

Minnesota Farm Suicide: Developing a More Inclusive Methodology

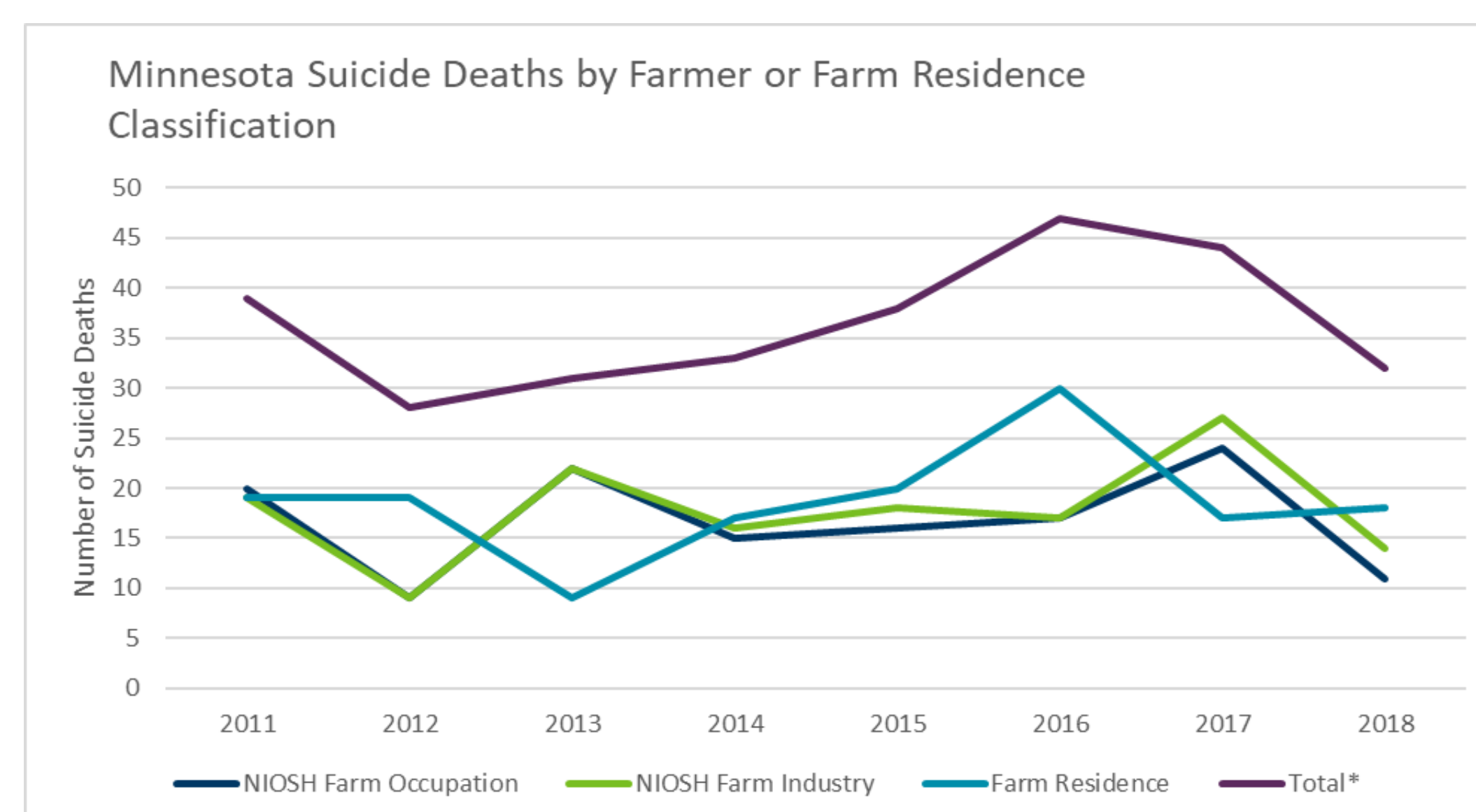
Background

Suicide rates vary by occupation. Prior research indicates that farmers and agricultural workers may be at higher risk.¹⁻³

