

Overview of the human immunodeficiency virus infection episode of care

State of Ohio

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1. CLINICAL OVERVIEW AND RATIONALE FOR DEVELOPMENT OF THE HUMAN IMMUNODEFICIENCY VIRUS INFECTION EPISODE

1.1 Rationale for development of the human immunodeficiency virus infection episode of care

Human immunodeficiency virus (HIV) infection is a severe disease and public health issue for which there is treatment but no cure. Without treatment, most patients with HIV will progress to acquired immunodeficiency syndrome (AIDS) and experience premature death. With treatment, they have longer life expectancies and are less likely to transmit the virus to others. The generally agreed-upon clinical guidelines for the chronic management of HIV infection include anti-retroviral therapy (ART) and education and counseling to optimize adherence to ART.¹ Guidelines also recommend that providers manage the complications from the long-term use of ART; complications from HIV, including AIDS-defining illnesses; and comorbidities such as diabetes, hypertension, and chronic kidney disease.^{2,3} Despite clear guidelines,

¹ Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1 infected adults and adolescents. Department of Health and Human Services. Available at <http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf>. Accessed June 13, 2016

² Centers for Disease Control and Prevention, National Institutes of Health, HIV Medicine Association of the Infectious Disease Society of America. Guidelines for the prevention and treatment of opportunistic infections in HIV-infected adults and adolescents. Department of Health and Human Services. Available at https://aidsinfo.nih.gov/contentfiles/lvguidelines/adult_oi.pdf. Accessed June 13, 2016

³ Horberg, M.A. et al. (2014). Primary care guidelines for the management of persons infected with HIV: 2013 update by the HIV Medicine Association of the Infectious Diseases Society of America. *Clinical Infectious Diseases*, 58 (1): e1-e34

medical practice varies widely from one provider to another.^{4,5,6} Unique patient needs often necessitate such variation, but variation due to reasons not related to the patient may lead to sub-optimal outcomes, higher than necessary costs, or both. For example, inappropriate use of antibiotic prophylaxis can lead to increased frequency of opportunistic infections.

From 2000 to 2010, HIV prevalence more than doubled in Ohio (8,000 to 17,000 people living with HIV), in the setting of increased incidence (600 to more than 900 new cases per year) and a steady prevalence of AIDS (approximately 550 new cases per year).⁷ Approximately 20 percent of the people living with HIV/AIDS in Ohio are enrolled in the Ohio Medicaid program, which is in line with the national estimate that about a quarter of people diagnosed with HIV are covered by Medicaid.⁸ In fiscal year 2011, the Ohio Medicaid program spent nearly \$90 million for enrollees with HIV/AIDS, or an average of more than \$23,000 per beneficiary. Among all Medicaid programs, Ohio's ranked as the 13th most expensive per beneficiary.⁹

From 2010 to 2012, Ohio reduced the mortality rate for persons living with HIV from 21 to 18 deaths per 1,000. The state also met the 2015 goals of the Department of Health and Human Services (HHS) to prevent new HIV infections, increase access to HIV care, and improve health outcomes. According to HHS, however, Ohio did not significantly increase HIV testing or knowledge of HIV status. In addition,

⁴ Mugavero, M.J. et al. (2013). The state of engagement in HIV care in the United States: From cascade to continuum to control. *Clinical Infectious Diseases*, 57 (8): 1164-1171

⁵ Landon, B.E., et al. (2005). Physician specialization and the quality of care for human immunodeficiency virus infection. *JAMA Archives of Internal Medicine*, 165: 1133-1139

⁶ Rackal, J.M. et al. (2011). Provider training and experience for people living with HIV/AIDS. *Cochrane Database of Systemic Reviews*, 15 (6): CD003938

⁷ Ohio Department of Health HIV/AIDS Surveillance Program. (2011). History of Ohio's HIV/AIDS epidemic, 1981-2010. Available at <https://www.odh.ohio.gov/~media/ODH/ASSETS/Files/health%20statistics%20-%20disease%20-%20hiv-aids/12OhioChart.pdf> Accessed June 13, 2016

⁸ Kaiser Health Reform Quick Take. (2012). An Update on the ACA & HIV: Medicaid Health Homes. Available at <http://kff.org/health-reform/fact-sheet/quick-take-an-update-on-the-aca/> Accessed June 13, 2016

⁹ Kaiser Commission on Medicaid and the Uninsured and Urban Institute. (2011). Medicaid Enrollment and Spending on HIV/AIDS. Available at <http://kff.org/hiv/aids/state-indicator/enrollment-spending-on-hiv/> Accessed June 13, 2016

information about linkage to and retention in care among people diagnosed with HIV was insufficiently available.¹⁰

Implementing the HIV episode of care will provide incentives for evidence-based, guideline-concordant care through an outcomes-based payment model. Alongside other episodes of care and patient centered medical homes, the HIV episode will contribute to a model of care delivery that benefits patients through improved care quality, improved long-term health outcomes, and lower overall cost of care.

