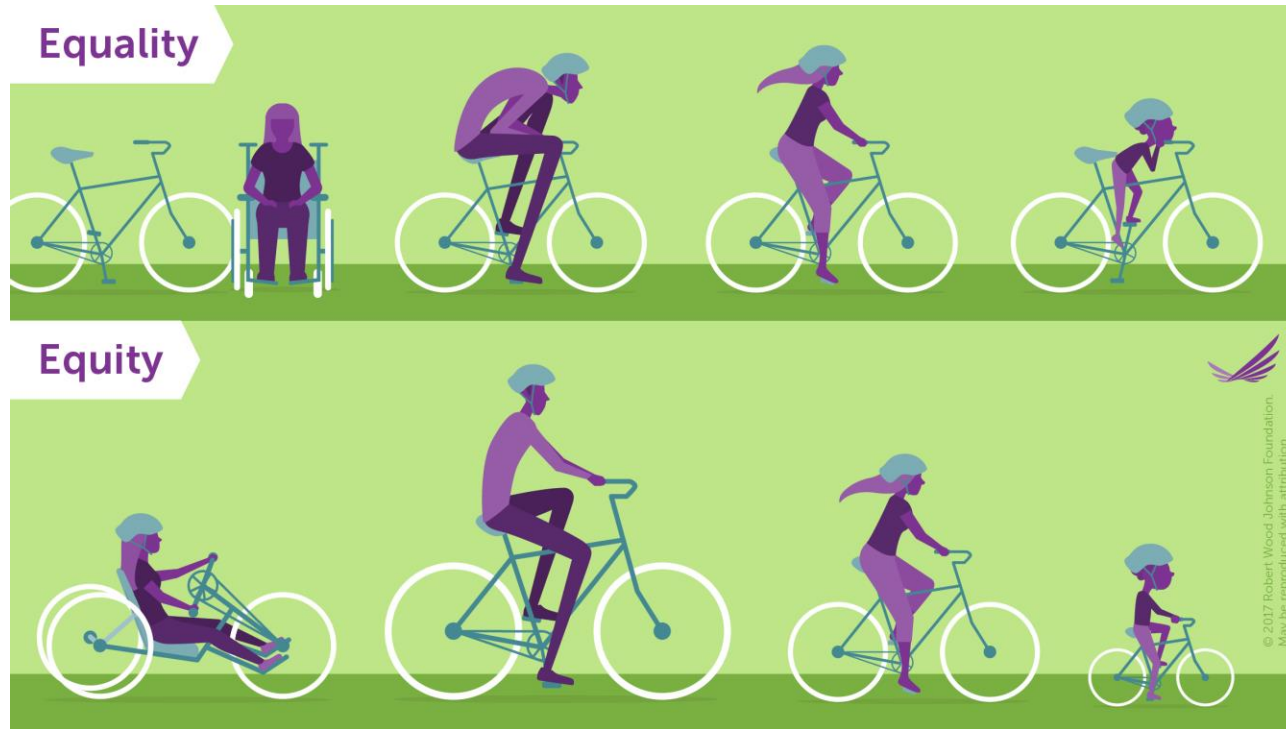
Paying for outcomes: : reporting and reducing PPAs in Texas

Interconnected Health Plan Initiatives

➢ Health Plan Pay for Quality: 3% of Health Plan capitation at risk; PPV, PPA, PPR performance is at the core of the program

➢ Value Based Enrollment Algorithm: Health Plans can gain or lose default enrollees based on "value scores"; PPV, PPA, PPR is part of value scoring , as well as risk adjusted cost and report card scores

➢ Health Plan Value Based Contracting: Requirements for Health Plans to increase alternative, value-based payment models with providers; to succeed in initiatives listed above, Health Plans must focus on PPE reductions in their contracting/ models

➢ Reductions in PPEs save $ and hit Health Plans bottom line!

