2016 Undiagnosed Estimates for King County

Jeanette Birnbaum

04 October, 2017

Contents

1 Summary of Results **2**

1.1 Base Case 2

1.2 Upper Bound 2

2 Diagnoses **3**

2.1 Analytic sample 3

2.2 Diagnoses over time by MSM/Area subgroups 3

3 Subgroup Sizes and Testing Histories **4**

4 Time from Infection to Diagnosis (TID) **4**

5 Incidence and undiagnosed counts **4**

6 Undiagnosed fractions **5**

1 Summary of Results

The estimated undiagnosed fraction declined slightly overall, and in every group, since 2015. However, note that the number of both undiagnosed and total cases rose slightly in all groups.

1.1 Base Case

Subgroup	PLWHA	True Prevalence	Undiagnosed Cases	Undiagnosed Fraction (%)
2015				
MSM	5109	5365.0	256.0	4.8
non-MSM	1551	1801.6	250.6	13.9
Total	6660	7166.6	506.6	7.1
2016				
MSM	5199	5433.7	234.7	4.3
non-MSM	1599	1855.6	256.6	13.8
Total	6798	7289.2	491.2	6.7

1.2 Upper Bound

Subgroup	PLWHA	True Prevalence	Undiagnosed Cases	Undiagnosed Fraction (%)
2015				
MSM	5109	5613.2	504.2	9.0
non-MSM	1551	2054.7	503.7	24.5
Total	6660	7668.0	1008.0	13.1
2016				
MSM	5199	5670.2	471.2	8.3
non-MSM	1599	2109.9	510.9	24.2
Total	6798	7780.1	982.1	12.6

Table 1: Column Percent shows the composition of the total sample. The Percent Yes, Percent No and Percent Missing columns indicate the row percents of the three possible testing history statuses within each subgroup

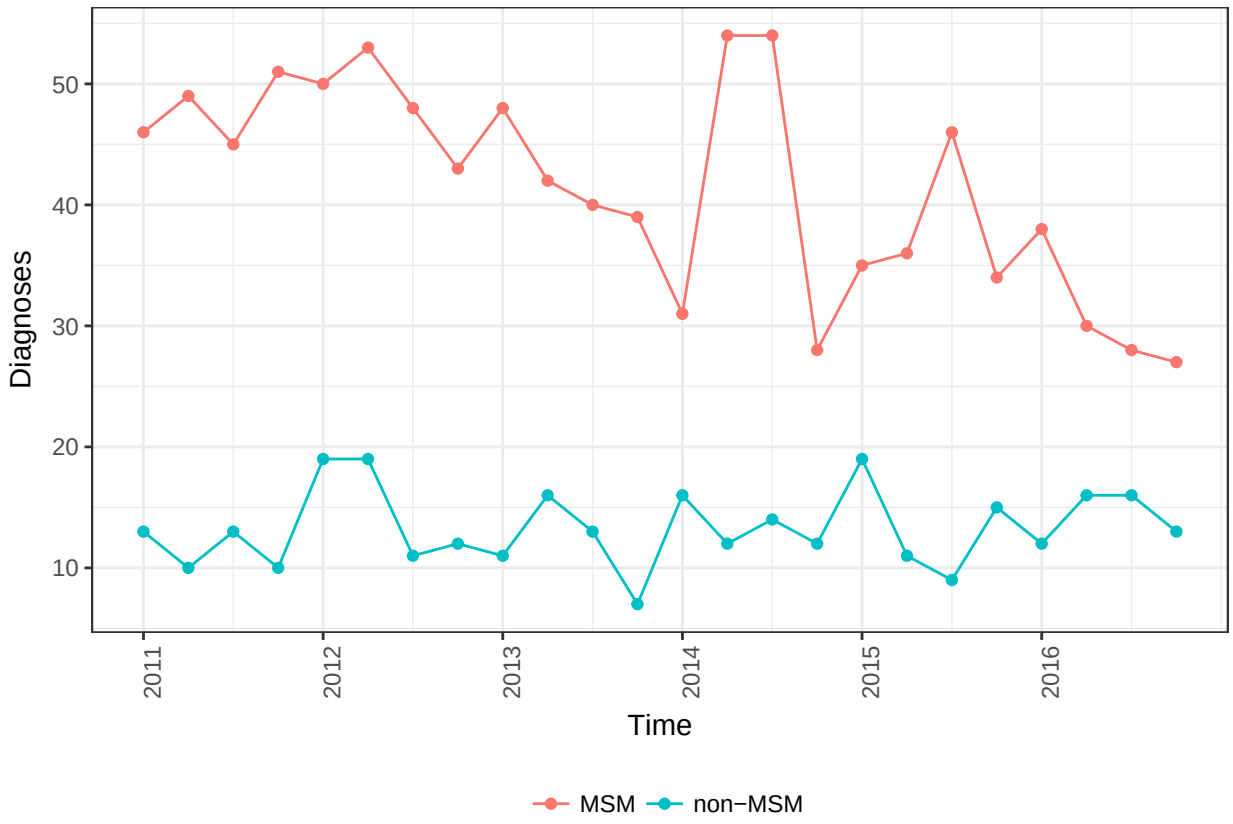
Value	N	Column Percent	Percent Yes	Percent No	Percent Missing
All	1314	100	75	15	10
MSM	995	76	84	9	7
non-MSM	319	24	46	35	19