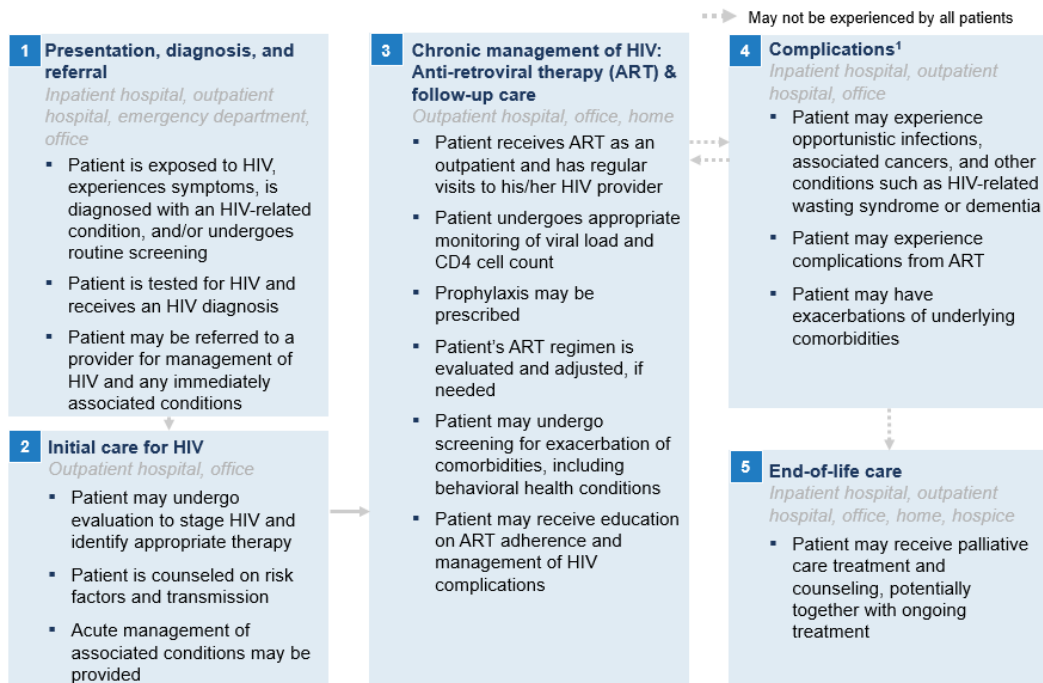
1.2 Clinical overview and typical patient journey for the chronic management of HIV

The foundation of care for patients with HIV is ART, a medication regimen that suppresses the HIV viral load and allows patients to establish a sufficient immune response. The standard of care is for patients with HIV to begin ART as soon as possible (e.g., upon diagnosis) and to continue it indefinitely.

As depicted in Exhibit 1, the HIV episode is triggered when ART medications are dispensed to the patient at an outpatient pharmacy. Patients with HIV presumably will receive ART at several points in the patient journey, and the HIV episode is designed to account for these instances. For example, for any given episode, a patient with HIV may be receiving ART for the first time, as a recurring refill, and/or as part of the treatment for AIDS-defining illnesses. In addition to ART, a patient makes regular visits to his or her HIV provider to monitor the viral load and CD4 cell count, prevent and treat co-infections that may arise, and manage comorbidities. Throughout the chronic management of HIV, patients may have their ART regimen evaluated and potentially adjusted, and they may receive education, counseling, and support on ART adherence. Many patients can remain in this phase of chronic management for years without needing additional treatment. But depending on the severity of their clinical course and whether they develop complications, patients with HIV may require care in more intense care settings, including urgent care, emergency department (ED), and inpatient facilities, in order to treat opportunistic infections, HIV-specific cancers, or other conditions. For patients who are unable to recover from complications, palliative care may be provided near the end of life.

¹⁰ CDC. (2015). State HIV prevention progress report 2010-2013. Available at <http://www.cdc.gov/hiv/pdf/policies/progressreports/cdc-hiv-stateprogressreport.pdf> Accessed June 13, 2016

EXHIBIT 1 – HIV PATIENT JOURNEY



Source: U.S. Department of Health and Human Services AIDSinfo; HIV Medicine Association of the Infectious Diseases Society of America

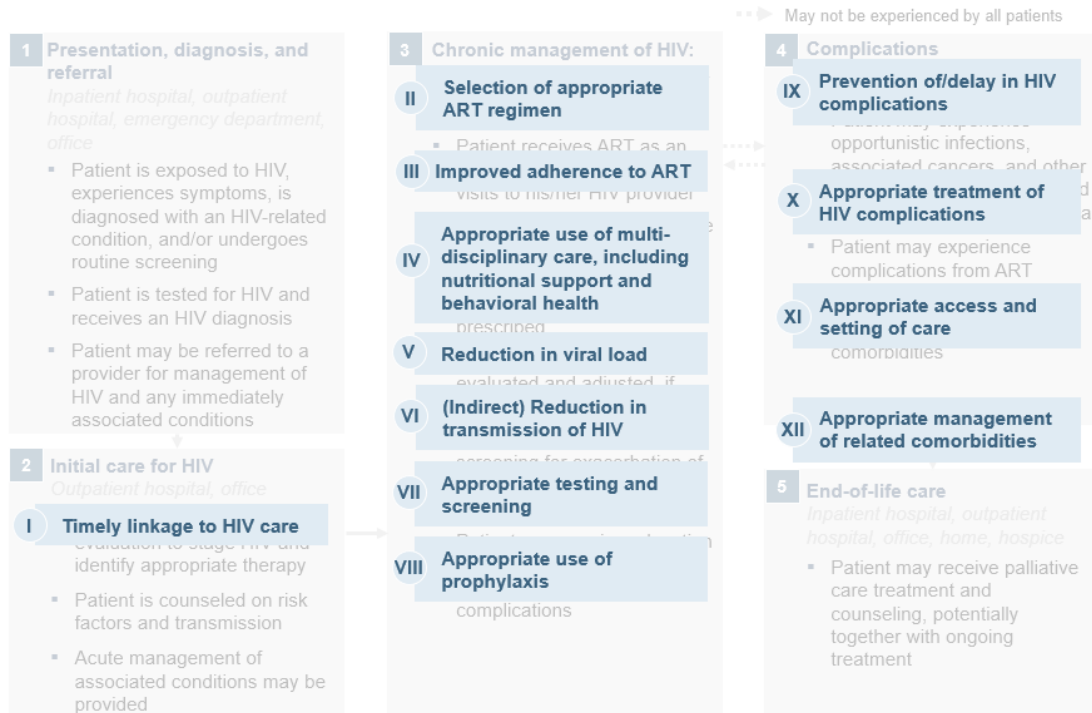
The HIV episode and patient centered medical homes will complement each other to cover a broad spectrum of care delivery for the Medicaid beneficiaries affected by HIV. Patient centered medical homes will focus on preventing HIV through routine testing, appropriate pre- or post-exposure prophylaxis, and education. For beneficiaries diagnosed with HIV, the HIV episode will focus on improving adherence to ART and HIV-related health outcomes while the patient centered medical home will focus on managing the non-HIV care of these patients.