Equality

Equity

© 2017 Robert Wood Johnson Foundation. May be reproduced with attribution.
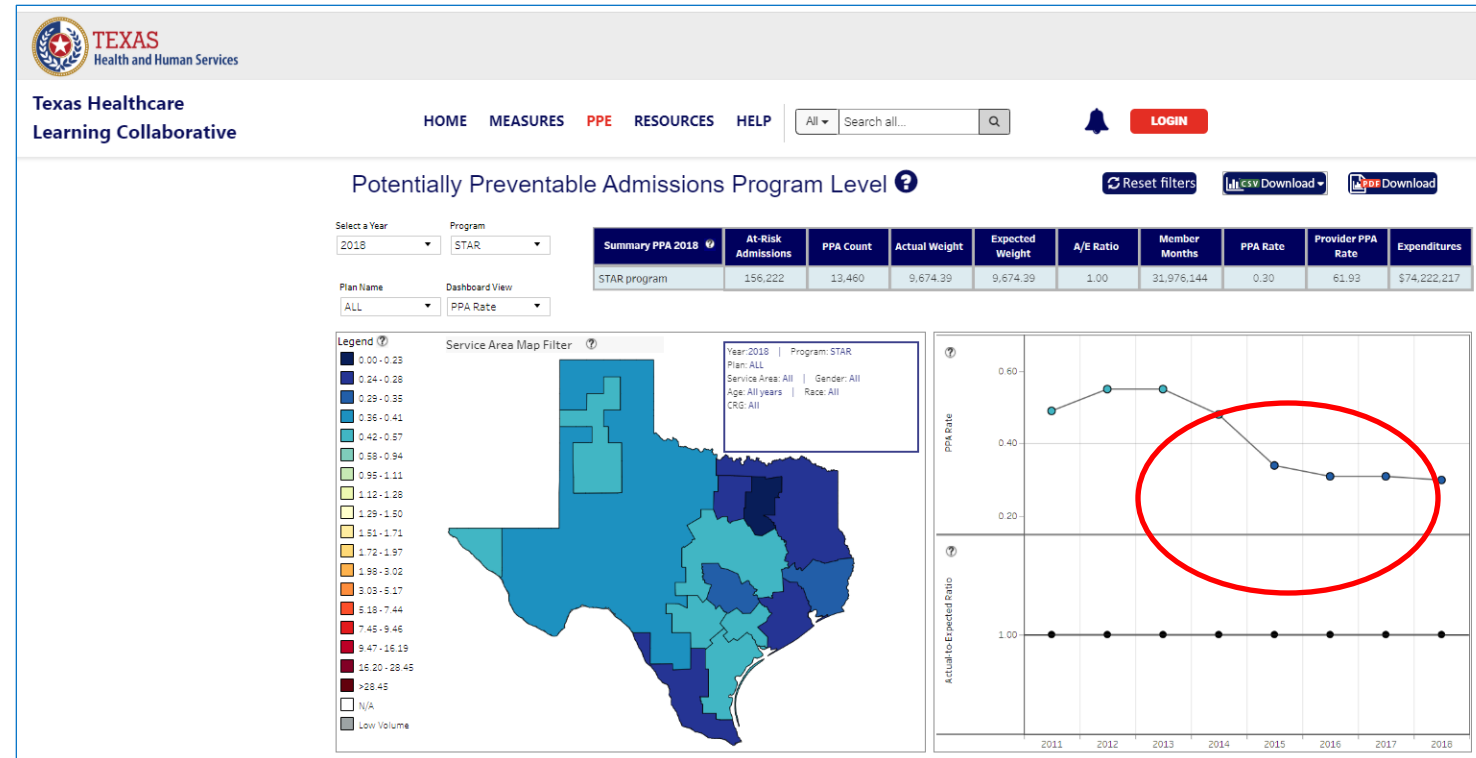
- When hospitals have incurred a large volume of Potentially Preventable Admissions (PPA) and Potentially Preventable ED Visits (PPV), it can be a sign that members did not have alternative options or access to adequate primary care.

- An understanding of PPEs allows policy makers and payers to drill into population health data to examine how variation is correlated with social needs and demographics such as race and ethnicity allowing for evidence-based interventions, such as extended office hours or mobile outreach where transportation might be lacking.