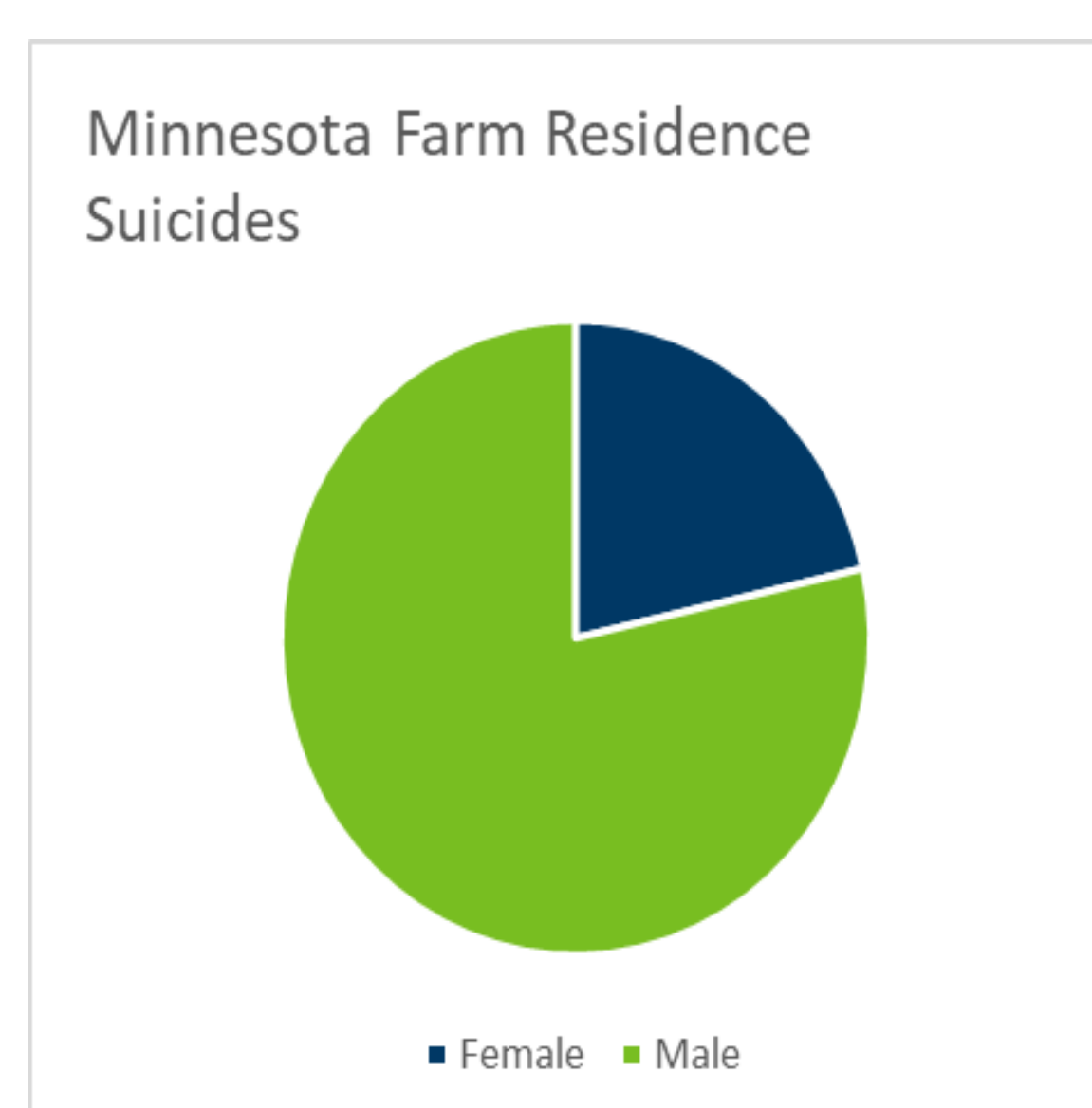
