

2018

# Improving Adult BMI Assessment Metric Coding in a Small, Urban Primary Care Setting

Lola MacLean

Follow this and additional works at: [https://pilot scholars.up.edu/nrs\\_gradpubs](https://pilot scholars.up.edu/nrs_gradpubs)

Part of the [Nursing Commons](#), and the [Primary Care Commons](#)

---

## Citation: Pilot Scholars Version (Modified MLA Style)

MacLean, Lola, "Improving Adult BMI Assessment Metric Coding in a Small, Urban Primary Care Setting" (2018). *Nursing Graduate Publications and Presentations*. 28.

[https://pilot scholars.up.edu/nrs\\_gradpubs/28](https://pilot scholars.up.edu/nrs_gradpubs/28)

This Doctoral Project is brought to you for free and open access by the School of Nursing at Pilot Scholars. It has been accepted for inclusion in Nursing Graduate Publications and Presentations by an authorized administrator of Pilot Scholars. For more information, please contact [library@up.edu](mailto:library@up.edu).

## Improving Adult BMI Assessment Metric Coding in a Small, Urban Primary Care Setting

Lola MacLean, BSN, RN, DNP-FNP student  
University of Portland  
Redacted  
Portland, OR 97209  
Redacted

Lola MacLean is a Doctor of Nursing Practice student at the University of Portland and is a practicing operating room nurse.

Amber Vermeesch, PhD, MSN, FNP-C, RN  
University of Portland  
5000 N. Willamette Blvd.  
School of Nursing, MSC 153  
Portland, OR 97203-5798  
Redacted

Amber Vermeesch is an associate professor at the University of Portland and practicing Nurse Practitioner in primary care.

## Improving Adult BMI Assessment Metric Coding in a Small, Urban Primary Care Setting

### Abstract

**Background:** The Adult Body Mass Index (BMI) Assessment measure is defined as the percentage of patients, age 18 to 74, with a documented BMI and weight within the past two years. It is measured using claims data based on current diagnoses coding. The clinic benchmark for this measure is 93%. Baseline data showed the participating clinic (PPCC) to be at 3.6%. A practice improvement project was initiated with the goal of improving Adult BMI Assessment coding from 3.6% to 50%.

**Method:** The intervention included creation of a coding cheat sheet, placement of BMI charts with ICD-10 BMI codes in examination rooms, and education of providers and Medical Assistants (MA) concerning Adult BMI Assessment coding and its importance for patients and reimbursement. Chart review was used to identify the number of patients seen, the number of patients with a documented height/weight/BMI, and the number of patients with a documented ICD-10 BMI code during an 8-week period between September 2016 and November 2016. Percentages of patients with a documented ICD-10 BMI code were calculated each week.

**Results:** Throughout implementation, the percentage of patients with a documented ICD-10 BMI code fluctuated. In week 7, the goal of 50% was obtained with 52% of patients having a documented ICD-10 BMI code.

**Discussion:** Use of ICD-10 code cheat sheets can improve documentation and increase metric scores to improve reimbursement opportunities.

*Keywords:* practice improvement, metrics, coding, ICD-10, primary care

## Improving Adult BMI Assessment Metric Coding in a Small, Urban Primary Care Setting

### Introduction

#### Background

In primary care, metrics are often used independently to assess performance, provide purpose for actions, and promote informed practice change (Stange et al., 2014). Primary care clinics that are members of Coordinated Care Organizations (CCO) use metrics to determine if the clinic is effectively and adequately improving care, making quality care accessible, eliminating health disparities, and controlling costs (Oregon Health Authority [OHA], n.d.). PPCC is a primary care clinic that participates in a CCO and serves predominantly Medicaid recipients. It is a small clinic with two providers and two MAs. As a member of the CCO, PPCC submits five chosen incentive metrics for reimbursement and monitoring of their Medicaid members.

In 2016, PPCC selected the Healthcare Effectiveness and Data Information Set (HEDIS) measure of Adult Body Mass Index (BMI) Assessment as one of its five core metrics. This measure, created in 2009, is part of the Centers for Medicaid and Medicare Services (CMS) 5-star measures (CMS, 2015). The Adult BMI Assessment measure, defined as the percentage of patients, age 18 to 74, with a documented BMI and weight at the same clinic visit within the past two years, uses claims data based on ICD-10 coding of a specific BMI (CareOregon, 2015). At the start of this project, the providers and clinic manager were unaware the metric was measured using ICD-10 coding. Baseline data collected in September 2016 showed PPCC's Adult BMI Assessment measure to be 3.6% based on chart auditing of ICD-10 BMI coding. The lack of ICD-10 BMI documentation has the potential to cause monetary penalization for the clinic.