- A preponderance of these events can also be an issue with care management in the area and perhaps a good location for an accountable care arrangement.

3M

Understanding the methodology

3M Potentially Preventable Readmissions (PPR)/ Revisits to Emergency Department (PPR ED)

PPR / PPR ED Definitions

A readmission / return to the ED within a specified time interval that is clinically related to the initial hospital admission which clinical panels determined could have been avoided through

- Excellent quality of care in the initial admission
- Good discharge planning
- Effective Follow up care

PPR/PPR ED Exclusions

Rate Based System: designed to evaluate and compare actual to expected rates.

Not All Cause: excludes complex and unavoidable conditions, transfers and other incomplete stays, i.e., malignancy, extreme premature neonates, rehab, transfers, LAMA.

Risk Adjustment

- Comparison of actual rate in the study population with an expected rate from a reference population
- The expected rate is risk adjusted by the incidence of PPRs and PPR EDs by the discharge APR DRG and severity of illness of the <u>initial</u> stay in the reference population
- Patient age and the presence of a major mental health or substance abuse comorbidity may also affect the expected rate

PPR Examples

PPRs are identified by comparing the APR DRG of the readmission with the APR DRG of the initial admission.

Potentially Preventable Readmission

- Admission 1: APR DRG 139 Other Pneumonia
  Admission 2 : APR DRG 139 Other Pneumonia

- Admission 1: APR DRG 139 Other Pneumonia
  Admission 2 : APR DRG 194 Heart Failure

Not a Potentially Preventable Readmission

- Admission 1: APR DRG 139 Pneumonia
  Admission 2 : APR DRG 340 Fracture of Femur

- Admission 1: APR DRG 136 Respiratory Malignancy
  Admission 2 : APR DRG 139 Other Pneumonia

PPR ED Examples

PPR EDs are identified by comparing the medical APR DRG of the ED visit with the APR DRG of the initial admission.

Potentially Preventable Revisit to ED

- Admission 1: APR DRG 139 Other Pneumonia
  ED Visit 1: APR DRG 139 Other Pneumonia

- Admission 1: APR DRG 139 Other Pneumonia
  ED Visit 1: APR DRG 194 Heart Failure

Not a Potentially Preventable Revisit to ED

- Admission 1: 139 Pneumonia
  ED Visit 1: 844 Partial Thickness Burn

- Admission 1: 136 Resp. Malignancy
  ED Visit 1: 139 Pneumonia

Potentially Preventable Complications (PPCs)

Definition

Harmful events (e.g., accidental laceration during a procedure, improper administration of medication) or negative outcomes (e.g., hospital-acquired pneumonia, sepsis) that develop after hospital admission and may result from processes of care and treatment rather than from natural progression of the underlying illness and are therefore potentially preventable.

Risk Adjustment

- Comparison of actual rate in the study population with an expected rate from a reference population
- The expected rate is risk adjusted by the incidence of the PPC by <u>admission</u> APR DRG and severity of illness in the reference population

Examples

57 Potentially Preventable Complications

- PPC 4 Acute Pulmonary Edema and Respiratory Failure with Ventilation
- PPC 6 Aspiration Pneumonia
- PPC 16 Venous Thrombosis
- PPC 33 Cellulitis
- PPC 35 Septicemia and Severe Infections
- PPC 39 Reopening Surgical Site
- PPC 47 Encephalopathy

PPCs must not be present on admission, as measured by the POA indicator on the claim and extensive additional logic used in assigning the admission APR DRG

3M

3M™ Population-focused Preventables (PFPs)

PPA Definition

Hospital admissions that could potentially have been dealt with in the outpatient setting. These hospital admissions may result from hospital and ambulatory care inefficiency, lack of adequate access to outpatient care, or inadequate coordination of ambulatory care services.

PPV Definition

Emergency department visits for conditions that could otherwise be treated by a care provider in a non-emergency setting. PPVs could also result from a lack of adequate care or ambulatory care coordination, such as access to an urgent care facility, availability of primary care physicians, etc.

