
Target Subgroup for Second Health Home SPA

Examining High Users: Inpatient and Emergency Department Utilization Non-SMI Population

Theresa Shireman, PhD

Melissa Jaffee, MBA

Jean Hall, PhD

Noelle Kurth, MS

In consultation with the Health Homes Target Population Subgroup

Second SPA: Target Subpopulation

- **Per CMS**
 1. **Two or more chronic conditions**
 2. **One chronic condition & at risk for another**
- **Subgroup working goals**
 - **Smaller group size overall**
 - **Recognizes need for non-claims data**
 - **E.g., risk assessments**

Criteria for 2nd SPA

- **One chronic condition & at risk for 2nd**
- **Chronic conditions mentioned in SMD letter**
 - “...substance use disorder, asthma, diabetes, heart disease, and being overweight, as evidenced by a body mass index over 25... HIV/AIDs...”
 - Not limited to these

Other State SPAs using this criteria

| | Target Population Criteria | Chronic Conditions | “at risk” definition |
|----|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID | 1) SMI or SED; 2) diabetes & asthma 3) diabetes or asthma & at risk for another CC | SMI, diabetes, asthma | BMI >25, dyslipidemia, tobacco use, hypertension, respiratory diseases |
| IA | 1) Two CCs, or 2) one CC and at risk for another | SMI, SUD, asthma, diabetes, CVD, BMI>25, hypertension, BMI>18 (kids) | family history, diagnosed medical condition w/established co-morbidity, environmental exposure to agent/condition known to cause condition |
| ME | 1) Two CCS, 2) one CC and at risk for another | SMI, SUD, asthma, diabetes, CVD, BMI >25, tobacco use, COPD, hypertension, hyperlipidemia, DD, autism, brain injury, seizure, congenital abnormalities | Benes w/most listed CCs are at risk for another based on literature (citations in SPA). Benes w/other CCs are at risk of another as determined by provider |
| MO | 1) Two CCS 2) one CC & at risk for another | asthma, diabetes, heart disease, BMI>25, DD | Tobacco use, diabetes |

Other State SPAs using this criteria

| | Criteria | Chronic Conditions | “at risk” definition |
|----|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| NC | 1) Two CC 2) one CC and at risk | Asthma, diabetes, CVD, BMI>25, blindness, COPD, congenital anomalies, alimentary system, endocrine system, infectious disease, musculoskeletal, neurological | Presume risk of second CC based on inherent risk of first diagnosis (cite American Diabetes Assn, American Heart Association, etc) |
| OR | 1) Two CC 2) one CC and at risk 3) SMI | Mental health, SUD, asthma, diabetes, CVD, BMI>25, hepatitis C, HIV/Aids, CKD, COPD, cancer | US Preventive Services Task Force risk factor examinations |
| WA | One CC and at risk | SMI, SUD, asthma, diabetes, CVD, COPD, Alzheimer’s, gastrointestinal, hematological, HIV/AIDS, IDD, musculoskeletal, neurological, renal failure | Minimum CDPS risk score of 1.5 |

Second SPA: whom to target?

Chronic diseases

- SMI → done
- Diabetes
- Heart failure
- Coronary artery disease
- Heart failure
- Hypertension
- Asthma
- COPD
- Chronic pain (non-cancer)

Risk factors

- Smoking
- Substance use
- Overweight/obesity
- High user
 - ED
 - Inpatient
 - Costs
- Other risk modeling
 - CDPS, CRGs, ACGs

Second SPA Target Population: Work in Progress

- **Preliminary numbers for chronic conditions**
 - **Overlap with SMI**
 - **Dual eligibility**
 - **Age categories**
- **MCO partners to give estimates of risk factors (smoking, BMI, substance use)**
- **High use: DAI analyses**
- **Risk modeling: KUMC**

Preliminary Results for 2nd SPA

| Clinical Condition | Beneficiaries Count | Medicaid Expenditures | Cost per bene | % Children | % Non-duals |
|------------------------------|---------------------|-----------------------|---------------|------------|-------------|
| Hypertension | 27,156 | 36,214,065 | 1,334 | 1.9% | 36.2% |
| Congestive Heart Failure | 6,229 | 23,338,602 | 3,747 | 0.8% | 22.3% |
| Coronary Artery Disease | 7,929 | 16,169,237 | 2,039 | 0.4% | 29.2% |
| Vascular Disorders, Arterial | 3,030 | 4,393,118 | 1,450 | 4.5% | 33.6% |
| Vascular Disorders, Venous | 4,015 | 2,640,532 | 658 | 6.6% | 43.6% |
| Asthma | 20,461 | 3,025,310 | 148 | 73.1% | 87.9% |
| COPD | 11,400 | 17,716,997 | 1,554 | 3.3% | 33.0% |
| Diabetes | 25,347 | 29,325,951 | 1,157 | 60.6% | 94.9% |
| Anxiety | 11,277 | 2,901,777 | 257 | 36.6% | 77.6% |
| Obese & Overweight | 3,050 | 1,261,129 | 413 | 51.2% | 77.4% |
| Renal Function Failure | 6,172 | 14,010,339 | 2,270 | 3.7% | 29.1% |
| Low Back Pain | 25,215 | 9,151,128 | 363 | 15.5% | 64.5% |

Results from DAI, FY 2012:

FFS & MC claims, so some beneficiaries may be duplicated

“At risk” options

- **Any second condition from primary list**
- **Current smoker**
- **Current alcohol/drug use**
- **Overweight/obese (what BMI?)**
- **High users**
 - **Inpatient admissions, ED visits, RX meds**
- **Elevated risk score (CDPS, CRG)**

Health risk
assessments

Objective of IP & ED visit analyses

- **IP & ED visit variation**
 - **Counts & distribution**
 - **Reasons for visits**
- **Non-SMI overall**
- **Non-SMI beneficiaries with diabetes or asthma**

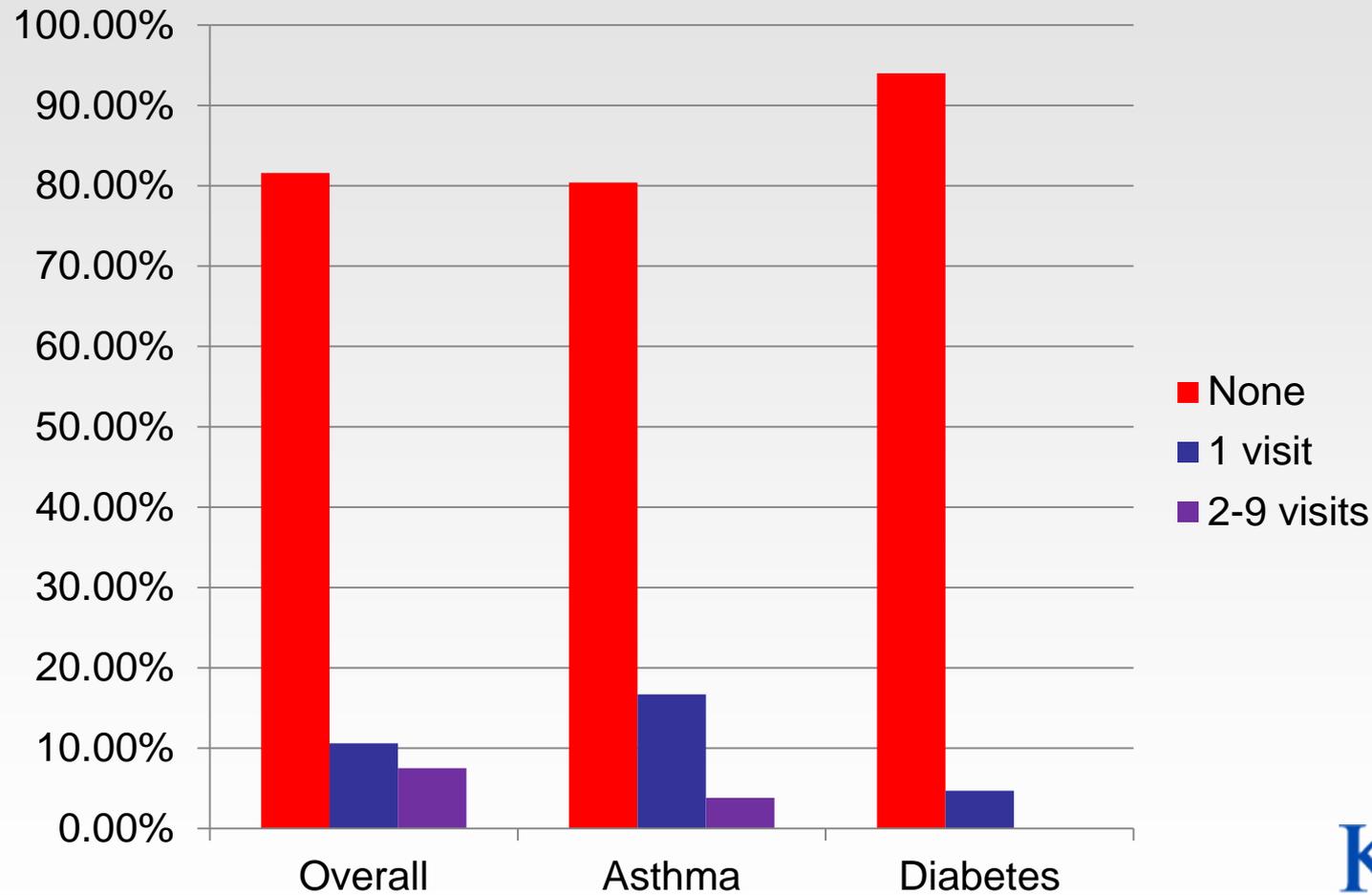
ED Visit Descriptives (non-SMI)

