Good afternoon. I will present the first of a two part presentation assessing the quality and potential misclassification of the Primary Payer at Diagnosis data item. The MCTR teamed up with Recinda Sherman at NAACCR to look at the potential misclassification of this variable in the Montana central registry and in the CiNA dataset.
The objectives for this presentation are:

1. To describe the misclassification of primary payer reported to the Montana Central Tumor Registry.

2. Share methods used to assess potential primary payer misclassification so that other central registries may assess misclassification in their data.

3. Discuss challenges of collecting primary payer in Montana and potential strategies to improve primary payer reporting.
In Montana and across the US, we know that working towards health equity is paramount to successful cancer control and prevention. Health disparities studies have shown that an individual's socio-economic status is associated with access to care and obtaining quality care and timely treatment.

As a population-based cancer registry, we offer lots of data describing patient’s diagnoses, treatment, and survival. However, we collect relatively little information describing a patient's socio-economic status, with the exception of Primary Payer at Diagnosis.

Primary Payer at Diagnosis is and has been used by researchers as a proxy for socio-economic in health disparities studies. This variable has the potential to be a valuable data item in describing and evaluating access to care in Montana, particularly after many more Montanans have received health insurance through the health insurance exchange and Medicaid Expansion. However, we have rarely used this data item to inform cancer control and public health activities in our State.

Thus, the motivation for this project for Montana was to assess the validity and usability of Primary Payer in hopes that we can use this variable with our cancer control partners to describe the health disparities in our state and better target our public health activities.
The intent of the Primary Payer at DX variable to is collect information on the patient’s insurance status the first time they are seen/present at the facility. This is important because a patient who comes in with no health insurance may have very different outcomes than an insured patient. Unlike other variables collected in the cancer abstract, less information can mean more. Often the uninsured are able to get insurance after a cancer diagnosis – such as Medicaid – and that insurance will pay retroactively. Still the fact that they were initially uninsured is important information to epidemiologists and researchers. The uninsured may delay diagnosis, delay the start of treatment, not pursue treatment, etc.
In order assess the validity of Primary Payer at Diagnosis we descrie the misclassification of payer among a subset of cases known to be either NOT INSURED or covered by MEDICAID or covered by Indian Health Services.
## Methods

<table>
<thead>
<tr>
<th>Expected Primary Payer</th>
<th>Defined as:</th>
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<tbody>
<tr>
<td>UNINSURED</td>
<td>Breast and cervical cancers (in-situ and invasive)</td>
</tr>
<tr>
<td></td>
<td><em>linked with</em> National Breast and Cervical Cancer Early Detection and Prevention Program (NBCCEDP)</td>
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<tr>
<td>MEDICARE</td>
<td>Invasive case 65 years and older</td>
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<tr>
<td>INDIAN HEALTH SERVICES</td>
<td>American Indian cases LT 65 years</td>
</tr>
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<td></td>
<td>And residents of CHSDA counties</td>
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Cases included in this analysis were diagnosed between 2004 and 2013. Because there are no consolidation rules for Primary Payer, we analyzed unconsolidated records. Only analytic facilities were included in the analysis (class of case 00-22). To calculate percentages, the denominator equaled the number of reporting facilities.
We also assessed how reported primary payer in the Montana Central Tumor Registry compared to the American Community Survey. Pearson correlation coefficients were calculated by census tract. Where percent of public, private, and uninsured were by census tract were compared to that reported by the American Community survey.
RESULTS
Known Uninsured
only 20% reported as “NO INSURANCE”
Known Uninsured
45% reported as “MEDICAID”

Medicaid 45.0%
No insurance 20.0%
NBCCEDP link
Known Uninsured

remaining 35% reported as “INSURANCE, NOS” and other payer categories

- Insurance, NOS: 18.2%
- Medicaid: 45.0%
- No insurance: 20.0%

NBCCEDP link
We found that identifying NO INSURANCE did not vary by class of case. However, diagnosing only facilities reported a lower percentage of these patients and MEDICAID—only 16%—and instead reported them as INSURANCE NOS. Meanwhile Treatment only and Diagnosis and treatment facilities reported 46%-52% of these patients as MEDICAID.
Known Uninsured
80% of self report ‘NO INSURANCE’ were coded with some type of insurance

