Incidence of non-melanoma skin cancer in the Medicare Advantage population

Background
Incident cases of non-melanoma skin cancer (NMSC), or keratinocyte carcinoma, exceed that of all other cancers combined and have been increasing steadily in recent decades. Because cancer registries do not track NMSC, secondary data sources must be used to estimate the epidemiology. Prior studies have reported the incidence of NMSC in original Medicare population, but not in Medicare Advantage - the Medicare benefit administered by private companies.1-3

Objective
The objective of this study was to determine the incidence of NMSC in the Medicare Advantage population in 2014.

Methods
- NMSC diagnostic and procedure codes were extracted from the administrative claims data of a single Medicare Advantage plan during the 2014 calendar year.
- The incident treated NMSC (excision, destruction, Mohs) and incident patients with NMSC (because a patient could have more than one NMSC), rates per 1000 people with Medicare Advantage insurance were reported.
- Rates were age- and state-adjusted using a direct standardization method. Age intervals were used (<65, 65-74, 75-79, 80-84, and 85+ years). All rates were extrapolated to the US Medicare Advantage population using published state distributions from Kaiser and age distributions from the Medicare 5% sample.1

Discussion of Findings
In 2014, we estimate the age/state adjusted number of new treated NMSCs in the Medicare Advantage population to be 865,808 and the number of persons with new NMSC to be 477,340. In 2012, the US estimates were 5,434,193 and 3,315,554 respectively, without inclusion of the Medicare Advantage population. Thus, the true incidence of NMSC is likely higher than previously reported. We found the treated NMSC rate / patient to be 1.81, which is slightly higher than what was reported in 2012 for the original Medicare population, 1.64 treated NMSC / patient. Relative to 2012 original Medicare data, the incident treated NMSC was lower in our study, 69/1000 people vs. 59/1000 people. The distributions of procedure types (excision, destruction, Mohs) and cancer types (basal cell, squamous cell) were fairly even in our study. As expected, the incident NMSC and incident patients with NMSC increased as age increased, and there are state-level variations in incidences.

Limitations
- This study uses data from one insurer, representing approximately 13% of the total Medicare Advantage population in 2014, to estimate the national Medicare Advantage incidence. The incident rates were extrapolated to the full Medicare Advantage population. The rates from states in which the studied insurer has a smaller relative population may be not representative of the true incidence rates in those states.

Results

Figure 1. Derivation of Incident Rates
2014 Study Sample Population Size: 2,076,102

<table>
<thead>
<tr>
<th>Age- and state adjusted by 2014 US Medicare Advantage Population Size: 14,756,189</th>
</tr>
</thead>
</table>

865,808 treated NMSCs among
477,340 persons with NMSC, or
1.81 treated NMSCs / patient

59 treated NMSCs / 1000 people
32 persons with NMSC / 1000 people

Figure 2. Distribution of Procedure and Cancer Type*

Figure 3. Incident treated NMSC rates/1000 people by state*

Figure 4. Incident treated NMSC and persons with NMSC rates/1000 people by age*

References: