

1 **[DRAFT] Adolescent Vaccination: Recommendations from the**
2 **National Vaccine Advisory Committee – Adolescent Working Group**

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4 In response to a request by the Assistant Secretary for Health, the National Vaccine Advisory
5 Committee (NVAC) adolescent working group recently assessed issues related to the goal of
6 developing a comprehensive and successful adolescent immunization program in the United
7 States.¹ Six key areas were identified as presenting distinct challenges to realizing this goal,
8 which is critical to the ultimate achievement of improved health outcomes among U.S.
9 adolescents. These key areas include: venues for vaccine administration, consent for
10 immunizations, communication, financing, surveillance, and the potential for school mandates.
11 Having solicited input from over 40 stakeholders, the NVAC adolescent working group has
12 developed recommendations for addressing each area. Because some of the issues are inter-
13 dependent, recommendations in some sections overlap. These recommendations are intended for
14 health policy makers, immunization program managers, health care providers, and other
15 stakeholders.

16

17 **VENUE/HEALTH CARE UTILIZATION**

18 The American Academy of Pediatrics and other organizations recommend that all adolescents
19 receive primary care within a medical home.² We also believe that the medical home is an
20 important venue for health care delivery, including immunizations, and that efforts need to be
21 made to promote health care access, utilization of services, and availability of health insurance
22 for adolescents. However, recent data suggest that, if unchanged, utilization patterns of
23 preventive visits alone will not be sufficient to achieve high immunization coverage among

24 adolescents.^{3,4} While younger adolescents have historically made more frequent preventive
25 health care visits within traditional settings for care (i.e., pediatric and family practices), older
26 adolescents have been observed to seek preventive care less frequently from traditional
27 sources.^{3,5}

28
29 Identifying appropriate complementary settings for adolescent vaccination may be an important
30 strategy for reaching adolescents who lack access to traditional sources of care. In order to reach
31 as many adolescents as possible and maximize each encounter with a health care professional,
32 we have developed recommendations for both the traditional medical home setting and potential
33 complementary settings. Most of the recommendations will require partnerships (e.g. A-2),
34 while some recommendations warrant immediate implementation by clinicians (e.g., A-1).

35
36 A. The Medical Home Setting

37 1. Promote and strengthen delivery of vaccination services in the medical home during both
38 preventive care and, when not contraindicated, during non-preventive care visits.

39 a. All medical home visits by adolescents, including visits made by adolescents with minor
40 acute illnesses⁶ (e.g., diarrhea, mild upper-respiratory tract infection with or without
41 fever), should be considered opportunities for immunization and, if no immunizations are
42 due, for counseling about upcoming immunizations.

43 b. Immunizations should be administered at the earliest opportunity consistent with the
44 harmonized ACIP/AAP/AAFP recommendations.

45 c. Health care professionals should simultaneously administer as many indicated vaccine
46 doses as recommended.

47 d. All providers administering vaccinations to adolescents should participate in
48 Immunization Information Systems (IIS). Participation of all vaccination providers will
49 decrease the likelihood of adolescents' receiving unnecessary vaccine doses and will also
50 reduce care fragmentation (e.g., for children who are transferring between providers or
51 who may be receiving vaccinations in another setting such as the local health
52 department).

53 2. Conduct research to identify effective strategies to increase utilization of recommended
54 preventive health care visits and other opportunities that will promote adolescents' receipt of
55 all immunizations as recommended by the ACIP.

56

57 B. Settings Complementary to the Medical Home

58 1. Determine the feasibility and acceptability of vaccinating adolescents in US settings
59 complementary to the medical home.

60 a. Evaluation and research objectives should:

61 i. Include assessments of existing infrastructure, opportunity costs (e.g., for local public
62 health), and comparative cost-effectiveness.

63 ii. Focus on the general adolescent population as well as sub-populations (e.g., racial
64 and ethnic minorities, youth living below poverty level, incarcerated, substance using,
65 homeless and / or pregnant youth), which may be particularly challenging to reach,
66 educate, and vaccinate, and are therefore most vulnerable to vaccine-preventable
67 diseases.

68 b. Possible venues for future assessments may include:

69 - Schools/colleges

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- 70 - Pharmacies
 - 71 - Retail locations
 - 72 - Urgent care, emergency departments, and hospitals
 - 73 - Religious, spiritual, and cultural venues
 - 74 - Mobile vans
 - 75 - Sexually Transmitted Diseases (STD) clinics
 - 76 - Offices of physicians who have not historically provided a medical home to
 - 77 adolescents (e.g., obstetrician/gynecologists)
 - 78 - Substance abuse clinics
 - 79 - Runaway/homeless shelters
 - 80 - Teen social venues
 - 81 - Correctional facilities
 - 82 - Family planning clinics
- 83 2. Promote and facilitate implementation of vaccination services in complementary settings
- 84 shown to be appropriate and effective (based on the research conducted in #1 above). As
- 85 part of the implementation, each setting should have a plan for partnering with every
- 86 patient's medical home (e.g., using an IIS to report vaccines administered, referring teen to
- 87 his primary care practitioner in the medical home for routine health care visits or other
- 88 needed services). Each setting should develop and implement strategies to identify
- 89 adolescents who do not have medical homes and refer those adolescents to local primary
- 90 health care providers.
- 91 3. Promote and facilitate full participation in Immunization Information Systems (IIS) among
- 92 all providers administering vaccinations to adolescents.