Assessing and monitoring patient BMI is imperative for the management of weight and weight related health conditions. Obesity is a major risk factor for several leading causes of preventable morbidity and mortality (Kushner, 2012; STOP Obesity Alliance Research Team, 2010) and is linked to a higher use of health care services, as well as higher health care costs (United States Preventive Services Task Force [USPSTF], 2012). Medical expenditures attributable to obesity range from \$1143 to \$6684 per person (Kushner, 2012). This greatly affects Medicaid populations as there is a positive correlation between obesity and poverty, with Medicaid recipients generally having a higher prevalence of obesity and associated medical expenditures than non-Medicaid recipients (Lemay, Cashman, Savageau, & Reidy, 2004; Rose, Gokun, Talbert, & Conigliaro, 2013).

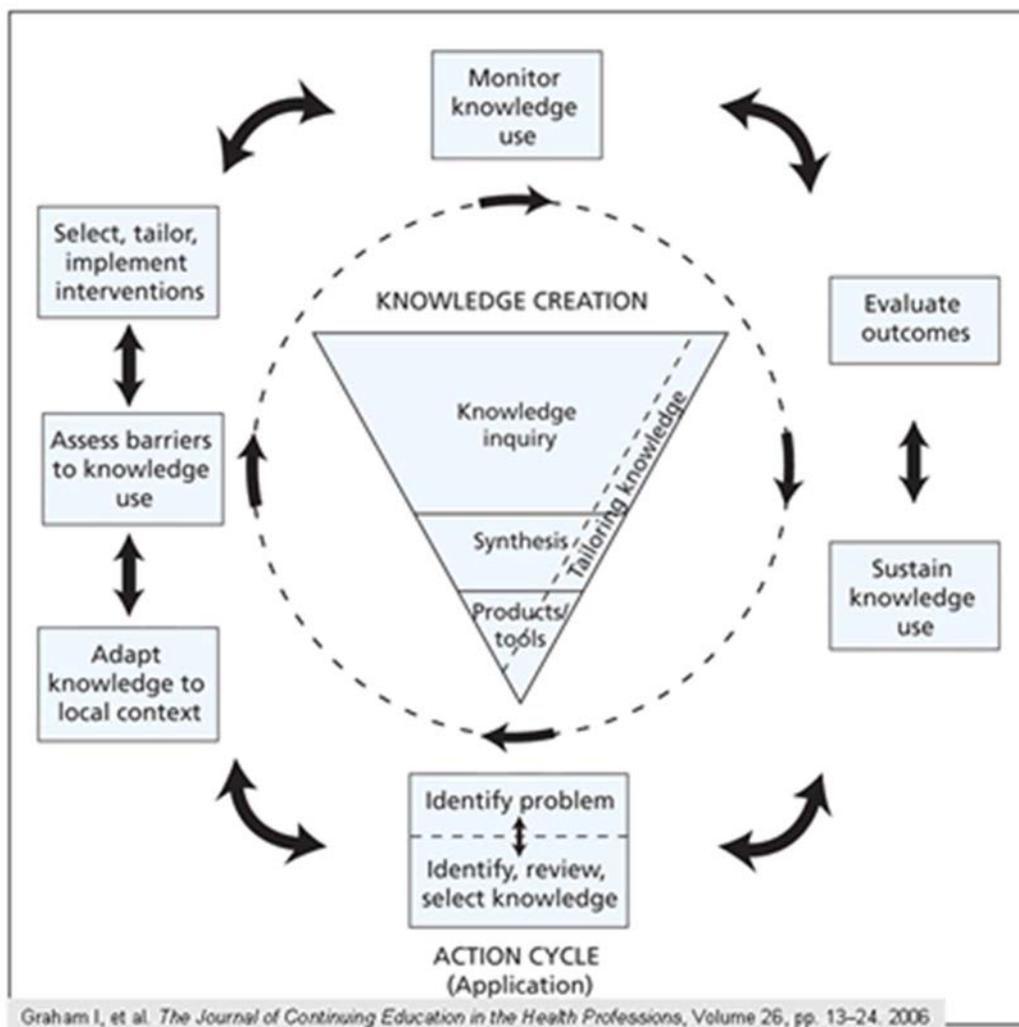
For the purpose of this practice improvement/ quality improvement project, PPCC focused on improving ICD-10 BMI documentation to meet a starting benchmark of 50% over an 8 week period project. After the 8 weeks, PPCC can begin a new action cycle and eventually meet the CMS benchmark for the Adult BMI Assessment metric which is 93%. Meeting the CMS benchmark improves PPCC's ability for reimbursement of their Oregon Health Plan/Medicaid patients, and improves the providers' ability to begin conversations with patients regarding weight and healthy lifestyle choices in order to obtain or maintain a normal BMI.

