Appendix 2: Details on genotyping study used to estimate HPV prevalence for the cancers and related studies from Massachusetts

| **Paper (Year)** | **Study Type and Number of Cases** | **Geographic Area** | **Years Incident Cases Collected** | **Prevalence HPV + Cases** | | **Findings/Use/Limitations** |
| --- | --- | --- | --- | --- | --- | --- |
| **Cervical** | **Oropharyngeal** |
| **Genotyping Data Nationally** | |  |  |  |  |  |
| Sarayia et al (2015) [1] | Cross-sectional study of select US cancer registries, 777 cervical cases, 588 oropharyngeal cases | Los Angeles, Hawaii, Iowa, Kentucky, Florida, Louisiana, Michigan | 1993-2005  1 registry 1993-1999  1 registry 2000-2004  1 registry 1994-2004  4 registries 2004-2005 | 90.6% | 70.1% | Used for HPV + prevalence in our estimates |
| Steinau et al (2014) [appendix source 2] | Cross-sectional study of select US cancer registries, 557 oropharyngeal cases | Los Angeles, Hawaii, Iowa, Kentucky, Florida, Louisiana, Michigan | 1995-2005  1 registry 1995-1999  1 registry 2000-2004  1 registry 1994-2004  4 registries 2004-2005 | NA | 72.4% | High-risk HPV prevalence by registry:  Los Angeles = 17 cases (85.0%)  Hawaii = 33 cases (84.6%)  Iowa = 4 cases (30.7%)  Kentucky = 74 cases (63.8%)  Florida = 101 cases (72.1%)  Louisiana = 75 cases (78.9%)  Michigan = 92 cases (68.6%) |
| **Genotyping Data in Massachusetts** | |  |  |  |  |  |
| Wright et al (2013) [appendix source 3] | Chart review, Brigham and Women’s Hospital, 80 cervical cases | Boston for treatment | 2005-2011 | 96.3% | NA | To compare MA prevalence to national prevalence |
| Addison et al (2017) [19 | Case series from Massachusetts General Hospital, 235 oropharynx cases | Boston for treatment | 2002-2012 | NA | 64.7% | To compare MA prevalence to national prevalence  Eligible patients had to be undergoing radiation |
| Lorch et al (2015) [20] | Chart review, Dana Farber Cancer Institute, 500 oropharyngeal cases | Boston for treatment | 2001-2011 | NA | 43% HPV + 44% unknown status | To compare MA prevalence to national prevalence  Eligible patients had to be stage III or IV |

| **Paper (Year)** | **Study Type and Number of Cases** | **Geographic Area** | **Years Incident Cases Collected** | **Prevalence HPV + Cases** | |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cervical** | **Oropharyngeal** | **Findings/Use/Limitations** |
| **Genotyping Data in Massachusetts** | |  |  |  |  |  |
| Nelson et al (2017) [21 | Population-based greater Boston area, 486 pharyngeal cases | Greater Boston area | 1999-2003 and 2006-2011 | NA | 60.7% | To compare MA prevalence to national prevalence |
| Nichols et al (2010) [22] | Case series from Partners Healthcare System, 68 oropharynx cases | Massachusetts | 1996-2006 | NA | 78% HPV 16 | To compare MA prevalence to national prevalence  Eligible patients had to be undergoing chemoradiation |
| Ringstrom et al (2002) [23] | Case series from Dana-Farber, 29 oropharynx cases | Boston for treatment | 1994-1998 | NA | 52% HPV 16 oropharynx  64% HPV 16 tonsil | To compare MA prevalence to national prevalence |

1. Saraiya M, Unger ER, Thompson TD, et al (2015) US Assessment of HPV Types in Cancers: Implications for Current and 9-Valent HPV Vaccines. JNCI Journal of the National Cancer Institute 107(6):djv086. doi:10.1093/jnci/djv086.
2. Steinau M, Saraiya M, Goodman MT, et al (2014). Human Papillomavirus Prevalence in Oropharyngeal Cancer before Vaccine Introduction, United States. Emerging Infectious Diseases. 20(5):822-828.
3. Wright AA, Howitt BE, Myers AP, et al (2013). Oncogenic mutations in cervical cancer: genomic differences between adenocarcinomas and squamous cell carcinomas of the cervix. Cancer. 119(21):3776-83.
4. Addison D, Seidelmann SB, Jangua SA, et al (2017). Human Papillomavirus Status and the Risk of Cerebrovascular Events Following Radiation Therapy for Head and Neck Cancer. J Am Heart Assoc. 6(9):e006453.
5. Lorch JH, Hanna GJ, Posner MR, et al (2015). Human Papillomavirus and Induction Chemotherapy versus Concurrent Chemoradiotherapy in Locally Advanced Oropahyrygneal Cancer: The Dana Farber Experience. Head & Neck. 38(S1):E1618-E1624.
6. Nelson HH, Pawlita M, Michaud DS, et al (2017). Immune Response to HPV16 E6 and E7 Proteins and Patient Outcomes in Head and Neck Cancer. JAMA Oncology. 3(2):178-185.
7. Nichols AC, Finkelstein DM, Faquin WC, et al (2010). Bcl2 and Human Papilloma Virus 16 as Predictors of Outcome following Concurrent Chemoradiation for Advanced Oropharyngeal Cancer. Clin Can Res. 16(7):2138-2146.
8. Ringstrom E, Peters E, Hasegawa M, et al (2002). Human Papillomavirus Type 16 and Squamous Cell Carcinoma of the head and Neck. Clin Cancer Res. 8(10):3187-3192.