1.3 Potential sources of value within the patient journey

Within the HIV episode of care, providers have several opportunities to improve quality of care and reduce higher-than-necessary spending associated with the episode (see Exhibit 2). For example, providers can take measures to promote and improve patients' adherence to ART; prescribe ART that is compatible with patients' needs; engage patients in regular evaluation and management, including tobacco use cessation counseling; and decrease a patient's viral load and reduce the likelihood of transmission to others, which is an example of generating indirect public health value through appropriate patient care. In addition, providers can adhere to clinical guidelines to prevent co-infections and complications, including those that may lead

to urgent care and inpatient facility visits (for example, see Exhibit 3 in the Appendix for analysis that demonstrates the variation in admission and ED visit rates by principal accountable provider); and treat and manage comorbidities in the appropriate care setting.

EXHIBIT 2 – HIV SOURCES OF VALUE



2. OVERVIEW OF THE HIV EPISODE DESIGN

2.1 Episode Trigger

The HIV episode is triggered by a pharmacy dispensing a prescription for HIV-specific ART and a medical claim with a diagnosis of HIV or an AIDS-defining illness on the same day or during the 179 days after the prescription was filled (see Tables 1A and 1B in the Appendix for the lists of trigger drug and diagnosis codes, respectively).

Many patients with HIV not on ART have uncontrolled viral loads, and this episode is not designed to compare these patients with those with HIV on ART. In addition, patients taking ART without a diagnosis of HIV or an AIDS-defining illness may be taking the drugs as pre- or post-exposure prophylaxis or for treatment of chronic hepatitis C and are therefore not the intended population of the HIV episode.

2.2 Principal Accountable Provider

The principal accountable provider (PAP) is the person or entity best positioned to influence the patient journey and the clinical decisions made throughout the episode. For the HIV episode, the PAP is the clinician or clinician group with whom the patient has the most outpatient visits for HIV and HIV-related conditions during the episode.

The PAP is assigned based on a hierarchy; if there are any visits for the patient that satisfy the conditions for a particular level of the hierarchy, PAP assignment ends at that level. The hierarchy is as follows: first, to the provider with the most visits for HIV as a primary diagnosis; second, to the provider with the most visits for AIDS-defining illnesses as a primary diagnosis with HIV as a secondary diagnosis; third, to the provider with the most visits for common signs and symptoms of HIV as a primary diagnosis with HIV as a secondary diagnosis; fourth, to the provider with the most visits for HIV as a secondary diagnosis; fifth, to the provider with the most visits for AIDS-defining illnesses as any diagnosis; and last, to the provider with the most visits for common signs and symptoms of HIV as any diagnosis (see Table 2 in the Appendix for the categories of diagnosis codes used for PAP attribution).

Typically, the PAP will be an infectious diseases specialist, but could be another specialist or a primary care provider. Because this provider sees the patient the most for HIV and HIV-related conditions, he or she is in the best position to promote ART adherence, prevent complications, and influence other sources of value (see Exhibit 4 in the Appendix for the distribution of average non-risk adjusted spend by PAP).

2.3 Episode Duration

The HIV episode begins on the date of the trigger claim and ends 180 days later. Clinical guidelines recommend a management visit every three to six months for patients who have achieved viral suppression. A duration of 180 days ensures that these periodic visits are included in the episode. For patients who experience complications, the duration of 180 days ensures that the episode can track their progress from the occurrence of the complication to a state of clinical stability. Once an episode ends, another episode can begin with the next refill, which allows each patient to have regular instances of 180-day episodes. This approach enables the episode to best reflect the course of chronic management of patients with HIV.

2.4 Included Services

The episode model is designed to address the spend for care and services directly related to the chronic management of HIV throughout the patient journey. Therefore,

claims included are those for care and services directly or indirectly influenced by the PAP (i.e., the primary HIV provider) during the episode.

The total spend of the episode includes all spend due to the a) care of HIV, including prophylaxis for opportunistic infections, laboratory tests of viral load and CD4 cell count; b) care for direct effects of HIV, such as antibiotics, certain laboratory tests for infections; and c) care for complications of HIV or ART, including pain management and treatment of nutritional deficiencies. Spend not included in the total spend of the episode includes that due to the care of comorbidities that may be exacerbated by HIV but not derived from HIV, such as diabetes, hypertension, and chronic kidney disease. Currently, spend from ART is also not included.

The total episode spend is calculated by adding the amounts of all the individual claims included in the episode.

2.5 Episode Exclusions and Risk Factors

To ensure that episodes are comparable across patient panels, select risk factors and exclusions are applied before assessing PAP performance. In the context of episode design, risk factors are attributes or underlying clinical conditions likely to impact a patient's course of care and the spend associated with a given episode. Exclusions are attributes or clinical conditions that cannot be adequately risk adjusted and that indicate either a distinct patient journey or incomparably high or low episode spend.

Risk factors are selected via a standardized and iterative risk-adjustment process based on Ohio-specific regression analysis that gives due consideration to clinical relevance, statistical significance, and other contextual factors.¹¹ Based on the selected risk factors, each episode is assigned a risk score. The total episode spend and the risk score are used to arrive at an adjusted episode spend, which is the spend on which providers are compared to each other. As an illustration, risk factors include comorbidities, such as diabetes, hypertension, and chronic kidney disease, which can further weaken the patient's immune system or compromise the patient's ability to adhere to ART. The treatment for comorbidities may also interact with ART, necessitating a more complex regimen. Table 3 in the Appendix lists the episode risk factors, and Exhibit 5 presents an analysis of these risk factors. Note that the final list

¹¹ Garrett B., et al. (2014). Risk adjustment for retrospective episode-based payment: Guiding principles and proposed methodology. McKinsey Healthcare Systems and Services Practice. Available at <http://healthcare.mckinsey.com/risk-adjustment-retrospective-episode-based-payment> Accessed June 13, 2016

of risk factors was determined after feedback from providers and the application of the statistical process described above.