## **Methods**

### **Implementation Model**

The Knowledge to Action Model (*Figure 1*) was chosen to guide the implementation of this practice change. The Knowledge to Action Model, developed by Graham et al. (2006) at the University of Ottawa, represents the translation of knowledge into practice via knowledge

creation and knowledge application (White, 2012a). The model is intended for use in a wide range of practice domains (White, 2012a), making it an appropriate model for use in the PPCC environment.



\*COPYRIGHTED MATERIAL: PERMISSION REQUIRED

*Figure 1:* Knowledge to action cycle. This figure is a pictorial representation of the steps in the knowledge to action model of implementation.

The central part of the model focuses on knowledge creation (*Figure 1*), while the outer portion illustrates application of knowledge in practice (White, 2012a). Using this model, a lack of knowledge of metric measurement and use of ICD-10 codes associated with BMI was

identified as a problem. Next, a literature search was performed to identify potential evidence-based interventions used in other healthcare settings to improve ICD-10 coding practice.

Using the databases of Medscape and the Cumulative Index of Nursing and Allied Health Literature (CINAHL), seven articles on improving BMI documentation were found. None were found on improving provider coding practices. The quality of evidence present in the literature was low as the articles found were site-specific quality improvement projects with varied suggestions on how to improve BMI documentation. The most common suggestions were chart prompting and EMR implementation (Bode, Roberts, & Johnson, 2013; Keehbauch et al., 2012; Bordowitz, Morland, & Reich, 2007), protocol education (Greenwood, Narus, Leiser, & Egger, 2010), and multi-intervention approaches that included education and tailoring the clinic environment to improve documentation (Laiteerapong et al., 2011; Lemay, Cashman, Savgeau, & Reidy, 2004).

### **Intervention**

After a review of the literature and synthesis of the evidence, the above suggestions for improving documentation were presented to the clinic manager. Through discussions with providers, MAs, and the clinic manager, potential barriers for these suggestions were discussed (e.g. PPCC is a small clinic lacking the resources to spend on EMR updates). From these discussions, a multi-intervention approach was selected as the best option, and was tailored to meet PPCC's needs and clinic environment. This was achieved through the creation of coding cheat sheets and BMI charts with ICD-10 codes for use as coding reminders and aids. The cheat sheets are shown below. Education on the importance of the Adult BMI Assessment metric, how it is measured, and the importance of accurate documentation for reimbursement was given to

providers, MAs, and clinic staff. Prior to implementation, IRB approval and provider/MA consent was obtained.

### *BMI Coding Cheat Sheet*

## **Adult BMI Assessment**

### **About the metric:**

- One of the Medicare Star Measures
- Percentage of patients between the ages of 18 and 74 who had their BMI calculated and recorded in their record

### **Measurement:**

- Members 21 and older who had their *weight and BMI value* documented: Or younger than 21 years of age, have *weight and BMI percentile* **Divided BY** All patients of the clinic between the ages of 18 and 74
- Exclusions: pregnancy

### **How is it being measured?**

- Using claims data based on coding for the assessment

### **What needs to be documented?**

- 21-74: Weight and BMI value dated within the past two years-must be from the same data source (i.e. same patient visit).
- 18-21: Height, weight and BMI percentile-must be from the same data source (i.e. same patient visit).

### **Codes that count:**

BMI ICD-10: Z68.1, Z68.20-Z68.45

BMI Percentile: Z68.51-Z68.54

*BMI Coding Cheat Sheet Cont.***What the Codes Mean****BMI ICD-10 Adult:**

Z68.1 = BMI of 19 or less

Z68.20 - Z68.29 = these correspond with BMI of 20.0-29.9; E.G. a patient's BMI is 24 –  
the code entered would be Z68.24

Z68.30 - Z68.39 = these correspond with BMI of 30.0-39.9; E.G. a patient's BMI is 36.4-  
the code entered would be Z68.36

Z68.40 = BMI of 40 or greater

Z68.41 = BMI of 40.0 - 44.9

Z68.42 = BMI of 45.0 – 49.9

Z68.43 = BMI of 50.0 – 59.9

Z68.44 = BMI of 60.0 – 69.9

Z68.45 = BMI of 70 or greater

**BMI Percentile ICD-10 Pediatric:**

Z68.51 = less than 5<sup>th</sup> percentile for age

Z68.52 = 5<sup>th</sup> percentile to less than 85<sup>th</sup> percentile for age

Z68.53 = 85<sup>th</sup> percentile to less than 95<sup>th</sup> percentile for age