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- 93 4. Promote and facilitate reporting to the Vaccine Adverse Event Reporting System (VAERS)
94 among all providers administering vaccinations to adolescents.
- 95 5. Continue to monitor patterns of health care utilization by adolescents over time in order to:
- 96 a. Document evolving health care utilization patterns occurring in both medical homes and
97 complementary settings
- 98 b. Assess changing patterns in vaccine administration occurring during preventive and non-
99 preventive care visits in the medical home
- 100 c. Evaluate the effects changing patterns (observed in all settings) have on:
- 101 - Overall adolescent immunization rates
- 102 - Coverage disparities among sub-populations (which may be observed as coverage
103 assessments improve)
- 104 - Delivery of other health care preventive services recommended for adolescents
- 105 d. Identify additional venues that may be appropriate for adolescent vaccination services
- 106 e. Ensure limited resources used to provide vaccination services in complementary settings
107 are being employed effectively
- 108 6. Improve comprehensive medical care programs for adolescents in foster care, residential
109 treatment facilities and correctional facilities, including delivery of age-appropriate
110 immunizations consistent with ACIP recommendations.

111

112 **CONSENT**

113 As more vaccines are recommended for use in adolescents, the ability or inability of an
114 adolescent to give consent to receive vaccines may become an issue in their utilization.

115 Currently, the recommended age for receiving these vaccines is 11-12 years, where health care

116 utilization patterns involving direct parental participation make consent issues of less concern.
117 However, recommendations for the use of these and other vaccinations also include catch up in
118 older adolescents who may be receiving their health care in situations where parental or guardian
119 consent is not easily available. The right to consent to health care by minors is currently
120 determined by state law and varies widely. All 50 states and the District of Columbia have laws
121 related to health care consent by minors.⁷

122

- 123 1. All health care providers and their staff who may potentially provide care to adolescents
124 should become familiar with their states law regarding a minor’s right to consent to health
125 care. If barriers relating to consent are perceived, providers are encouraged to wrok with
126 their state immunization program office to develop strategies that can facilitate uptake and
127 access to vaccines in this age group.
- 128 2. Health care providers and their staff members should ensure that current Vaccine Information
129 Statements are provided to all persons providing legal consent for adolescents’ vaccinations.
- 130 3. Adolescents should be fully informed regarding the benefits and any potential risks
131 associated with vaccines they receive, regardless of the individual consent laws in each state.
132 This should include information in an age appropriate format as well as the Vaccine
133 Information Statements. Understanding the value and rationale for immunizations is
134 important to future immunization acceptance by adolescents themselves and for their
135 children in the future.

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139 **COMMUNICATION/PUBLIC ENGAGEMENT**

140 Communication is an important aspect of any public health effort both to help families with their
141 health care decisions and to help health care professionals with quality immunization delivery.

142 The need for health communication is pronounced in the case of the adolescent immunization
143 program because levels of knowledge of the adolescent vaccines and the diseases against which
144 they protect are not universally high. Because the decision to provide or accept vaccinations has
145 both technical and socio-emotional components, communication must address both levels.

146

147 Health communication at a public health level is analogous to health communication at the
148 clinical level; it requires skill at both listening and expressing. In order to optimize public policy
149 and public health we need to continuously improve our “listening” –for example, expanding our
150 understanding of adolescent, family, and health care professional perspectives on adolescent
151 immunization through consultation and participation in dialogue. Additionally, we need to
152 continuously discover and implement best practices in conveying public health messages, for
153 example, increasing awareness of the benefits of adolescent immunization among special target
154 audiences (e.g., third party payers, employers, legislators, community leaders, hospital
155 administrators, and educators). As with childhood immunization, the ability to rapidly and
156 effectively communicate scientifically sound information on emerging vaccine safety issues to
157 all stakeholders will be a public health imperative. Resources should be made available to
158 support the quality of both the listening and expressing components of health communication
159 regarding adolescent immunization.

160

161 Below are some principles of health communication that directly apply to adolescent
162 immunization.

163

164 1. Quality. The adolescent immunization communication efforts should be of high quality. Pre-
165 release testing should assess for the quality of the communication. Materials and messages
166 should be:

- 167 • Accurate -- scientifically correct and appropriately thorough
- 168 • Appealing -- presented in a manner that is likely to be most appealing to the given
169 audience
- 170 • Relevant – addressing the concerns of the audience
- 171 • Appropriate -- detailed below

172 2. Tailored messages. Messages should be carefully designed for audience needs.