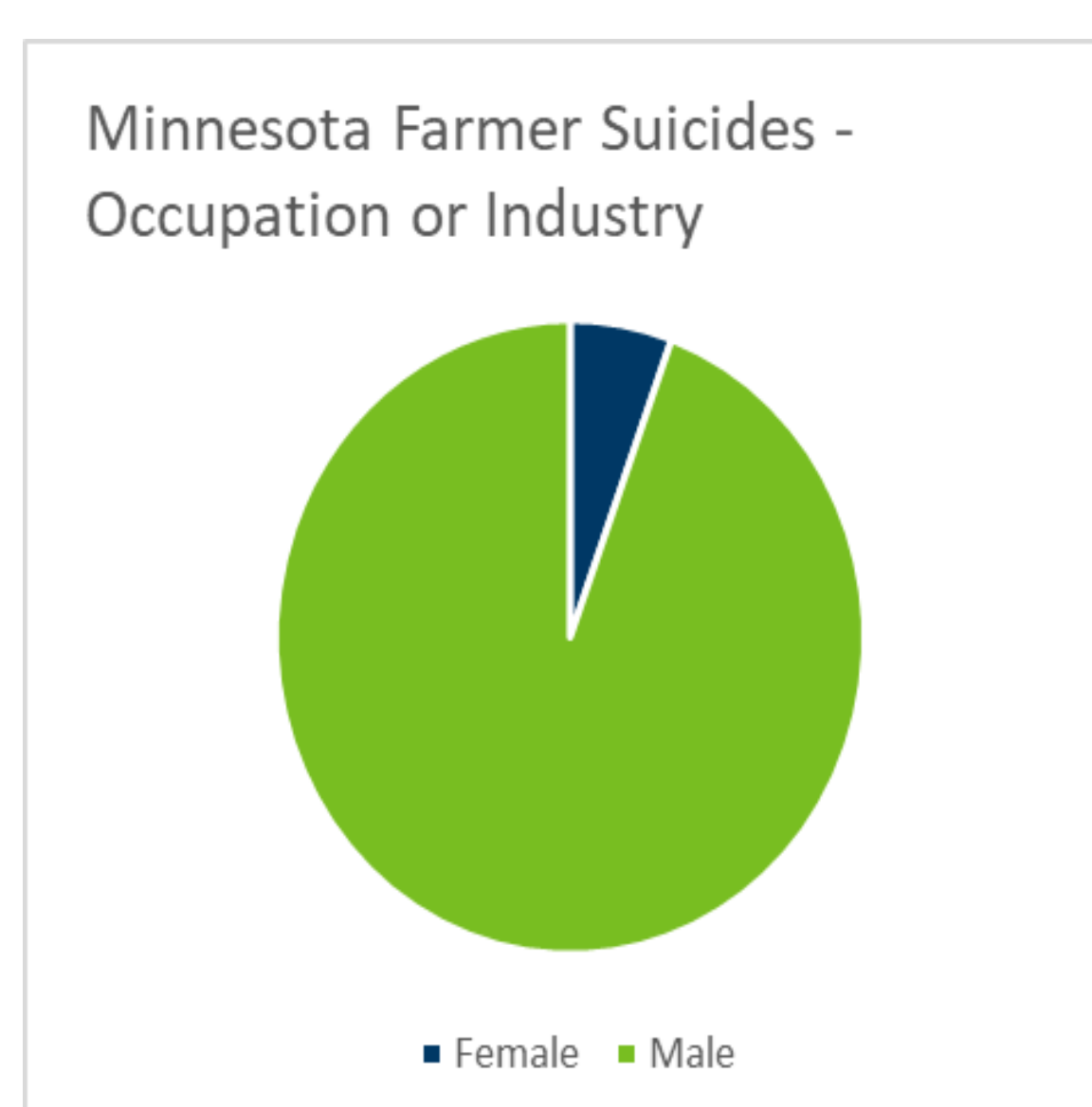
Methods

- Minnesota suicides were identified from death certificates for 2011-2018 (n=5,651).
- **Standard Method:** Open text fields on death certificates were coded by the National Institute for Occupational Safety and Health to identify farmers by occupation and industry.
- **New Method:** linked county tax records with addresses on death certificates to identify farm residences
- Aim is to identify individuals who lived on a farm but may not have had a primary farmer occupation.

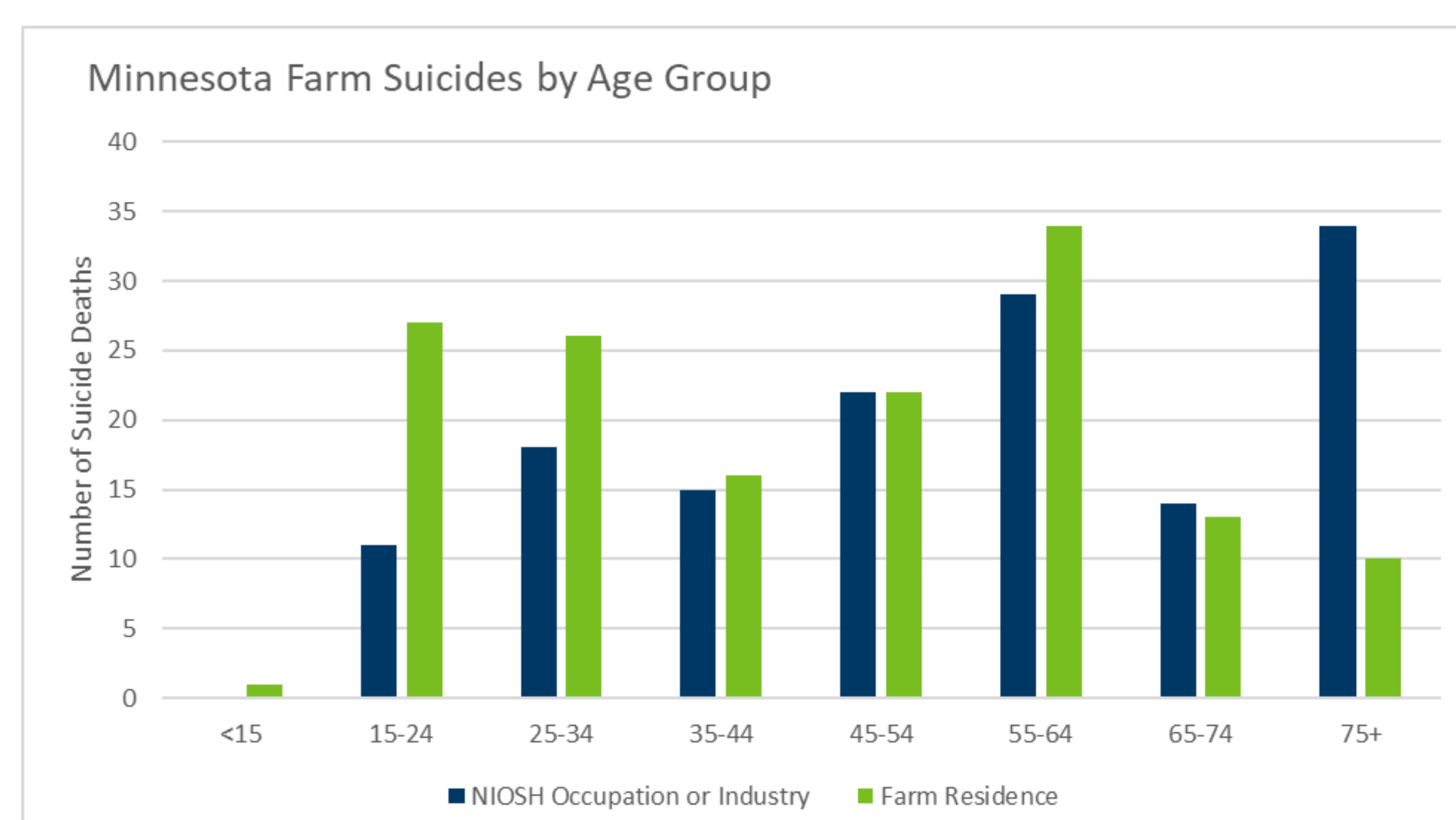
Results: Suicide Counts



Including farm residence identifies more farm community suicide deaths than standard methods.