Z68.54 = greater than or equal to 95<sup>th</sup> percentile for age

BMI Chart with Coding Ranges



Body Mass Index (BMI)

|        | HEALTHY            |     |     |     |     | OVERWEIGHT |     |     |     |     | OBESITY          |     |     |     |     |     |     |     | EXTREME OBESITY |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|--------|--------------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------------|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| BMI    | 19                 | 20  | 21  | 22  | 23  | 24         | 25  | 26  | 27  | 28  | 29               | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37              | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  | 47  | 48  | 49  | 50  |  |  |  |
| HEIGHT | WEIGHT (IN POUNDS) |     |     |     |     |            |     |     |     |     |                  |     |     |     |     |     |     |     |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 4'10"  | 91                 | 96  | 100 | 105 | 110 | 115        | 119 | 124 | 129 | 134 | 138              | 143 | 148 | 153 | 158 | 162 | 167 | 172 | 177             | 181 | 186 | 191 | 196 | 201 | 205 | 210 | 215 | 220 | 224 | 229 | 234 | 239 |  |  |  |
| 4'11"  | 94                 | 99  | 104 | 109 | 114 | 119        | 124 | 128 | 133 | 138 | 143              | 148 | 153 | 158 | 163 | 168 | 173 | 178 | 183             | 188 | 193 | 198 | 203 | 208 | 212 | 217 | 222 | 227 | 232 | 237 | 242 | 247 |  |  |  |
| 5'     | 97                 | 102 | 107 | 112 | 118 | 123        | 128 | 133 | 138 | 143 | 148              | 153 | 158 | 163 | 169 | 173 | 179 | 184 | 189             | 194 | 199 | 204 | 209 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | 250 | 255 |  |  |  |
| 5'1"   | 100                | 106 | 111 | 116 | 122 | 127        | 132 | 137 | 143 | 148 | 153              | 158 | 164 | 169 | 174 | 180 | 185 | 190 | 195             | 201 | 206 | 211 | 217 | 222 | 227 | 232 | 238 | 243 | 248 | 254 | 259 | 264 |  |  |  |
| 5'2"   | 104                | 109 | 115 | 120 | 126 | 131        | 136 | 142 | 147 | 153 | 158              | 164 | 169 | 174 | 180 | 185 | 191 | 196 | 202             | 207 | 213 | 218 | 224 | 229 | 235 | 240 | 246 | 251 | 256 | 262 | 267 | 273 |  |  |  |
| 5'3"   | 107                | 113 | 118 | 124 | 130 | 135        | 141 | 146 | 152 | 158 | 163              | 169 | 175 | 180 | 186 | 192 | 197 | 203 | 208             | 214 | 220 | 225 | 231 | 237 | 242 | 248 | 254 | 259 | 265 | 270 | 276 | 282 |  |  |  |
| 5'4"   | 110                | 116 | 122 | 128 | 134 | 140        | 145 | 151 | 157 | 163 | 169              | 174 | 180 | 186 | 192 | 197 | 204 | 209 | 215             | 221 | 227 | 232 | 238 | 244 | 250 | 256 | 262 | 267 | 273 | 279 | 285 | 291 |  |  |  |
| 5'5"   | 114                | 120 | 126 | 132 | 138 | 144        | 150 | 156 | 162 | 168 | 174              | 180 | 186 | 192 | 198 | 204 | 210 | 216 | 222             | 228 | 234 | 240 | 246 | 252 | 258 | 264 | 270 | 276 | 282 | 288 | 294 | 300 |  |  |  |
