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E-cigarettes: Tobacco Harm Reduction or Harm Perpetuation

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Harm Reduction: Choosing the Lesser of Two Evils

- “To minimize harm to individuals and/or wider society from hazardous behaviors or practices that cannot be completely avoided or prevented.”

Royal College of Physicians (2016). Nicotine without smoke: Tobacco harm reduction

- To be effective in harm reduction, e-cigarettes do NOT have to be safe or free from harm. They simply have to result in less overall harm than do conventional cigarettes
- Regulation and policy is going to be the critical component in determining the effects of e-cigarettes on population health.



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Harm Reduction

- Safety
- Efficacy for smoking cessation and reduction
- Use among non-smokers
- Effects among youth

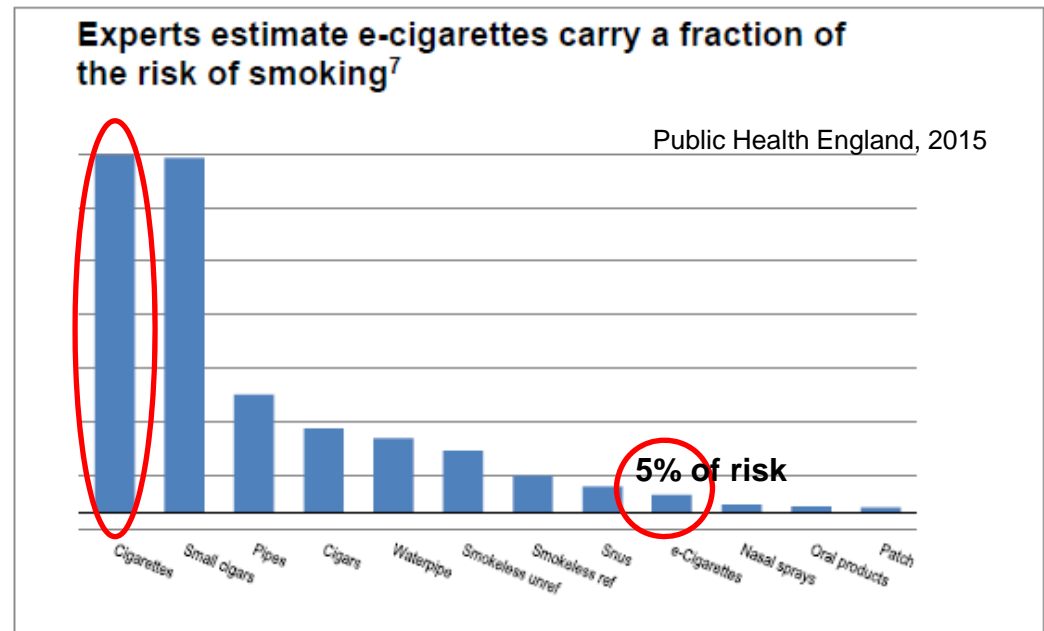


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Safety



- Harm caused by combustible tobacco use arises not from nicotine but from other components of tobacco smoke.
 - “The combustion of cigarettes, rather than either tobacco or nicotine, is the cause of a public health disaster.” Etter, 2015
 - “Smokers smoke for the nicotine, but die from the smoke” Michael Russell
- E-cigarettes liquid and vapor does contain substances that are harmful
- Although not safe, the data to date indicate that e-cigarettes are far less harmful than combustible tobacco use.





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Smoking Cessation and Reduction



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Cessation & Reduction

- Findings from 2 methodologically rigorous RCTs (Bullen et al., 2013 and Caponnetto et al., 2013) suggested that e-cigarettes are efficacious in helping smokers to quit
- Both studies found that participants who used an e-cigarette that contained nicotine were significantly more likely to stop or reduce smoking than those who used an e-cigarette that did not contain nicotine
- Other studies have found “no evidence that using e-cigarettes at the same time as using regular cigarettes made people less likely to quit smoking.”



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Cessation & Reduction

- However, 2 recent meta-analysis found that:
- “While the majority of studies demonstrate a positive relationship between e-cigarette use and smoking cessation, the evidence remains inconclusive due to the low quality of the research published to date.”