By contrast, an episode is excluded from a patient panel when the patient has clinical factors that suggest he or she has experienced a distinct or different journey and/or that drive very significant increases in spend relative to the average patient. In addition, there are several “business-related” exclusions relating to reimbursement policy (e.g., whether a patient sought care out of state), the completeness of spend data for that patient (e.g., third-party liability or dual eligibility), and other topics relating to episode design and implementation, such as overlapping episodes, during the comparison period. Episodes with no exclusions are known as “valid” and used for provider comparisons. Episodes that have one of any of the exclusions are known as “invalid” episodes.

For the HIV episode, both business and clinical exclusions apply. Several of the business and clinical exclusions are standard across most episodes, while others are specific to this HIV episode. As an illustration, clinical exclusions include active treatment of cancer, pregnancy, and certain ages. The final list of clinical exclusions was determined after feedback from providers and the application of the risk-adjustment process for the HIV episode. A list of business and clinical exclusions is in Table 4, and analysis of these exclusions is in Exhibit 6 in the Appendix.

2.6 Quality Metrics

To ensure the episode model incentivizes quality care, the HIV episode has select quality metrics. These are calculated for each PAP meeting the minimum threshold for valid episodes.

The HIV episode has eleven quality metrics. Two are linked to performance assessment, meaning that performance thresholds on these metrics must be met for the episodes to be eligible for positive incentive payments within the episode model. The specific threshold amount will be determined during the informational reporting period. Nine of the quality metrics are for informational purposes only. The metrics tied to positive incentive payments are percentage of episodes with periodic ART refill and the percentage of episodes with viral status reporting. Informational metrics include the percentage of episodes with viral suppression, percentage of episodes with an HIV-related inpatient admission, the percentage of episodes with screening for hepatitis C, to name a few. A detailed description of all eleven quality metrics is in Table 5, and analysis of these quality metrics is in Exhibit 7 in the Appendix.

3. APPENDIX: SUPPORTING ANALYSES

Table 1A – Episode triggers: HIV-specific ART¹²

Drug category	Trigger codes (HIC3)	Example
Nucleoside/ Nucleotide reverse transcriptase inhibitor	W5J	Lamivudine, Abacavir, Emtricitabine, Didanosine, Stavudine, Zalcitabine, Zidovudine
	W5L	Abacavir/Lamivudine, Abacavir/Lamivudine/Zidovudine, Lamivudine/Zidovudine
	W5I	Tenofovir
	W5O	Emtricitabine/Tenofovir
Non-nucleoside reverse transcriptase inhibitor	W5K	Delavirdine, Efavirenz, Etravirine, Nevirapine, Rilpivirine
Protease inhibitor	W5C	Amprenavir, Atazanavir, Atazanavir/Cobicistat, Fosamprenavir Calcium, Indinavir, Nelfinavir, Ritonavir, Saquinavir
	W5M	Lopinavir/Ritonavir
	W5P	Darunavir, Darunavir/Cobicistat, Tipranavir
Fusion inhibitor	W5N	Enfuvirtide
Entry inhibitor (i.e., CCR5 co- receptor antagonist)	W5T	Maraviroc
Integrase strand transfer inhibitor	W5U	Dolutegravir, Elvitegravir, Raltegravir
Combination therapy	W5Q	Efavirenz/Emtricitabine/Tenofovir, Emtricitabine/Rilpivirine/Tenofovir
	W5X	Elvitegravir/Cobicistat/Emtricitabine/Tenofovir Alafenamide, Cobicistat/Elvitegravir/Emtricitabine/Tenofovir
	W5Z	Abacavir/Dolutegravir/Lamivudine

¹² Necessary but not sufficient, i.e., also requires medical claim with relevant diagnosis

Table 1B – Episode triggers: Diagnoses of HIV and AIDS-defining illnesses¹³

Trigger category	Example
HIV (and AIDS)	Asymptomatic and symptomatic HIV, HIV
Opportunistic infections	Candidiasis, coccidioidomycosis, cryptococcosis, cryptosporidiosis, cytomegalovirus infection, disseminated salmonella, herpes simplex, histoplasmosis, isosporiasis, lymphoid interstitial pneumonia, mycobacteria avium complex, pneumocystis, progressive multifocal leukoencephalopathy, toxoplasmosis, tuberculosis
HIV-specific cancers	Invasive cervical cancer, Kaposi’s sarcoma, non-Hodgkin’s lymphoma (i.e., Burkitt’s lymphoma, diffuse large B-cell lymphoma, large cell lymphoma, primary central nervous system lymphoma, small B-cell lymphoma)

Table 2 – PAP attribution¹⁴

Attribution category	Example
HIV (and AIDS)	Asymptomatic and symptomatic HIV, HIV
AIDS-defining illnesses	Candidiasis, coccidioidomycosis, cryptococcosis, cryptosporidiosis, cytomegalovirus infection, disseminated salmonella, herpes simplex, histoplasmosis, invasive cervical cancer, isosporiasis, Kaposi’s sarcoma, lymphoid interstitial pneumonia, mycobacteria avium complex, non-Hodgkin’s lymphoma (i.e., Burkitt’s lymphoma, diffuse large B-cell lymphoma, large cell lymphoma, primary central nervous system lymphoma, small B-cell lymphoma), pneumocystis, progressive multifocal leukoencephalopathy, toxoplasmosis, tuberculosis
Common signs and symptoms of HIV	Abdominal pain, abdominal swelling, anemia, altered mental status, cachexia, diarrhea, dysphagia, eosinophilia, granulocytopenia, headache, hyperlipidemia, leukocytopenia, lipodystrophy, lymphocytopenia, nausea and vomiting, neutropenia, nutritional deficiency