2 Diagnoses

2.1 Analytic sample

Analytic data set has 1314 cases for 2005-2016.

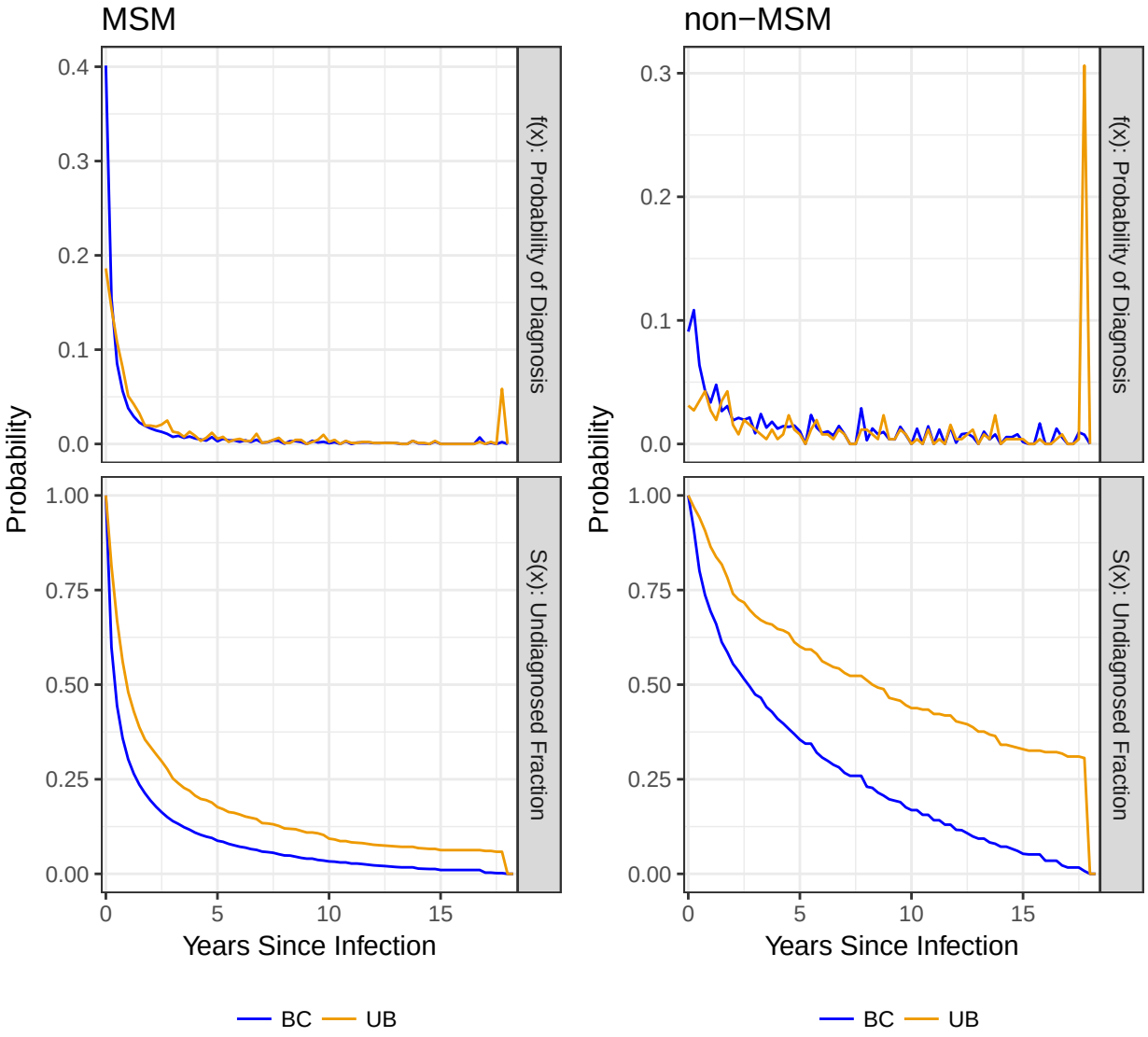
2.2 Diagnoses over time by MSM/Area subgroups