| 5'6"   | 118                | 124 | 130 | 136 | 142 | 148        | 155 | 161 | 167 | 173 | 179              | 186 | 192 | 198 | 204 | 210 | 218 | 223 | 229             | 235 | 241 | 247 | 253 | 260 | 266 | 272 | 278 | 284 | 291 | 297 | 303 | 309 |  |  |  |
| 5'7"   | 121                | 127 | 134 | 140 | 146 | 153        | 159 | 166 | 172 | 178 | 185              | 191 | 198 | 204 | 211 | 217 | 223 | 230 | 236             | 242 | 248 | 255 | 261 | 268 | 274 | 280 | 287 | 293 | 299 | 306 | 312 | 319 |  |  |  |
| 5'8"   | 125                | 131 | 138 | 144 | 151 | 158        | 164 | 171 | 177 | 184 | 190              | 197 | 203 | 210 | 216 | 223 | 230 | 236 | 243             | 249 | 256 | 262 | 269 | 276 | 282 | 289 | 295 | 302 | 308 | 315 | 322 | 328 |  |  |  |
| 5'9"   | 128                | 135 | 142 | 149 | 155 | 162        | 169 | 176 | 182 | 189 | 196              | 203 | 209 | 216 | 223 | 230 | 236 | 243 | 250             | 257 | 263 | 270 | 277 | 284 | 291 | 297 | 304 | 311 | 318 | 324 | 331 | 338 |  |  |  |
| 5'10"  | 132                | 139 | 146 | 153 | 160 | 167        | 174 | 181 | 188 | 195 | 202              | 209 | 216 | 222 | 229 | 236 | 243 | 250 | 257             | 264 | 271 | 278 | 285 | 292 | 299 | 306 | 313 | 320 | 327 | 334 | 341 | 348 |  |  |  |
| 5'11"  | 136                | 143 | 150 | 157 | 165 | 172        | 179 | 186 | 193 | 200 | 208              | 215 | 222 | 229 | 236 | 243 | 250 | 257 | 265             | 272 | 279 | 286 | 293 | 301 | 308 | 315 | 322 | 329 | 338 | 343 | 351 | 358 |  |  |  |
| 6'     | 140                | 147 | 154 | 162 | 169 | 177        | 184 | 191 | 199 | 206 | 213              | 221 | 228 | 235 | 243 | 250 | 258 | 265 | 272             | 279 | 287 | 294 | 302 | 309 | 316 | 324 | 331 | 338 | 346 | 353 | 361 | 368 |  |  |  |
| 6'1"   | 144                | 151 | 159 | 166 | 174 | 182        | 189 | 197 | 204 | 212 | 219              | 227 | 235 | 242 | 250 | 257 | 265 | 272 | 280             | 288 | 295 | 302 | 310 | 318 | 325 | 333 | 340 | 348 | 355 | 363 | 371 | 378 |  |  |  |
| 6'2"   | 148                | 155 | 163 | 171 | 179 | 186        | 194 | 202 | 210 | 218 | 225              | 233 | 241 | 249 | 256 | 264 | 272 | 280 | 287             | 295 | 303 | 311 | 319 | 326 | 334 | 342 | 350 | 358 | 365 | 373 | 381 | 389 |  |  |  |
| 6'3"   | 152                | 160 | 168 | 176 | 184 | 192        | 200 | 208 | 216 | 224 | 232              | 240 | 248 | 256 | 264 | 272 | 279 | 287 | 295             | 303 | 311 | 319 | 327 | 335 | 343 | 351 | 359 | 367 | 375 | 383 | 391 | 399 |  |  |  |
| 6'4"   | 156                | 164 | 172 | 180 | 189 | 197        | 205 | 213 | 221 | 230 | 238              | 246 | 254 | 263 | 271 | 279 | 287 | 295 | 304             | 312 | 320 | 328 | 336 | 344 | 353 | 361 | 369 | 377 | 385 | 394 | 402 | 410 |  |  |  |
|        | ← REDUCED RISK     |     |     |     |     |            |     |     |     |     | INCREASED RISK → |     |     |     |     |     |     |     |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |

Health Risks Associated with Obesity

- Insulin resistance (*type 2 Diabetes*)
- High blood pressure
- Depression
- Elevated cholesterol
- Coronary heart disease
- Premature death
- Sleep apnea
- Stroke
- Other \_\_\_\_\_
- Osteoarthritis
- Many types of cancer

5/04 PM 6/12

Image: (Mayo Clinic Health Systems, 2012, <http://www.innerimage.com/resources/interpreting-your-results/>) \*COPYRIGHTED MATERIAL: PERMISSION REQUIRED

Adult BMI ICD 10 Codes:

- Z68.1 = BMI of 19 or less
- Z68.20 - Z68.29 = these correspond with BMI of 20.0-29.9
- Z68.30 - Z68.39 = these correspond with BMI of 30.0-39.9
- Z68.40 = BMI of 40 or greater
- Z68.41 = BMI of 40.0 - 44.9
- Z68.42 = BMI of 45.0 - 49.9
- Z68.43 = BMI of 50.0 - 59.9
- Z68.44 = BMI of 60.0 - 69.9
- Z68.45 = BMI of 70 or greater

## Data Collection and Measures

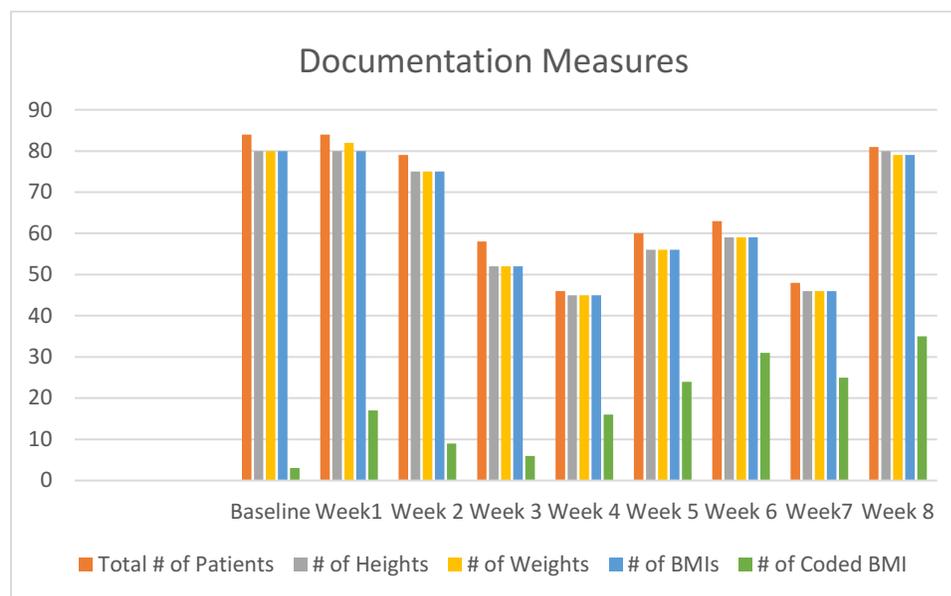
Weekly chart reviews were performed to monitor knowledge use and regularly evaluate outcomes. Charts of patients seen during the week who met the inclusion criteria were audited for documentation of height, weight, BMI, and an ICD-10 BMI code at the same visit within the past two years. During baseline data collection, it was noted providers often used the ICD-10 code of Obesity not Specified (E69). This code is not recognized by Care Oregon for the Adult BMI Assessment measure. The use of this ICD-10 code was recorded weekly as an incorrectly coded BMI.

The Knowledge to Action Model (*Figure 1*) suggest monitoring knowledge use through formative evaluation. This was completed through scheduled check-ins with the providers, MAs, and office manager weekly. During these check-ins, providers, MAs, and the office manager were asked three questions: 1) How do you think improving the Adult BMI Assessment screening rates is going?, 2) Have you found any barriers, workarounds, or success to improving screening rates this week?, 3) Do you have any suggestions, concerns or questions about this practice change? Answers to these questions were utilized as feedback. Suggestions that were made were shared with the group and the office manager approved changes to further improve the Adult BMI Assessment screening documentation.

## Results

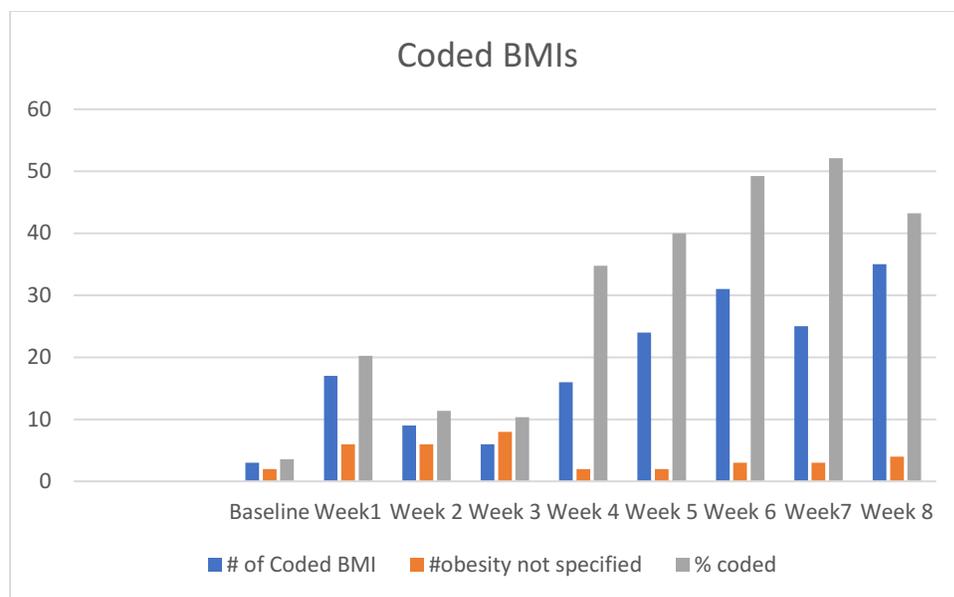
Figure 2 shows the total number of patients seen each week, the number of heights, weights, and BMIs recorded, and the number of correct ICD-10 BMI diagnoses. Height, weight, and BMI were documented for over 90% of patients seen each week. The number of ICD-10 coded BMIs fluctuated over the course of data collection. At baseline, 3.6% of BMIs were coded. This percentage rose to 20% during week 1 following the intervention. During week 2

and 3, the percentage of patients with a coded ICD-10 BMI decreased to 10%. During weeks 4, 5, 6, and 7, the percentage of patients with a coded ICD-10 BMI steadily rose to a cap of 52%. This percentage decreased to 43% again in week 8.