¹³ Necessary but not sufficient, i.e., also requires ART pharmacy claim

¹⁴ The PAP is assigned based on the following hierarchy: first, to the provider with the most visits for HIV; second, if there are no visits for HIV, to the provider with the most visits for AIDS-defining illnesses; and last, if there are no visits for any of the above, to the provider with the most visits for common signs and symptoms of HIV

Table 3 – Episode risk factors

Risk factor	Relevant time period
Acute renal failure	Up to 90 days before the start of the episode or 30 days into the episode
AIDS-defining illnesses	Up to 90 days before the start of the episode or 30 days into the episode
Allergic reactions	During the episode or up to 365 days before the start of the episode
Arterial diseases	During the episode or up to 365 days before the start of the episode
Benign neoplasms	During the episode or up to 365 days before the start of the episode
Biliary tract diseases	During the episode or up to 365 days before the start of the episode
Cancer of the rectum	During the episode or up to 365 days before the start of the episode
Chronic obstructive pulmonary disease	During the episode or up to 365 days before the start of the episode
Female genital inflammatory disease	During the episode or up to 365 days before the start of the episode
Fever	During the episode or up to 365 days before the start of the episode
Fluid disorders	During the episode or up to 365 days before the start of the episode
Heart diseases	During the episode or up to 365 days before the start of the episode
Lower GI tract diseases	During the episode or up to 365 days before the start of the episode
Migraine	During the episode or up to 365 days before the start of the episode
Mycoses	Up to 90 days before the start of the episode or 30 days into the episode
Nervous system disorders	During the episode or up to 365 days before the start of the episode
Nutrition metabolism disorders	Up to 90 days before the start of the episode or 30 days into the episode
Pancreatic disorders	During the episode or up to 365 days before the start of the episode
Skin and soft tissue infections	Up to 90 days before the start of the episode or 30 days into the episode
Specific GI tract diseases	During the episode or up to 365 days before the start of the episode
Substance abuse	During the episode or up to 365 days before the start of the episode
Urinary tract diseases	During the episode or up to 365 days before the start of the episode
Viral infections	Up to 90 days before the start of the episode or 30 days into the episode

Table 4 – Episode exclusions

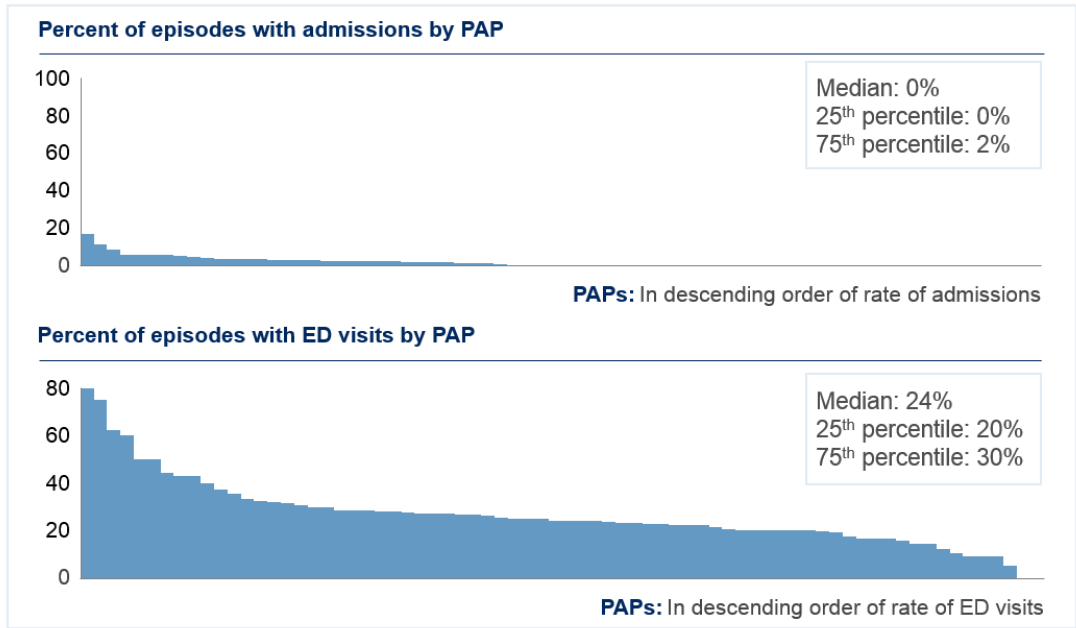
Exclusion type	Episode exclusion	Description	Relevant time period
Business exclusion	Dual	An episode is excluded if the patient had dual coverage by Medicare and Medicaid	During the episode window
	FQHC/RHC	An episode is excluded if the PAP is classified as a federally qualified health center or rural health clinic	During the episode window
	Incomplete episodes	An episode is incomplete if the total episode spend is less than the spend from the minimum services required to treat an episode	During the episode window
	Inconsistent enrollment	An episode is excluded if the patient has gaps in full Medicaid coverage	During the episode window
	Long Admission	An episode is excluded if the patient has one or more hospital admissions for a duration greater than 30 days	During the episode window
	Long Term Care	An episode is excluded if the patient has one or more long-term care claim detail lines which overlap the episode window	During the episode window
	No DRG	An episode is excluded if a DRG-paid inpatient claim is missing the APR-DRG and severity of illness	During the episode window
	Multi Payer	An episode is excluded if a patient changes enrollment between FFS and an MCP or between MCPs	During the episode window
	No PAP	An episode is excluded if the PAP cannot be identified	During the episode window
	Out of state	An episode is excluded if the PAP operates out of state	N/A
Standard clinical exclusion	Third party liability	An episode is excluded if third-party liability charges are present on any claim or claim detail line or if the patient has relevant third-party coverage at any time	During the episode window
	Age	An episode is excluded if the patient is 65 years old or older	During the episode window
	Cancer Treatment	An episode is excluded if the patient has diagnosis of cancer and procedures for active management of cancer	During the episode or up to 90 days before the start of the episode
	Cardiac arrest	An episode is excluded if the patient has diagnosis of cardiac arrest	During the episode
	Coma	An episode is excluded if the patient has diagnosis of coma	During the episode or up to 365 days before

Exclusion type	Episode exclusion	Description	Relevant time period
			the start of the episode
	Cystic Fibrosis	An episode is excluded if the patient has diagnosis of cystic fibrosis	During the episode or up to 365 days before the start of the episode
	Death	An episode is excluded if the patient has a discharge status of “expired” on any inpatient or outpatient claim	During the episode window
	ESRD	An episode is excluded if the patient has diagnosis or procedure for end stage renal disease	During the episode or up to 365 days before the start of the episode
	Left Against Medical Advice	An episode is excluded if the patient has discharge status of “left against medical advice”	During the episode window
	Multiple Sclerosis	Patient has diagnosis of multiple sclerosis	During the episode window or during 365 days before the start of the episode
	Transplant	An episode is excluded if a patient has an organ transplant	During the episode or up to 365 days before the start of the episode
	Paralysis	Patient has diagnosis of paralysis	During the episode or up to 365 days before the start of the episode
Episode-specific clinical exclusion	Age	An episode is excluded if the patient is 15 years old or younger	During the episode window
	Pregnancy	An episode is excluded if the patient is pregnant or delivers a baby	During the episode window
	PrEP/PEP	An episode is excluded if the patient is taking ART for pre-exposure prophylaxis or post-exposure prophylaxis	During the episode window or up to 90 days before the start of the episode

Table 5 – Episode quality metrics (PAP level)

Metric type	Quality metric	Description	Relevant time period
Tied to incentive payments	Periodic ART refill	Percent of valid episodes that have ART pharmacy claims that appear in at least four out of the five defined time intervals during the episode window	During the episode window
Tied to incentive payments	Viral status reporting	Percent of valid episodes that have a viral status coded	During the episode window
Informational	Infrequent ART refill	Percent of valid episodes that have ART pharmacy claims that appear in none, one, or two of the five defined time intervals during the episode window	During the episode window
Informational	New patients	Percent of valid episodes where the patient is receiving ART under Medicaid for the first time	Up to 365 days before the start of the episode
Informational	Viral suppression	Percent of valid episodes that have achieved viral suppression	
Informational	Preferred drug use	Percentage of valid episodes with preferred drug use for ART	
Informational	Hospitalization	Percent of valid episodes where patient is admitted for HIV-related issues (e.g., infections, nutritional deficiencies)	During the episode window
Informational	ED visit	Percent of valid episodes where the patient has an ED, observation care, or urgent care visit for HIV-related issues (e.g., opportunistic infections, psychiatric or psychological disorders, nutritional deficiencies)	During the episode window
Informational	STI screening	Percent of valid episodes where the patient is screened for select STIs: chlamydia, gonorrhea, and syphilis	During the episode window
Informational	Hepatitis C screening	Percent of valid episodes where the patient is screened for hepatitis C screening	During the episode window
Informational	Influenza vaccination	Percent of valid episodes where the patient is vaccinated for influenza	During the episode window

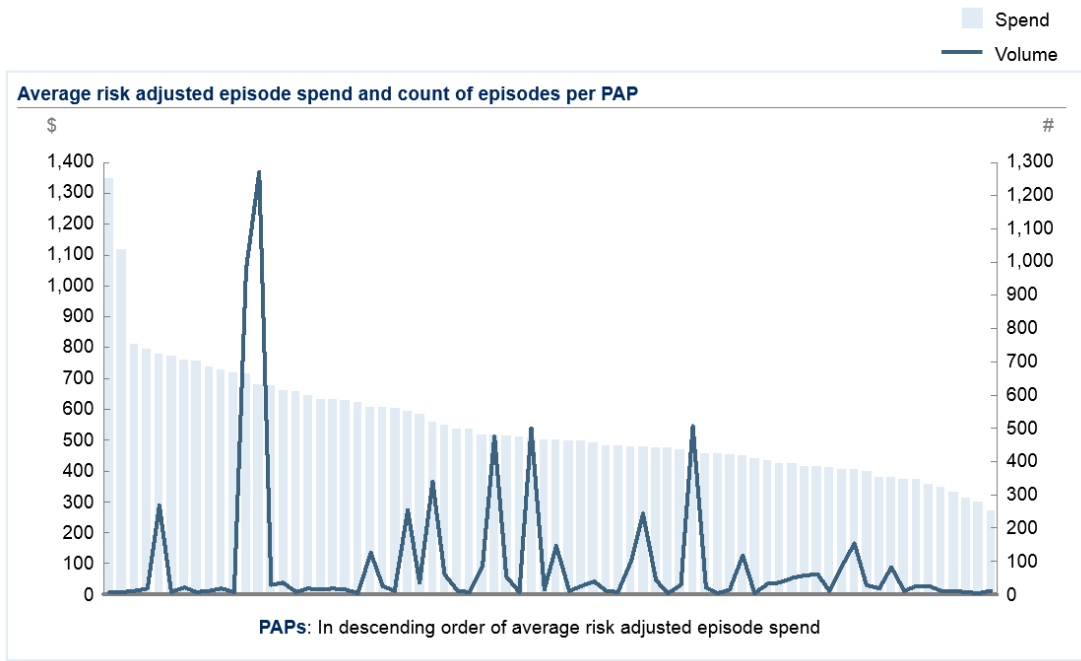
EXHIBIT 3 – VARIATION IN ADMISSION RATES AND ED VISIT RATES BY PAP¹



¹ For valid episodes (7,076) across PAPs with 5 or more valid episodes (72); valid episodes for PAPs with 4 or less episodes are not included in this analysis; valid episodes do not include those with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., cancer, ESRD). 40 PAPs have zero episodes with admissions and 4 PAPs have zero episodes with ED visits.