3 Subgroup Sizes and Testing Histories

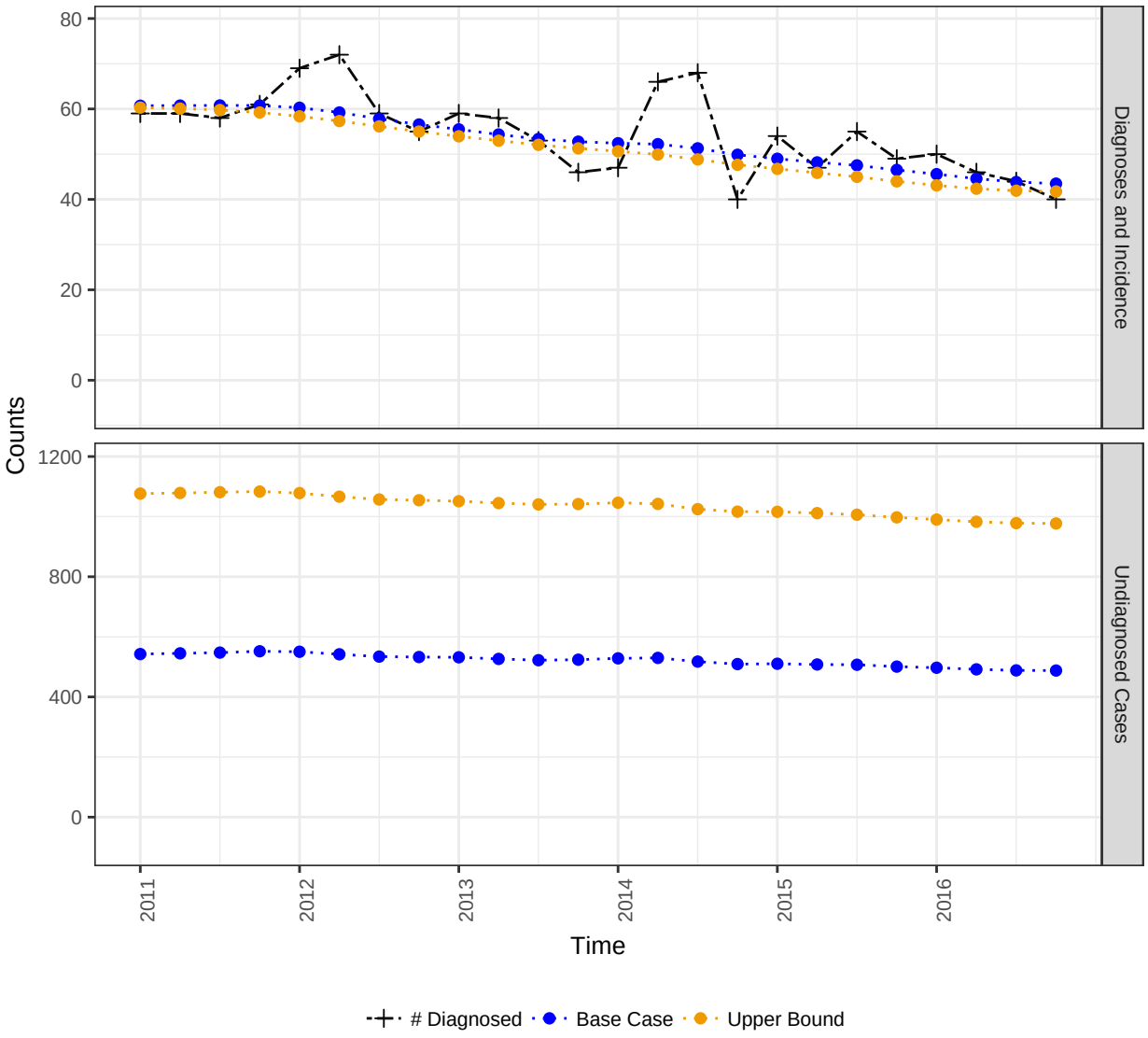
4 Time from Infection to Diagnosis (TID)