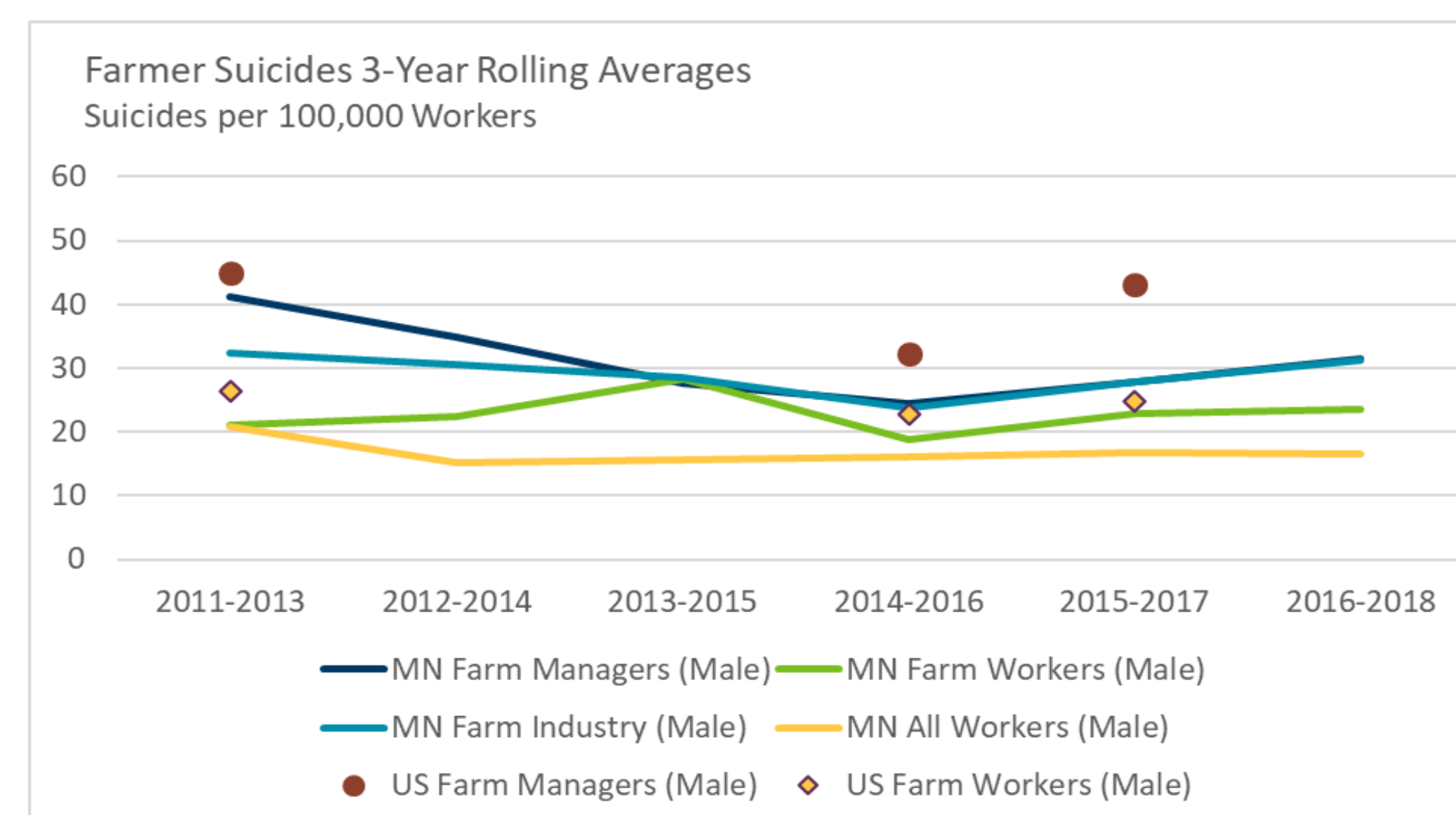


Including farm residence identifies four times as many females.