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Use among Non-smokers



- From 2010-2013, ever-use of e-cigarettes among adults changed
 - from 9.8% to 36.5% for current smokers
 - from 2.5% to 9.6% for former smokers
 - from 1.3% to 1.2% for never-smokers
- No evidence that e-cigarettes availability encourages use among never-smokers



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Uptake, Relapse, and Patterns of Use

Delnevo et al., NTR. National Health Interview Survey

	Some Day or Daily E-cig Use
Daily smoker	16.2%
Some day smoker	14.9%
Recent quitter (<1 year)	18.0%
Former smoker (2-3 years)	10.3%
Former smoker (>4 years)	0.8%
Never smoker	0.4% (0.1% is daily use)

“Extremely low e-cigarette use among never-smokers and longer term former smokers suggest that e-cigarettes neither promote widespread initiation nor relapse among adults. Recognition of the heterogeneity of smokers, including the time since quitting, is critical to draw accurate conclusions about patterns of e-cigarette use at the population level and its potential for public health benefit or harm.”



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Effects among Youth

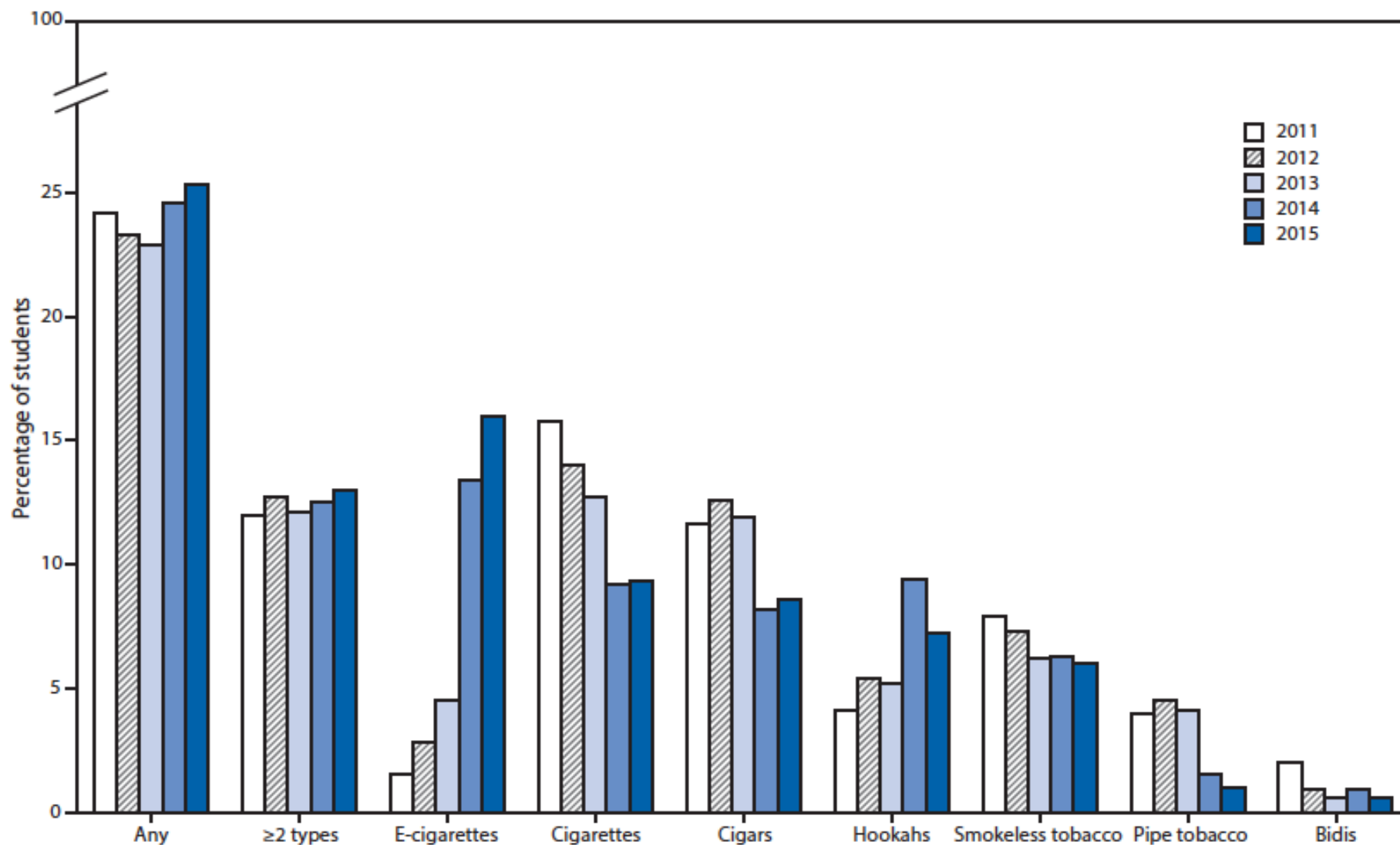


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Tobacco Use Among U.S. High School Students