SOURCE: OH claims data with episodes ending between 10/01/2013 and 09/30/2015

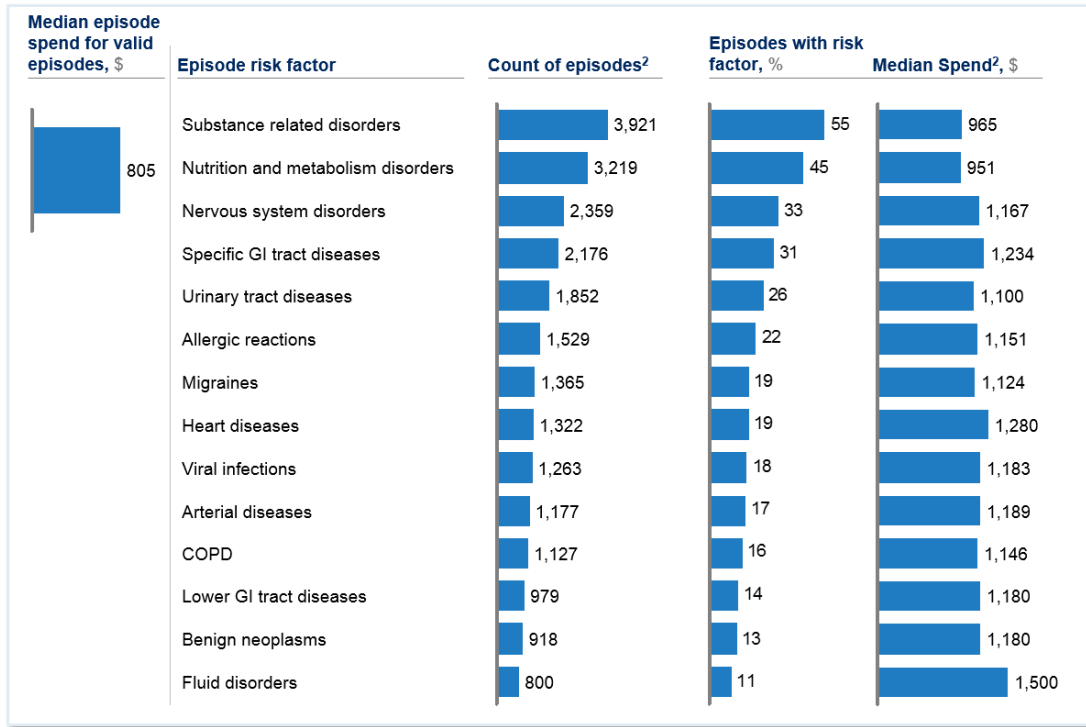
EXHIBIT 4 – DISTRIBUTION OF RISK ADJUSTED AVERAGE EPISODE SPEND AND COUNT BY PAP¹



¹ For valid episodes (7,076) across PAPs with 5 or more valid episodes (72); valid episodes for PAPs with 4 or less episodes are not included in this analysis; valid episodes do not include those with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., cancer, ESRD)

SOURCE: OH claims data with episodes ending between 10/01/2013 and 09/30/2015

EXHIBIT 5 – EPISODE COUNT AND SPEND BY EPISODE RISK FACTOR¹

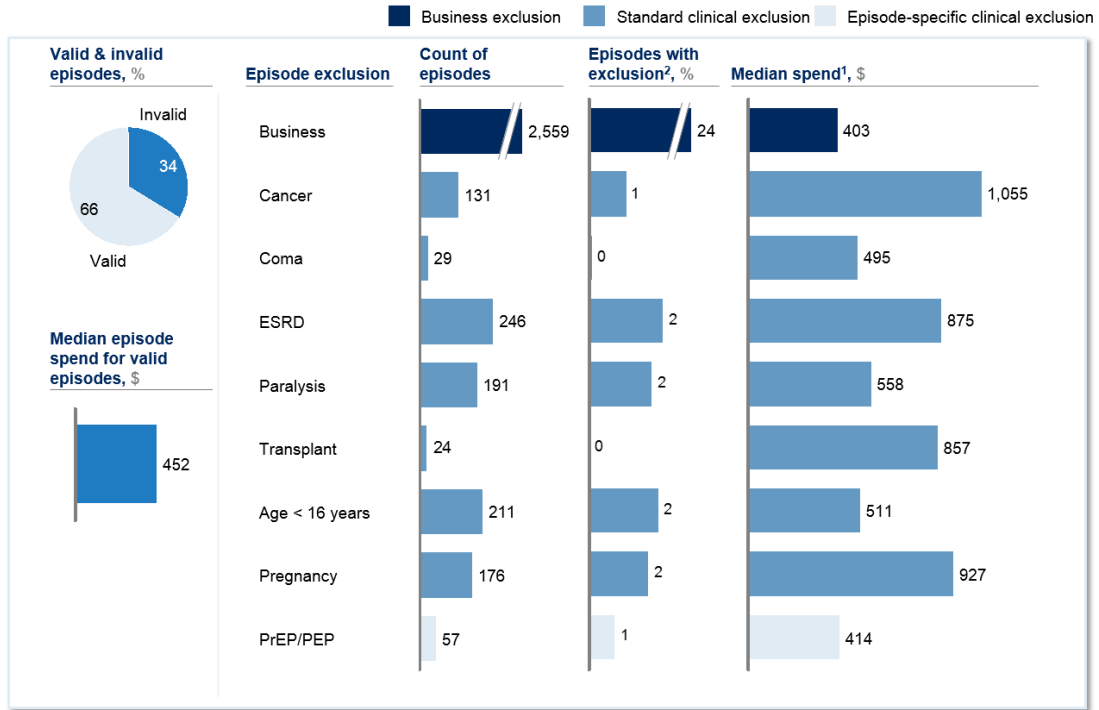


¹ Only showing 14 selected risk factors; 7,076 valid episodes across all PAPs; valid episodes do not include those with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., cancer, ESRD)