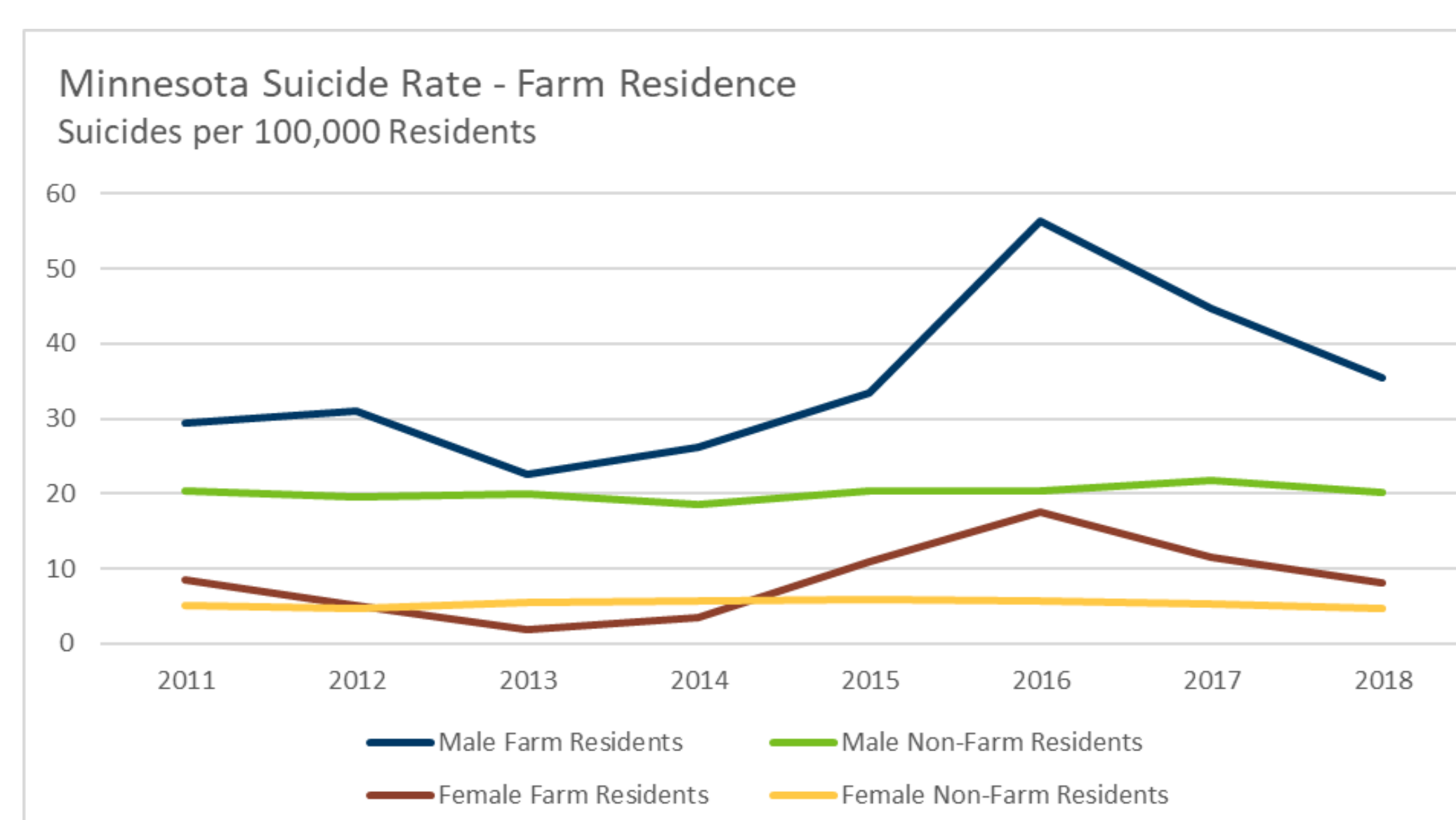


Including farm residence gives a more complete picture across the lifespan.