The plots below show the TID curves for the MSM subgroups. BC=Base Case and UB=Upper Bound. For each subgroup, the upper plot panel is the probability of diagnosis curve (the pdf) and the lower plot panel is the survivor curve (1-cdf). The lower plot panel's y-axis thus indicates the fraction remaining undiagnosed at a given number of years since infection (x-axis).



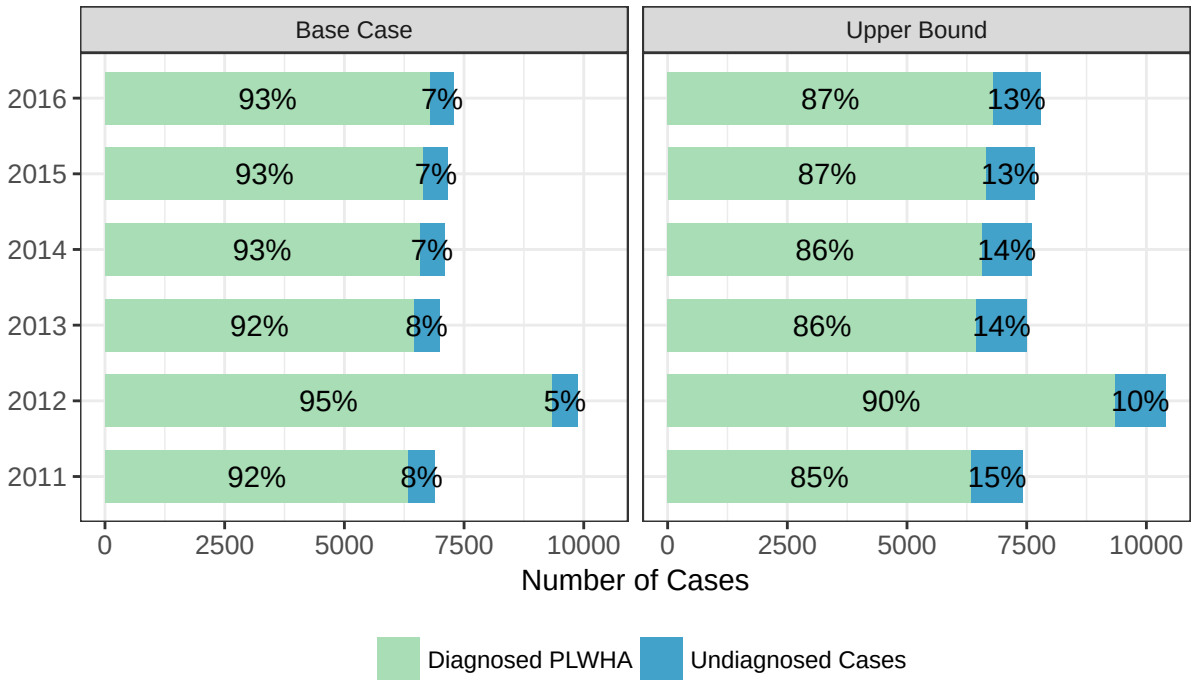
5 Incidence and undiagnosed counts

The upper plot panels show diagnoses and estimated incidence, while the lower plot panels show undiagnosed cases. The upper panels have different y-scales.



6 Undiagnosed fractions

These plots show the total number of PLWH (x-axis) broken down by diagnosed and undiagnosed (colors) for the Base Case versus Upper Bound estimates (panels). Undiagnosed fractions are indicated by the percent labels.


Base Case
Upper Bound
2016
2015
2014
2013
2012
2011
93%
7%
93%
7%
93%
7%
92%
8%
95%
5%
92%
8%
87%
13%
87%
13%
86%
14%
86%
14%
90%
10%
85%
15%
0
2500
5000
7500
10000
Number of Cases
Diagnosed PLWHA
Undiagnosed Cases