*Figure 2: Documentation Measures.* This graph represents the weekly totals of number of patients seen, number of heights/weights/BMIs recorded, and the number of patients with a correctly coded ICD-10 BMI diagnosis code.

Figure 3 shows the percentage of patients with a correct ICD-10 BMI diagnosis code compared to the total number of patients seen each week. As stated above, this percentage fluctuated over the data collection period. During week 1, the number of patients with a documented ICD-10 BMI increased from 3.6% to 20%. In week 7, the percentage of patients with a documented ICD-10 BMI peaked at 52%. Reasons for these fluctuations are explored below in the discussion.



*Figure 3: Coded BMIs.* This graph shows the number of correctly documented ICD-10 BMI codes, the number of patients with incorrectly documented ICD-10 BMI codes, and the percentage of patients with a correctly documented ICD-10 BMI diagnosis code.

### Discussion

Baseline measurements showed only 3.6% of patients had a correct ICD-10 code for BMI. During the first week of implementation, the percent of patients with a recorded height, weight, and BMI remained the same, but the percentage of patients with an ICD-10 code for BMI increased to 20%. Over the next two weeks, ICD-10 codes for BMI decreased to about 10%. This was possibly due to one of two providers being absent for those two weeks. Based on this decrease, the clinic manager asked if one MA would assume the responsibility of documenting ICD-10 BMI codes for patients seen by her assigned provider, i.e. one provider documented codes for patients she saw, while the other provider had her MA document the codes. Consequently in week 4 of implementation, the percentage of patients with a coded BMI for that week went up to 34.8%. Over the next 4 weeks, this percentage continued to increase,

hitting a maximum of 52% in week 7 and dropping back to 43% in week 8. This could possibly be due to the MA being gone for two days during that week.

It is important to note that patient height, weight, and BMI were documented in over 90% of patient visits each week. These numbers did not change during the implementation process. The practice change was geared towards increasing the percentage of patients with a documented ICD-10 code for BMI, not improving documentation of height, weight, or BMI. During the eight weeks of data collection, the percentage rose from a baseline of 3.6% to a height of 52.1%. This is a clinically significant increase. However, the percentage of patients with an ICD-10 BMI specific code remains well below the CMS benchmark of 93%. Possible contributing factors to the low coding rate include provider absence, MA absence, and the holiday season.

Process data was also collected throughout the implementation. Feedback around the cheat sheets and in-room BMI charts was primarily positive, with most saying that these items were helpful for documentation. The providers and MAs also stated having easy access to these codes made it more likely they would document ICD-10 codes. Providers stated the in-room BMI charts also served as a visual reminder for them. However, providers suggested the topic of BMI did not always come up during patient visits, especially if they were focused visits surrounding a specific complaint and had limited time to meet with the patient. This decreased the likelihood of them charting an ICD-10 code for BMI on that patient. Providers and the clinic manager also shared that many patients did not come in for annual wellness exams or follow up after receiving focused care. During these wellness and follow up examinations, providers have time to discuss health prevention and promotion, including information about BMI and healthy weight. Additional feedback from the MA who took on the responsibility of charting ICD-10 BMI codes in week 4 highlighted an area for further improvement by stating “I would be able to

enter more ICD-10 BMI codes if the provider I worked with did not sign off on the charts so quickly”. These barriers could be addressed through use of a Plan-Do-Study-Act (PDSA) cycle, that would aid in increasing ICD-10 BMI coding documentation to meet the current CMS 5-Star benchmark.

### **Conclusion**

In primary care, metrics are often used independently to assess performance, provide purpose for actions, and promote informed practice change (Stange et al., 2014). In 2016, PPCC selected the HEDIS measure of Adult BMI Assessment as one of its five core metrics to report for patient monitoring and reimbursement. It is measured through billing claims data associated with an ICD-10 code. At the start of this project, the providers and clinic manager were unaware the metric was measured using ICD-10 coding. Baseline data collected in September 2016 showed PPCC’s Adult BMI Assessment measure to be 3.6% based on chart auditing ICD-10 BMI diagnoses codes.