² For episodes with this risk factor; one episode can have multiple risk factors

SOURCE: OH claims data with episodes ending between 10/01/2013 and 09/30/2015

EXHIBIT 6 – EPISODE COUNT AND SPEND BY EPISODE EXCLUSION¹

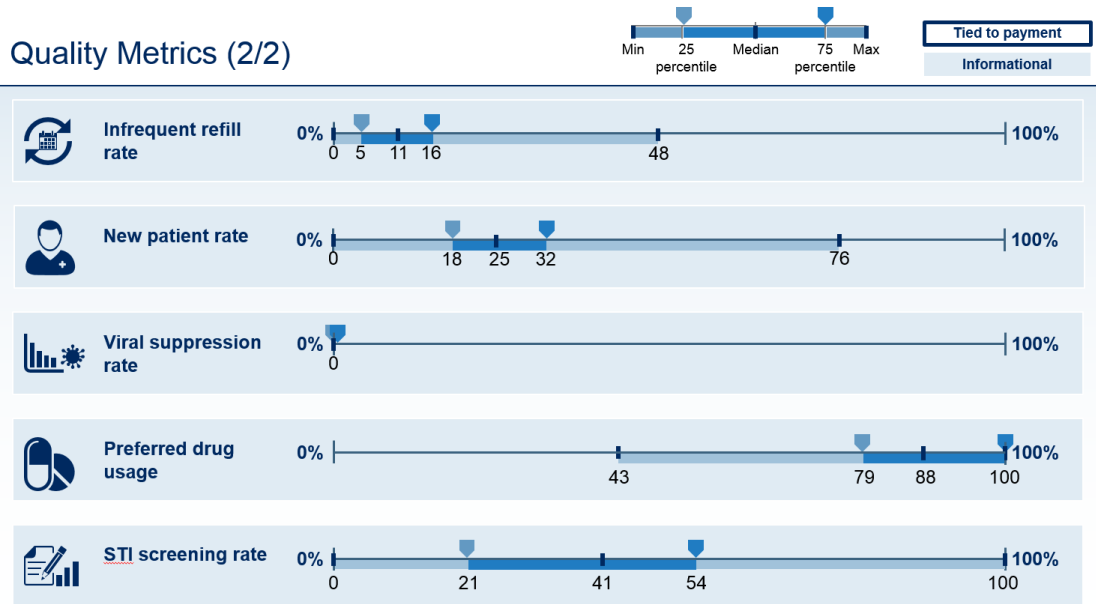
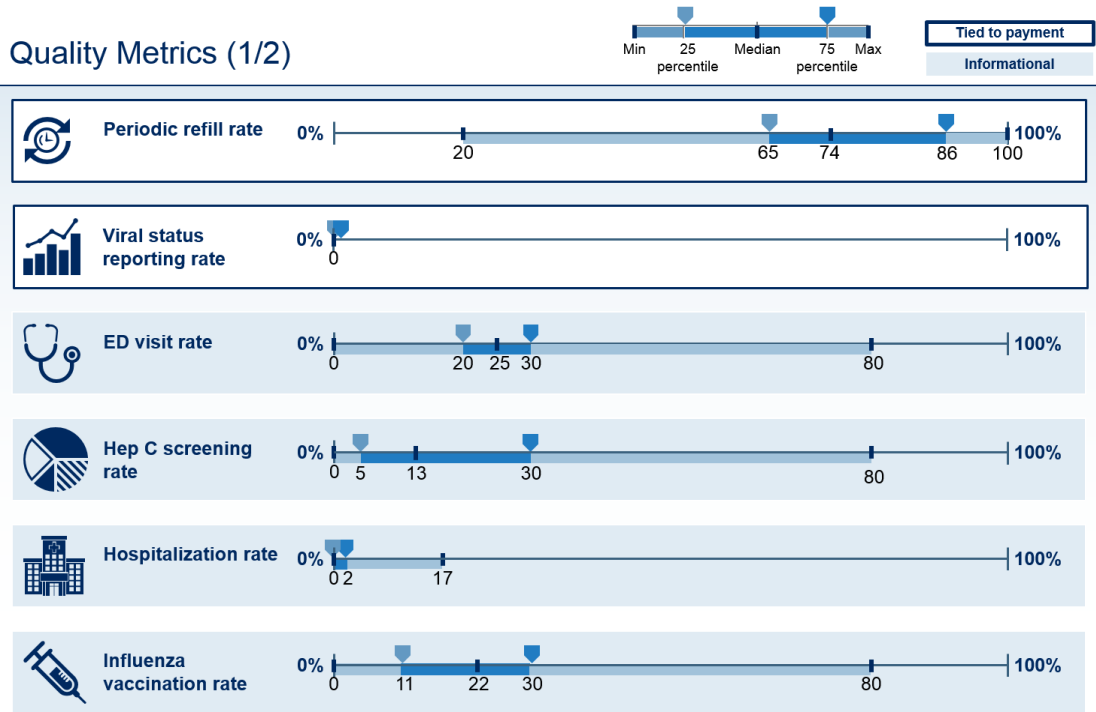


1 Showing 9 exclusions; 10,074 total episodes across all PAPs

2 For episodes with this exclusion; one episode can have multiple exclusions

SOURCE: OH claims data with episodes ending between 10/01/2013 and 09/30/2015

EXHIBIT 7 - PAP PERFORMANCE ON EPISODE QUALITY METRICS¹



¹ For valid episodes (7,076) across PAPs with 5 or more valid episodes (72); valid episodes for PAPs with 4 or less episodes are not included in this analysis; valid episodes do not include those with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., cancer, ESRD)

SOURCE: OH claims data with episodes ending between 10/01/2013 and 09/30/2015