| | <u>Overall</u> | <u>Diabetes</u> | <u>Asthma</u> |
|------------------|----------------|-----------------|---------------|
| Number-benes | 379,179 | 19,164 | 18,437 |
| < 18 yrs | - | 808 | 6,420 |
| 18 + yrs | - | 18,356 | 12,184 |
| <u>ED visits</u> | | | |
| Mean/1000benes | 370 | | |
| < 18 yrs | - | 202 | 232 |
| 18 + yrs | - | 886 | 280 |
| Range, visits | 0-80 | | |
| < 18 yrs | | 0-6 | 0-14 |
| 18 + yrs | | 0-52 | 0-17 |

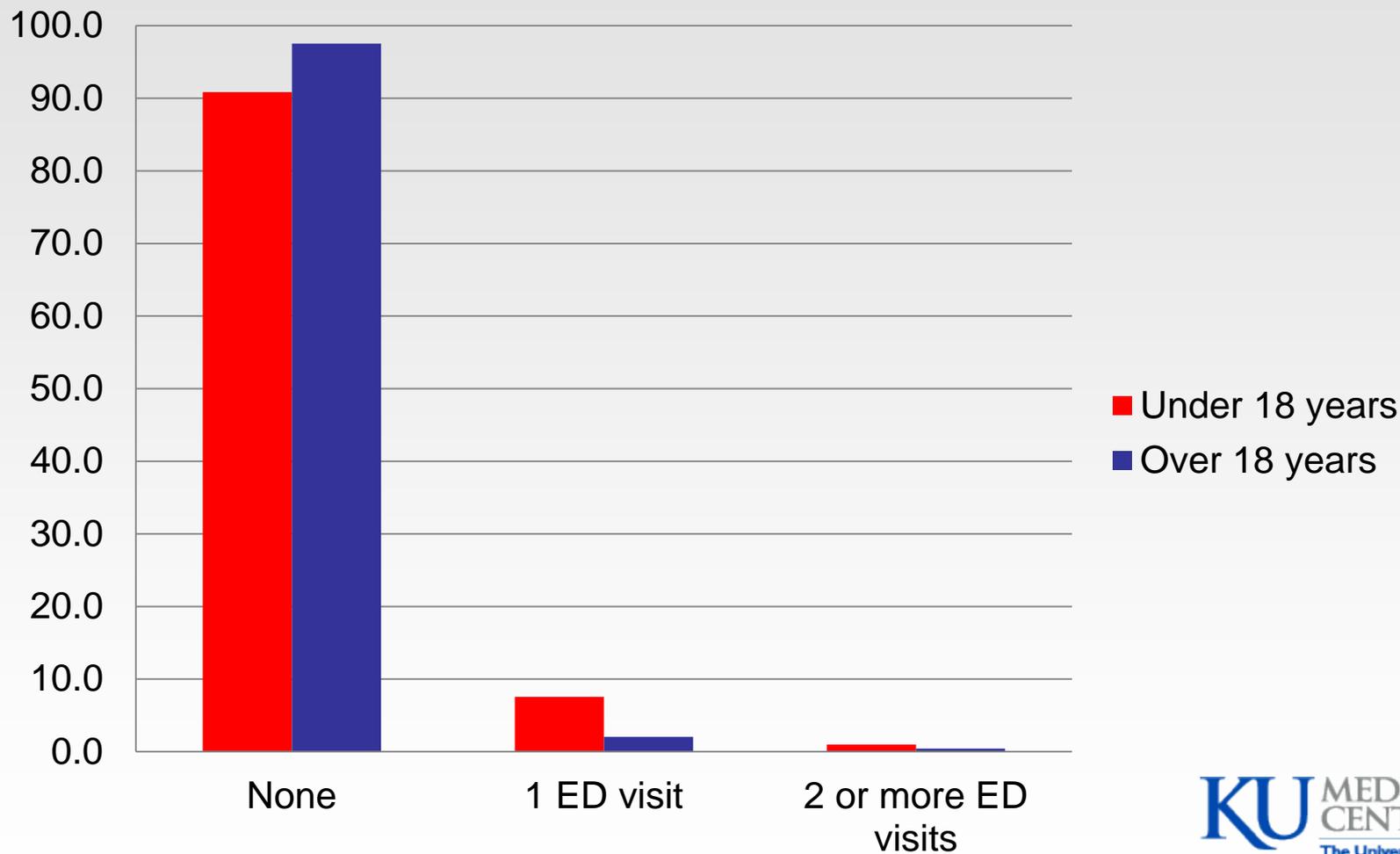
ED visits that lead to admission

| | <u>Overall</u> | <u>Diabetes</u> | <u>Asthma</u> |
|-------------------------------|----------------|-----------------|---------------|
| Benes who have ED visit-admit | 3.2% | | |
| < 18 yrs | | 9.2% | 1.7% |
| 18 + yrs | | 2.5% | 3.2% |
| Range, ED visits-admit | 0-22 | | |
| < 18 yrs | | 0-5 | 0-14 |
| 18 + yrs | | 0-13 | 0-17 |
| ED Visits-admit per 1000 bene | 47 | | |
| < 18 yrs | | 118 | 20 |
| 18 + yrs | | 35 | 37 |