To improve BMI diagnoses coding from 3.6%, coding cheat sheets and BMI charts with ICD-10 codes were created. These were used by providers and MAs as a reminder and aid in documenting correct BMI diagnoses codes. Education concerning these aids and the importance of the Adult BMI Assessment metric was provided to providers, MAs, and clinic staff. These practice changes were implemented using the Knowledge to Action Model of Implementation (*Figure 1*). A clinically significant improvement was noted throughout the eight week data collection process. The percentage of patients with an ICD-10 BMI diagnosis code rose from 3.6% to a high of 52.1%. However, this is still well below the CMS benchmark of 93%. Continued improvement possibly be made with additional education, reminders, or alterations to the coding aids through the use of a quality improvement PSDA cycle.

## References

- Bode, D. V., Roberts, T. A., & Johnson, C. (2013). Increased adolescent overweight and obesity documentation through a simple electronic medical record intervention. *Military Medicine* 178(1), 115-118. doi: 10.7205/MILMED-D-12-00201.
- Bordowitz, R., Morland, K., & Reich, D. (2007). The use of an electronic medical record to improve documentation and treatment of obesity. *Family Medicine* 39(4), 274-279.
- CareOregon. (2015, November 10). *2015 clinical quality metrics toolkit*. Retrieved from [http://www.careoregon.org/res/documents/providers/CareOregon\\_Clinical\\_Quality\\_Metrics\\_Toolkit\\_2015.pdf](http://www.careoregon.org/res/documents/providers/CareOregon_Clinical_Quality_Metrics_Toolkit_2015.pdf).
- Centers for Medicaid and CHIP services & Centers for Medicare and Medicaid. (2015, April). *Core set of adult health care quality measures for Medicaid (adult core set): Technical specifications and resource manual for federal fiscal year 2015 reporting*. Retrieved from <https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Downloads/Medicaid-Adult-Core-Set-Manual.pdf>.
- Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: time for a map? *Journal of Continuing Education in the Health Professions* 26(1), 13-24.
- Greenwood, J. L. J., Narus, S. P., Leiser, J., & Egger, M. J. (2010). Measuring body mass index according to protocol: how are height and weight obtained? *Journal for Healthcare Quality* 33(3), 28-36.
- Keehbauch, J., San Miguel, G., Drapiza, L., Pepe, J., Bogue, R., & Smith-Dixon, A. (2012).

- Increased documentation and management of pediatric obesity following implementation of an EMR upgrade and education. *Clinical Pediatrics* 51(1), 31-38. doi: 10.1177/0009922811417293.
- Kushner, R. F. (2012). Clinical assessment and management of adult obesity. *Circulation* 126, 2870-2877. doi: 10.1161/circulationha.111.075424.
- Laiterapon, N., Keh, C. E., Naylor, K. B., Yang, V. L., Vinci, L. M., Oyler, J. L., & Arora, V. M. (2011). A resident-led quality improvement initiative to improve obesity screening. *American Journal of Medical Quality* 26(4), 315-322. doi: 10.1177/1062860610395930.
- Lemay, C. A., Cashman, S. B., Savageau, J. A., & Reidy, P. A. (2004). Effect of a low-cost intervention on recording body mass index in patients' records. *Journal of Nursing Scholarship* 36(4), 312-315.
- Mayo Clinic Health Systems. (2012, June). *Body Mass Index (BMI)*. Retrieved from <http://www.inner-image.com/resources/interpreting-your-results/>
- Oregon Health Authority. (n.d.). Metrics and scoring committee. Retrieved from <http://www.oregon.gov/oha/analytics/Pages/Metrics-Scoring-Committee.aspx>.
- Rose, S. A., Gokun, Y., Talbert, J., & Conigliaro, J. (2013). Screening and management of obesity and perceptions of weight status in Medicaid recipients. *Journal of Health Care for the Poor and Underserved* 24(2), 34-46. doi: 10.1353/hpu.2013.0098.
- Stange, K. C., Etz, R. S., Gullett, H., Sweeney, S. A., Miller, W. L., Jaen, C. R., ... & Glasgow, R. E. (2014). Metrics for assessing improvements in primary health care. *Annual Review Public Health*, 35, 423-442. doi: 10.1146/annurev-publhealth-032013-182438.
- STOP Obesity Alliance Research Team. (2010, March 16). *Improving obesity management in*

*adult primary care*. Washington, DC: The George Washington University School of Public Health and Health Services.

United States Preventive Services Task Force. (2012). *Final recommendation statement: obesity in adults: screening and management*. Retrieved from <http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/obesity-in-adults-screening-and-management>.

White, K. M. (2012a). The science of translation and major frameworks. In K. W. White & S. Dudley-Brown (Eds.), *Translation of evidence into nursing and health care practice* (pp. 23-48). New York, NY: Springer Publishing Company.