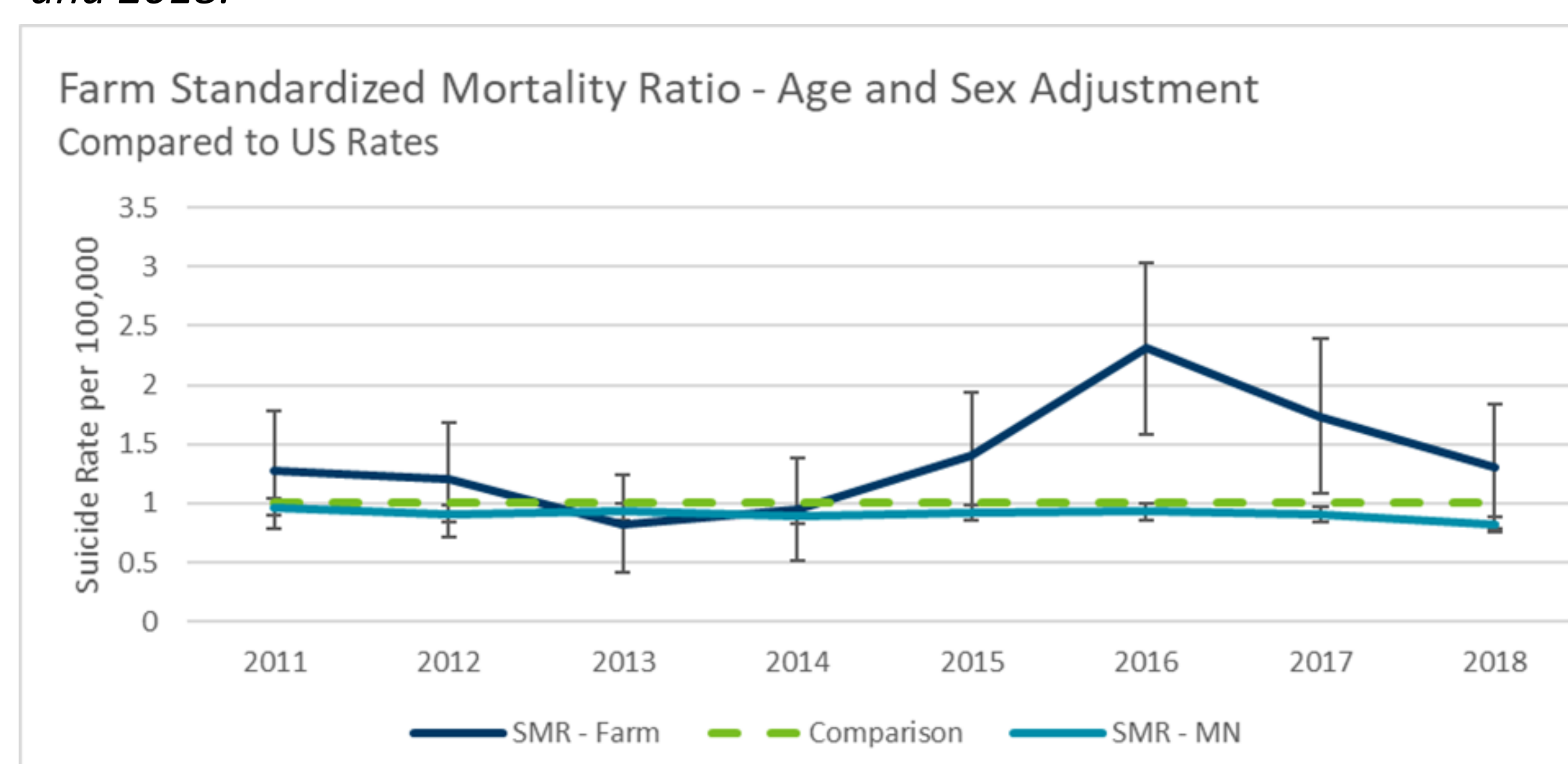
Results: Rates



The rate of suicide for farm managers or farm industry was consistently higher than the rate for all workers or for farmworkers. Rates from two CDC MMWR publications are provided for comparison. The rate of suicide was lower in Minnesota for farm managers and farm workers than the rate seen in the CDC studies.



The rate of suicide was much higher in males than females. The rate of suicide among farm residents was higher than non-farm residents for both males and females. The rates in farm residents increased substantially beginning in 2016. However, a decrease was seen in 2017 and 2018.



Indirect standardization compares the rate of suicide in the farm resident and overall Minnesota populations to the suicide rate in the U.S. population, with adjustment for sex and age differences. The standardized mortality ratio (SMR) shows that the rate of suicide in Minnesota farm residents was significantly higher than Minnesota overall in 2016 and 2017.

Implications

- In this analysis, the rates of suicide for farmers and the farm community were generally higher than the overall working population and general Minnesota population. This finding is similar to other researchers' analyses.
- The enhanced farm suicide methodology identifies a greater number of farm suicides, particularly among women and youth/young adults, compared to suicides among farmers as classified by industry and occupation.
- By expanding the scope of the definition of the farming community to include those who live on a farm, public health professionals will be better able to identify and characterize all suicides across this community. Improved data will allow for best practices in continued efforts towards farm suicide prevention.

References

¹Pegula (2004). An Analysis of Workplace Suicides, 1992-2001. Retrieved from www.bls.gov/opub/mlr/cwc/an-analysis-of-workplace-suicides-1992-2001.pdf.

²Peterson, Stone, Marsh, et al. (2018). Suicide Rates by Major Occupational Group — 17 States, 2012 and 2015. *MMWR Morb Mortal Wkly Rep* 2018; 67:1253-1260. DOI: <http://dx.doi.org/10.15585/mmwr.mm6745a1>

³Peterson, Sussell, Li, Schumacher, o Yeman, Stone (2020). Suicide Rates by Industry and Occupation — National Violent Death Reporting System, 32 States, 2016. *MMWR Morb Mortal Wkly Rep* 2020; 69:57-62. DOI: <http://dx.doi.org/10.15585/mmwr.mm6903a1>