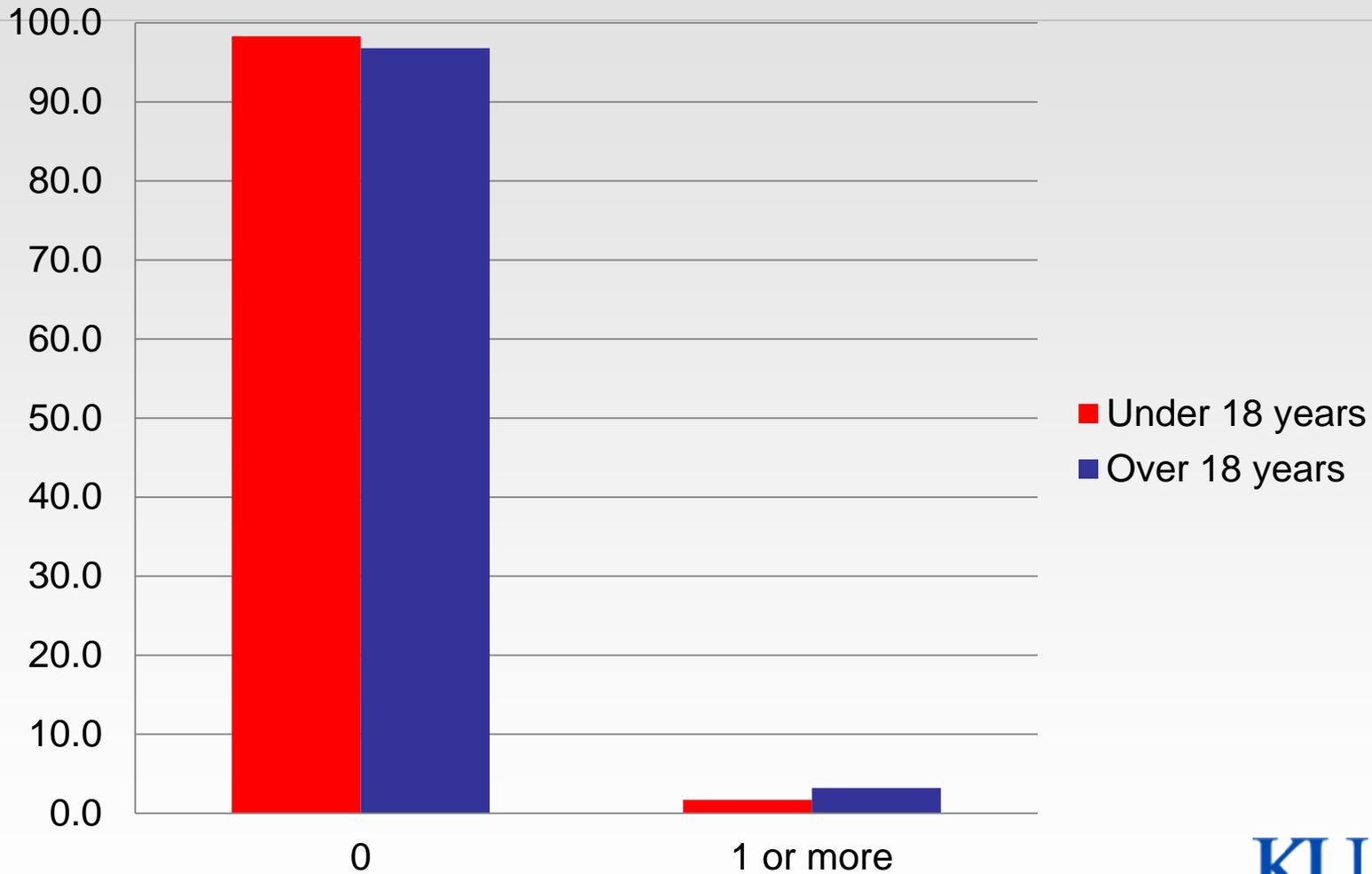
Distribution of ED Visits among Non-SMI



Distribution (%) of ED visits for persons with Diabetes by age (non-SMI)



Distribution of ED visits for persons with Asthma by age (non-SMI)



Inpatient admissions

| | <u>Overall</u> | <u>Diabetes</u> | <u>Asthma</u> |
|------------------|----------------|-----------------|---------------|
| Number-benes | 379,179 | 19,164 | 18,437 |
| < 18 yrs | - | 808 | 6,420 |
| 18 + yrs | - | 18,356 | 12,184 |
| <u>IP admits</u> | | | |
| Mean/1000benes | 115 | | |
| < 18 yrs | - | 142 | 29 |
| 18 + yrs | - | 68 | 52 |
| Range, visits | 0-27 | | |
| < 18 yrs | | 0-5 | 0-5 |
| 18 + yrs | | 0-12 | 0-5 |

Distribution of Inpatient Admissions

| | <u>Overall</u> | <u>Diabetes</u> | <u>Asthma</u> |
|-------------|----------------|-----------------|---------------|
| None | 91.0% | | |
| < 18 yrs | - | 88.5% | 97.4% |
| 18 + yrs | - | 94.8% | 95.4% |
| One | 7.6% | | |
| < 18 yrs | - | 10.0% | 2.4% |
| 18 + yrs | - | 4.3% | 4.1% |
| Two or more | 1.4% | | |
| < 18 yrs | - | 1.5% | 0.1% |
| 18 + yrs | - | 0.9% | 0.5% |

Frequent visitors

- **Identified MDC code for 4+ IP admissions**
- **Primary ICD-9 codes (3-digit level) for ED visits 10+**

10+ ED Visits

| Category | Claim Count |
|------------------------------|-------------|
| Symptoms, Signs & Conditions | 5,772 |
| Injuries | 1,963 |
| Musculoskeletal | 1,544 |
| Respiratory Miscellaneous | 529 |
| Pregnancy & Childbirth | 519 |
| Circulatory | 490 |
| COPD | 403 |
| Male/Female Organ | 396 |
| Kidney Dx | 384 |
| Migraine | 349 |
| Oral Cavity | 323 |
| Skin Diseases | 294 |

Major MDCs for 4+ IP Admissions

| MDC Category | Admit Count |
|---------------------|-------------|
| Respiratory | 767 |
| Circulatory | 660 |
| Digestive | 405 |
| Kidney disease | 341 |
| Metabolic disorders | 331 |
| Infections | 288 |
| Nervous system | 261 |
| Blood disorders | 210 |

Summary

- **Children with diabetes**
 - **Higher rate of ED visits → admission**
 - **Higher admit rate**

- **High ED & IP use does not appear to tell us as much as we expected**

- **Moving on to looking at risk scores & risk behaviors**

Second SPA Target Population: Work in Progress

- MCO partners to give estimates of risk factors (smoking, BMI, substance use)
- KUMC predictive risk modeling:
 - CDPS
 - CRG
 - Identify chronic conditions associated with highest risk beneficiaries according to best-fit model

-
- **Questions? Comments? Suggestions?**
 - **Contact information:**
 - **Theresa Shireman, PhD**
 - **tshireman@kumc.edu**
 - **913-588-2382**