Prevalence of Chronic Kidney Disease (CKD): Comparison of Real-World Data (RWD) Sources to the USA National Health and Nutrition Examination Survey (NHANES)

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1. Introduction/Background

- Estimates of the prevalence and incidence of chronic kidney disease (CKD) are essential to identify population demographics and guide public health strategies.
- CKD prevalence is projected to increase globally primarily due to diabetes, obesity, and hypertension.
- Nevertheless, most patients even at advanced CKD stages are unaware of their disease and its complications implying substantial under reporting.
- Limitations of reported CKD prevalence estimates include varied methodologies related to source populations, timeframes, and CKD measurements and definitions.

2. Goal

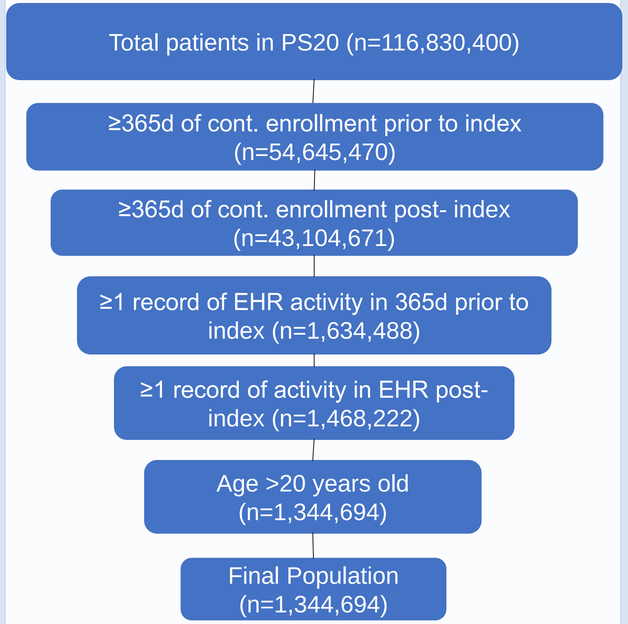
To assess prevalence and incidence estimates for CKD stages 3-5 from a Real World Data (RWD) source population in contrast to the National Health and Nutrition Examination Survey (NHANES).

3. Methods

- RWD was extracted from HealthVerity PrivateSource 20 (PS20) closed claims and linked to Veradigm Health Insights EHR.
- Adults ≥20 years old, continuously enrolled in the claims data and active in the EHR were evaluated during the year 2018.
- CKD stage was determined by the Kidney Disease Improving Global Outcomes (KDIGO) guidelines using the estimated glomerular filtration rate (eGFR).
- The prevalence of CKD stages 3-5 were projected to the United States (US) population (standardized age, gender, and geographic region with census data).

- Nearly 111.5 billion linked claims were analyzed and final cohorts for prevalence and incidence were extracted. (Figure 1).

Figure 1: Attrition Figure



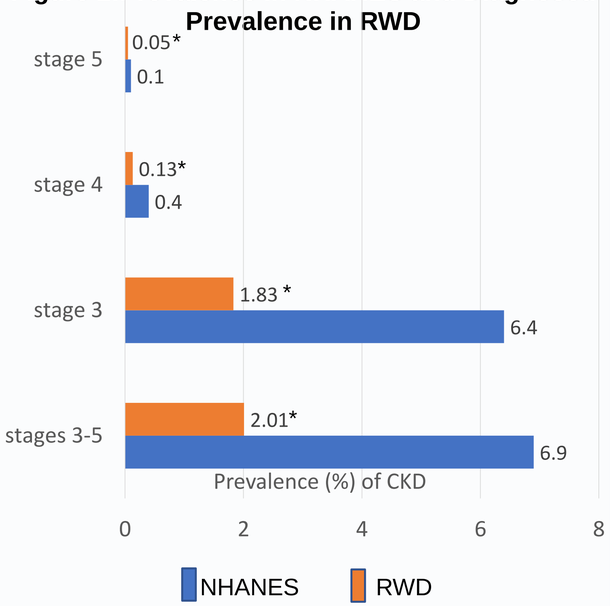
- NHANES prevalence data (2015-2018) for CKD based on self-report and one eGFR estimate for CKD stage.

4. RESULTS

- Proportional CKD prevalence estimates in RWD were lower than those reported in NHANES (Table 3).
- There were approximately 22.5 million individuals estimated with any stage CKD from NHANES (2015-2018) and 5.2 million from RWD (2018; Figure 2).

- The CKD incidence estimate based on RWD (2018) of the US population was approximately 3.5 million.

Figure 2:Prevalence in NHANES and Diagnosed Prevalence in RWD



*Asterisk indicates a statistically significant difference p< 0.05

Table 3: Projected US Prevalence and Incidence Estimates for CKD

	Prevalence		Incidence
	2018		2018
CKD Stage			
3a	3,556,438		2,854,936
3b	1,262,080		528,039
4	381,119		65,625
5	130,277		37,510

5. Summary

- These RWD estimates for CKD prevalence and incidence in the US were considerably lower than NHANES.
- CKD prevalence and incidence estimates from RWD is composed primarily of those with commercial health insurance who received care in health systems.
- NHANES sampled a community-based population including the under- and uninsured and people outside of health systems.
- These RWD were limited by large attrition across inclusion requirements, a single year of observation, inconsistent eGFR sampling, selection bias for resources and access to care in health systems.

6. Conclusions

- More complete ascertainment, longitudinal assessment over relevant time periods, and less biased population sources are needed for reliable CKD prevalence and incidence estimates.
- These RWD analysis reinforce the need for focus on CKD identification in US health systems.

References

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Poster Contact

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