CDC (2016). *MMWR*, 65(14): 361-367

FIGURE 1. Estimated percentage of high school students who currently use any tobacco products,* ≥ 2 tobacco products,[†] and select tobacco products[§] — National Youth Tobacco Survey 2011–2015





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E-cig among Youth

- Population-level data indicate:
 - Major shift in the products used
 - Very substantial increase in e-cigarettes use

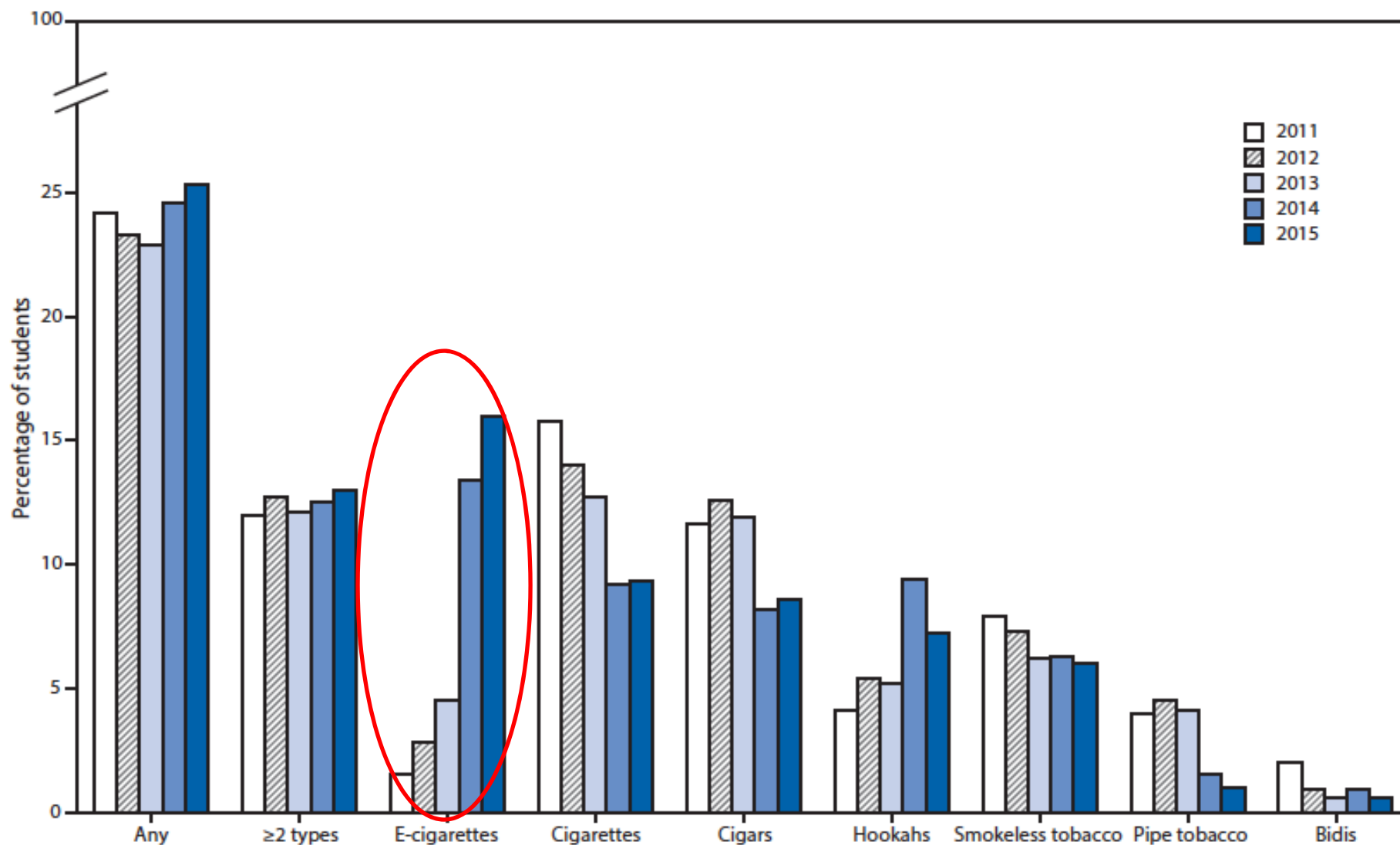


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E-cig among Youth

- Population-level data indicate:
 - Major shift in the products used
 - Very substantial increase in e-cigarettes use
 - Very substantial reduction in cigarette and cigar use