PPS Definition

High-cost ancillary services that may not provide useful information for diagnosis or treatment, and therefore have no effect on clinical management. They include diagnostic tests, laboratory tests, therapy services, radiology services and pharmaceuticals that may be redundant or are not reasonably necessary for providing care or treatment.

Risk Adjustment

- Comparison of actual rate in the study population with an expected rate from a reference population

- The expected rate is risk adjusted by health status of individual population members using 3M Clinical Risk Groups (ACRG 3)

PPA Examples

General population
- 41 APR DRGs (some split by diagnosis)
- Examples: seizure, COPD, diabetes

Members of established integrated health delivery systems
- 41 + 59 APR DRGs
- Examples of additions: amputations, sickle cell crisis, depression

Members in residential nursing care facilities
- 41 + 59 + 26 APR DRGs
- Examples of additions: trauma, respiratory failure, septicemia

PPV Examples

General population
- 196 EAPGs (some split by diagnosis)
- Examples:
  - EAPG 562 Infections of Upper Respiratory Tract and Otitis Media
  - EAPG 575 Asthma

Members in residential nursing care facilities
- 196 + 7 = 203 EAPGs
- Examples of additions:
  - EAPG 676 Decubitus ulcer
  - EAPG 805 Septicemia and disseminated infections

PPS Examples

PPSs are defined by the combination of the service (categorized by EAPG) and indication (categorized by Diagnostic Subgroup)

- EAPG 136 Diagnostic Lower GI Endoscopy
  DSG 930401 Nausea, Vomiting, Diarrhea
- EAPG 270 Occupational Therapy
  DSG 900602 Vascular Dementia
- EAPG 294 MRI-Back
  DSG 937301 Other Back and Spine Diagnoses
- EAPG 211 Electroencephalogram
  DSG 904001 Headache

# What's next?

What's next – PPR/PPR ED, PPC

Methodology	Value	Detail
Potentially Preventable Readmissions /revisits to the Emergency Department(PPR/PPR ED)	Enhanced specificity, Further refinement of PPR logic	• Updated to APR v40 • Clinical enhancements and VOC (e.g., neonatal jaundice removed as PPR) • FY 2023 ICD-10-CM/PCS codes
Potentially Preventable Complications (PPC)	Enhanced specificity, Further refinement of PPC logic	• Updated to APR v40 • Updates to Present On Admission (POA) exempt logic • FY 2023 ICD-10-CM/PCS codes

What's next – PFP – PPA, PPV, PPS

Methodology	Value	Detail
Potentially Preventable Admissions (PPA)	- Optimization of population type identification	• Trauma logic added for Residential Nursing Facilities (RNF) based on the Principal Diagnosis (PDX) • Integrated Delivery System (IDS) logic revised • Clinical content and VOC to output the service line subcategory
Potentially Preventable Visits (PPV)	- More accurate or clinically meaningful classification	• PPVs are now defined by the Principal Diagnosis (PDX) • PPV reasons are updated • PPV trauma logic revised
Potentially Preventable Services (PPS)	- Simplified logic to identify potentially preventable vs not potentially preventable services - Targeted focus on potentially overutilized low value care with high volume and variability	• PPS reasons now referred to as PPS categories to better align with EAPG • PPS now defined by HCPCS • New EAPG service line outputs