<table>
<thead>
<tr>
<th></th>
<th>No insurance</th>
<th>Under insured</th>
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<tbody>
<tr>
<td>No Insurance</td>
<td>21%</td>
<td>13%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>47%</td>
<td>51%</td>
</tr>
<tr>
<td>Insurance, NOS</td>
<td>16%</td>
<td>6%</td>
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Self-reported insurance status at screening program enrollment
Known Public Insurance

1 in 6 facilities reported payer other than Medicare among patients 65+

Medicare 83.8%

All-site aged 65+
Known Public Insurance
% of facilities that report Medicare increased with patient age

<table>
<thead>
<tr>
<th>Age at diagnosis</th>
<th>65</th>
<th>66</th>
<th>67</th>
<th>68</th>
<th>69</th>
<th>70-74</th>
<th>75-79</th>
<th>80-84</th>
<th>85+</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>70%</td>
<td>76%</td>
<td>79%</td>
<td>77%</td>
<td>83%</td>
<td>84%</td>
<td>87%</td>
<td>88%</td>
<td>90%</td>
</tr>
</tbody>
</table>
Known Public Insurance

Poor correlation between registry and American Community Survey among 65+

Pearson correlation,
\[ r = 0.03 \]
\[ p = 0.85 \]
Suspect Indian Health Services
49% reported non-IHS and 8% reported unknown/no insurance.
Private & Public insurance
Aged 45-64
Low correlation between registry and American Community Survey

PRIVATE
$r=0.42$
$p=<0.01$

PUBLIC
$r=0.43$
$p<0.01$
No Insurance, Aged 45-64
Poor correlation between registry and American Community Survey

NO INSURANCE
r = 0.15
p = 0.01
In May 2016 the MCTR presented these findings to the Montana Cancer Registrar’s Association. The members provided feedback insight into data collection and coding challenges they experience and they also made a few suggestions for improvement.

The first issue they identified was that they were unaware of the intention of this variable and unaware that anyone ever did anything with this data item. There was a big “ah ha” moment among registrars upon the realization that this variable is meant to capture insurance status the first time the patient is seen at the facility. The mentality needed to correctly code the un- or under-insured patients is opposite of every other data item CTRs code. CTRs are trained to always look for the most complete and detailed information as possible. Thus, it makes sense that coding the uninsured patient who later gets insurance would be miscoded. The correct answer, ‘no insurance’, is the least amount of information and is not what they do for any other variable.

Another data collection issue they identified was that insurance information need to correctly code (i.e. historic insurance status) is not available at every facility. Some facilities have face sheets for each visit, which enables registrars to find the patients insurance status at the time of diagnosis. Meanwhile, at other facilities, registrars get this information from the hospitals billing system and the only information available is the present insurance status. By the time the registrar is abstracting a case a previously uninsured patient may have gained health insurance.

Thirdly, registrars felt that they lacked knowledge of the insurance system needed to
correctly code. For example, is Montana Medicaid a managed care program (code 35 or 31)? How do interpret this patient’s Medicare plan? Is this particular plan managed care or is it a private supplement (code 62 or 63)?

Finally, registrars identified that a lack of coding rules is problematic. For example, what do they code in situations were a patient has two different health insurance plans? One registrar had a patient who was covered by both IHS and Medicare. Which one does she code?
Members of the MCRA also identified opportunities for improvement. The development of coding rules would help. Coding rules should also include direction on the hierarchy of which plans should be coded for situations in which the patient has more than one insurance plan. Additionally, training on the health insurance system including details on which payers pay first, how to tell if plans are managed care, etc is needed.

At the central registry, consolidation rules are needed. It is not uncommon for reporting facilities to have different codes for each patient. How do we decide which is code to use when consolidating records? Additionally, this analysis demonstrated that there are situations in which we KNOW what a patient’s insurance should be. Can or should the central registry recode primary payer for those cases?
From this assessment in Montana we feel that primary payer is generally okay at identifying the insurance status of most cancer patients.

We did find, however, that this variable is poor at identifying the uninsured and strategies to improve identification of these patients needs to be developed.

We compared reported payer in the registry to the census, however it is unknown if census data representing the general population is a fair comparison for cancer patients. Thus we are interpreting the correlation coefficients I presented earlier with caution.
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THANK YOU!