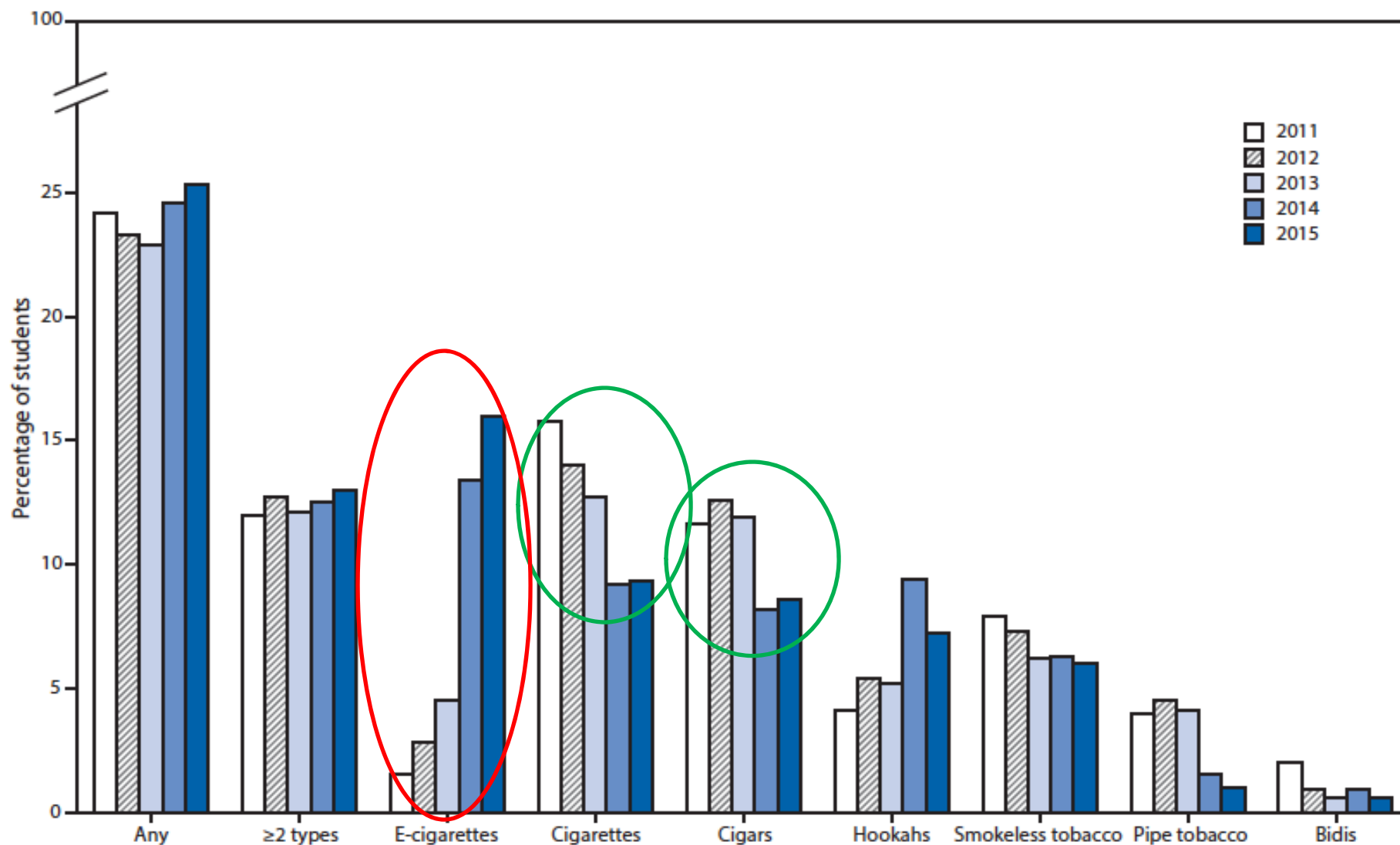


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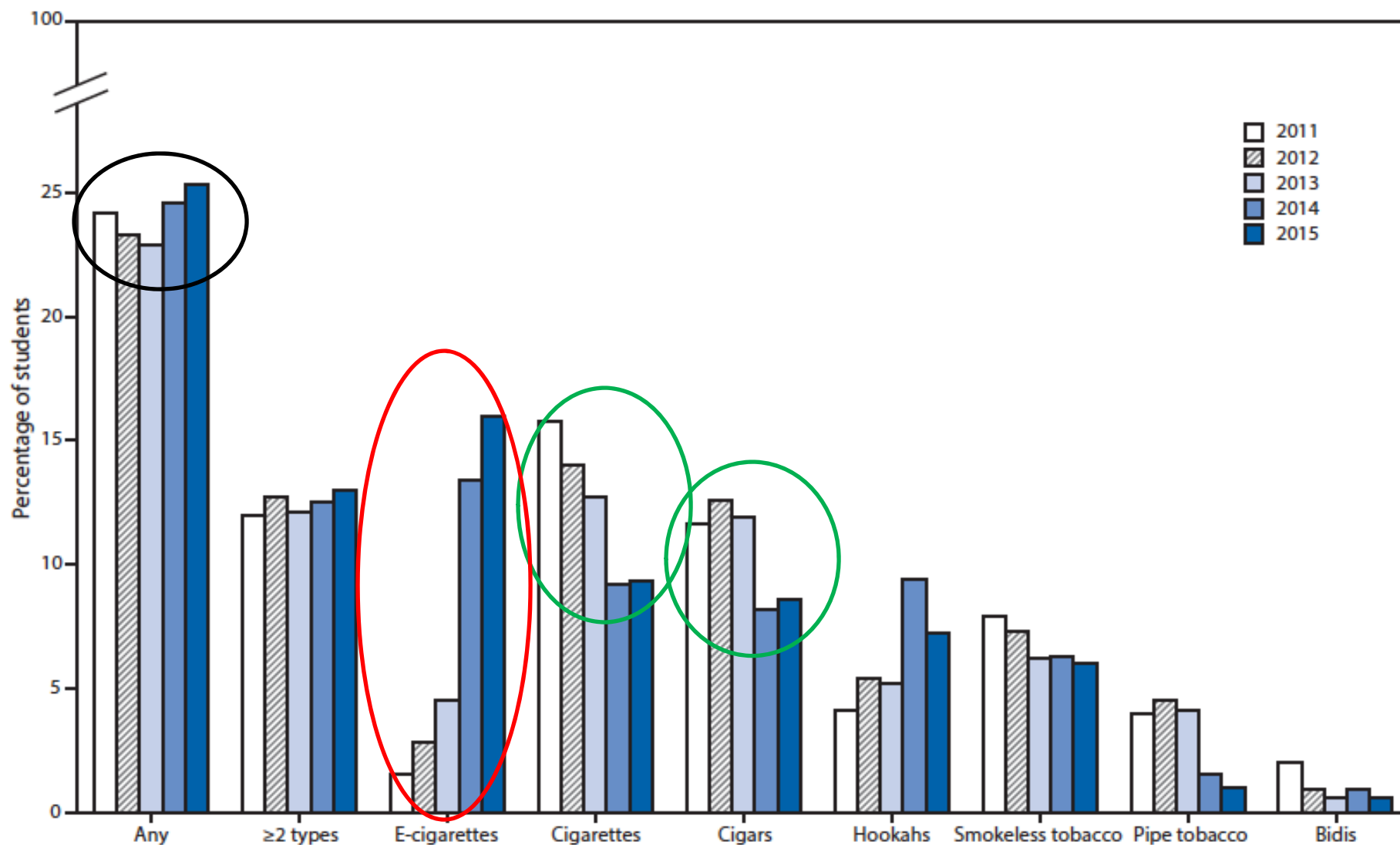


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 - Major shift in the products used
 - Very substantial reduction in cigarette and cigar use
 - Very substantial increase in e-cigarettes use
 - No change in overall tobacco/nicotine use
- Given the better safety profile of e-cigarettes, this shift should have positive effects on population health
- If e-cigarettes were enticing more never users or low risk youth into becoming tobacco/nicotine users, we should see an increase in overall tobacco/nicotine use, but we do not.
- If e-cigarettes were leading to more combustible use, we should see an increase in combustible use, but we do not.



- Although e-cigarettes are not harmless, they are safer than conventional cigarettes
- Although it's too early to make definitive conclusions,
 - E-cigarette may aid in cessation, cigarette reduction, and promoting cessation
 - the pattern of e-cigarettes use among current and former smokers suggest that some smokers may transition to exclusive e-cigarette use and that e-cigarette is not a major contributor to relapse to combustible use
- Extraordinarily low proportions of never users even try e-cigarettes, and even lower proportions go on to use regularly
- To date, the explosive increase in e-cigarette use among youth represents product shift and have not resulted in increase in overall tobacco/nicotine use



- Would you recommend an IV heroin user, who had failed to quit repeatedly, to use clean needle when she wants to use heroin?
- Would you recommend a smoker, who had failed to quit repeatedly, to use e-cigarette when she wants to use nicotine?