3M

What's next –PPS

Our upcoming version will focus on high volume, low value services targeting the following 14 service lines.
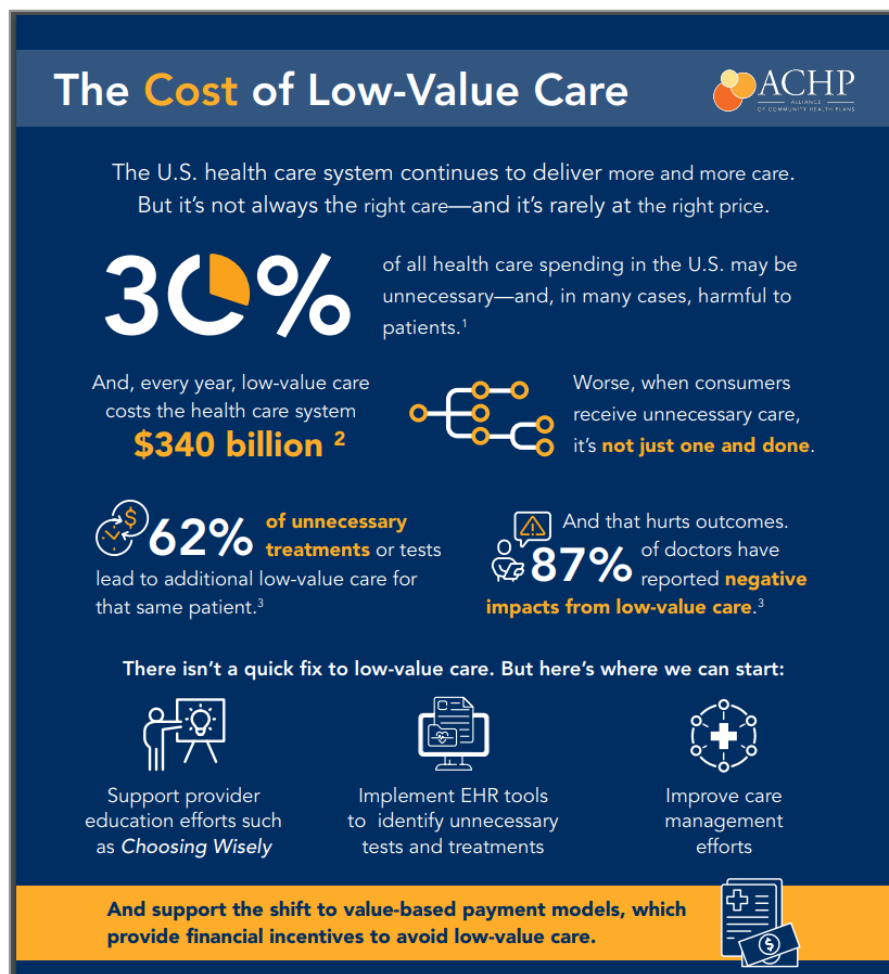
General Surgery
Orthopedic Surgery
Rehabilitation
Cardiology
Interventional Cardiology
Gastroenterology
Neurology
Ophthalmology Surgery
Diagnostic Radiology
Diagnostic Nuclear Medicine
Laboratory
Chemotherapy and Pharmacotherapy
Orthopedics
Interventional Radiology

- PPS are more impactable/actionable

- Fewer patient factors than PPA, PPV, PPR

- Less system complexity as PPCs

- Benchmarks

- Enormous need by payers and risk-bearing providers while also reducing risk of harm to patients

Q & A

Ambulatory Potentially Preventable Complications (AM-PPC)

Meet the speakers

Miki Patterson PhD NP
3M Health Information Systems Clinical
and Economic Research
Ft. Myers, Florida | United States
| Mobile: +1 978-578-1318
miki.patterson@mmm.com

Dana Casey, RHIA | Clinical Analyst
3M Health Information Systems, Clinical
and Economic Research
400 Research Parkway | Meriden, CT
Office: +1 570-492-3346
Dcasey@mmm.com

3M

AM-PPCs Introduction and Value Propositions

96 Procedure Groups
Rep > 2500 procedures

- Public: What is the actual risk?
- Payor: What procedures are high risk?
- Institution: What are our expected to actual rates?
- Provider: Compare like procedures to peers

23 Complication Groups
Rep > 1500 complications

- Public: What are the complications associated with this procedure?
- Payor: How many will be expected to go to ED or IP admit after?
- Institution: Where can we focus on improvement?
- Provider: Truly Informed consent

Quality / Safety Policies

- Public: Standards of care and safety. Comprehensive trustable actionable outpatient data.
- Payors: Are my members getting quality care? What is the complication rate? Do I reimburse for quality/ value?
- Institution: Compare in competitive market
- Provider: Focused prevention

Practice Area HOPD, ASC, OP

- Public: Is this a good place to have a procedure?
- Payor: Do we pay better for better outcomes? Should this be inpatient only?
- Institution: Do we need to improve?
- Provider: Should I do this procedure here?

Service line

- Public: Which is the best group?
- Payor: We want our members have the best. Shall we partner with them?
- Institution: This is a high risk What can we do to improve. Or can we make a practice agreement around these KPIs.
- Provider: Am I doing as well as my serviceline? What can I learn from them?

3M

Phase 1: Event identification and Identifying Non-Events
- Identifies each inpatient admission, emergency dept. visit, and ambulatory encounters
- Ambulatory Non-Events and Rejected Events are identified/removed from analysis

Phase 2: Preliminarily Classify Ambulatory Events
- Assign Procedure Sub-Groups (PSGs)
- Apply the PSG Classification Hierarchy to select a primary PSG
- Classify the Ambulatory Event: OA (at-risk), OO (other), EE or UH (excluded)

Phase 3: Determine Final Classification of Ambulatory Events
- Set the Event Window analysis period (30 Days) for at-risk (OA) events
- Subsequent ED, IP, and OP events are reviewed sequentially for AMPPCs that are related to the initial at-risk event and that also meet applicable timing.(event chain)
- Reclassify the ambulatory event based on the identified complication event (Type 1-3) or exclusion condition.

Phase 4: Classify Inpatient Events Meeting Type 4 Complication Criteria
- Identify Potential Type 4 Complications – IP event contains a procedure preceding admission date and a Complication Dx that is Present on Admission (POA)
- Assign APR DRG
- Assign Primary PSG
- Assign AMPPCs and apply timing exclusion logic
- Reclassify the inpatient event to a Type 4 Complication (O4)

Phase 5: Apply Lookback Window logic to Identify Prior Significant Events
- Set the Lookback Window analysis period (30 days) for at-risk events
- Report any significant events such as, IP admission, prior at-risk procedure event

AM-PPC Methodology

3M

Examples of AM-PPC clinical logic

Pt	Clinical Scenario (By APR DRG)	PPR ED?	Comment
1	Admission 1: 139 Pneumonia ED Visit 1: 844 Partial Thickness Burn	No	Not PPR ED – burn ED visit not preventable.
2	Admission 1: 136 Resp. Malignancy ED Visit 1: 139 Pneumonia	No	Global exclusion 136
3	Admission 1: 139 Pneumonia Discharge status 07: Left against medical advice ED Visit: 139 Pneumonia	No	Inpatient discharge was against medical advice, so the ED visit is not potentially preventable.
4	Admission 1: 139 Pneumonia ED visit 1: 139 Pneumonia (2 days later) Admission 2: 194 Heart Failure	No	An ED visit followed by an admission within 72 hours is ignored because the admission is expected to include the ED visit.
5	Admission 1: 139 Pneumonia ED visit 1: 194 Heart Failure	Yes	PPR ED for ambulatory care sensitive condition (per AHRQ Patient Safety indicator list).
6	Admission 1: 139 Pneumonia (2 days after inpatient discharge) ED visit 1: 844 Partial Thickness Burn (12 days after inpatient discharge) ED visit 2: 194 Heart Failure	ED Visit 1: No ED Visit 2: Yes	All ED visits within the analysis window are reviewed even if the prior ED visit was not potentially preventable.
7	Admission 1: 139 Pneumonia (2 days after inpatient discharge) ED visit 1: 844 Partial Thickness Burn (10 days after inpatient discharge) ED visit 2: 194 Heart Failure (13 days after inpatient discharge) ED visit 3: 139 Pneumonia (31 days after inpatient discharge) ED visit 4: 139 Pneumonia	ED Visit 1: No ED Visit 2: Yes ED Visit 3: Yes ED Visit 4: No	All ED visits within the analysis window are reviewed (even if the prior ED visit was not potentially preventable) until another inpatient stay occurs or the analysis window ends (e.g.,. ED visit 4).

Q & A