- 173 a. Addressing needs of audience segments: If empirical research identifies that different
174 communication modes or content work better based on audience characteristics,
175 messages should be tailored for specific audiences. Both the media and the message
176 should relate to the needs and concerns of respective target audiences. The needs of
177 adolescent and family audience segments vary based on factors such as age, sex,
178 language, health literacy, culture, and cognitive or developmental stage. Messages for
179 health care professionals should be targeted for their licensure (e.g., MD, DO, PA,
180 NP, RN, PharmD, etc.) and specialty (e.g., OB-GYN, Pediatrics, Family Practice).
- 181 b. Reaching audiences who most need prevention: It is important to create adolescent
182 immunization messages for the general public, but efforts also should be made to
183 design messages to address the needs of audiences that are in greatest need of specific

184 information. For example, special efforts should be made to get appropriate messages
185 about human papillomavirus (HPV) prevention to groups with the highest incidence
186 of HPV infection and the highest incidence of death from cervical cancer.

187 Immunization strategies based on vaccinating only high-risk groups generally have
188 been ineffective as have been health communication strategies based on “one-size-
189 fits-all” messages. For this reason we support the current broad vaccination
190 recommendations communicated in ways that most precisely address the needs of
191 specific segments of the intended audience.

192 c. Preventing information overload: The information content of the messages should be
193 layered so as to provide the needed information without overwhelming the recipient
194 with unwanted information. Links to more detailed information can be used if there
195 is concern that recipients may need more information later.

196 3. Collaboration. Organizations involved in adolescent immunization should learn from and
197 collaborate with a broad spectrum of groups that have interest and expertise in immunization
198 and/or communication to youth and their parents. Some examples follow.

- 199 • Federal, state, and local public health personnel and organizations – e.g., National
200 Association of County and City Health Officials
- 201 • Organizations for health care professionals – e.g., American Academy of Pediatrics,
202 American Academy of Physician Assistants, Academic Pediatric Association, Society
203 for Adolescent Medicine, Infectious Disease Society of America, National
204 Association of Pediatric Nurse Practitioners, National Association of School Nurses
- 205 • Health insurance plans
- 206 • Vaccine manufacturers

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- 207 • Not-for-profit organizations – e.g., American Cancer Society, Immunization Action
208 Coalition
 - 209 • Parent groups – e.g., National Meningitis Association, Parents of Kids with Infectious
210 Diseases, Families Fighting Flu
 - 211 • Organizations that serve adolescents – e.g., Boys & Girls Clubs of America, Girl
212 Scouts of America, Big Brothers, Big Sisters of America, sports organizations
 - 213 • Educational organizations, including those that develop primary and secondary
214 educational curricula
 - 215 • Others who have developed successful public health communication campaigns such
216 as the anti-smoking campaign
 - 217 • Advertising and media professionals – e.g., producers of movies and television
218 programs, editors of magazines and other publications targeted at adolescents
 - 219 • Relevant computer and Internet companies – e.g., social networking website
220 companies, publicly available personal health record
- 221 4. Research. Communication of adolescent immunization should be informed by
222 methodologically sound research on the target population’s knowledge/understanding,
223 awareness, attitudes, and concerns about adolescent immunization.
- 224 a. Results of formative research should be communicated broadly (e.g., peer review
225 publication, collaborative organization journals and websites, inclusion on a federal
226 website)
 - 227 b. Longitudinal surveillance mechanisms should be established in order to determine
228 adolescent, family and health professional perspectives. This system should serve as a
229 springboard for public health policy and programs. This is important because knowledge,

230 attitudes and behaviors of these groups will change over time and health communication
231 should be responsive to these changes.

232 c. Ad hoc studies on ‘hot topics’ should be supported in order to determine adolescent,
233 family and health professional perspectives. This system should serve as a springboard
234 for public health policy and programs.

235 5. Communication about adolescent immunizations within the clinical setting

236 a. Important communication about adolescent immunization should occur within the
237 medical home and other venues where adolescents receive care. This comes in several
238 forms – e.g., discussion with parents during well care visits and consumer reminders in
239 the form of telephone or mailed reminders to come in for vaccination.

240 b. Training and materials for use by primary care health care professionals should be readily
241 available at no cost to providers, adolescents, and their parents/guardians.

242 c. Compensation for the time health care professionals spend communicating to parents and
243 adolescents about the vaccines should be fair. The details of this are beyond the scope of
244 these recommendations. This statement is included only to acknowledge that
245 communication in the clinical setting takes clinician time, which should be valued and
246 compensated.

247 6. Broad dissemination. A wide range of venues and media outlets should be utilized to reach
248 target audiences. Along with traditional advertising media, other media should be utilized.
249 These include organizational media (e.g., newsletters), new media (e.g., email, text messages,
250 YouTube), and non-traditional modes (e.g., product placement, developing spokespersons
251 within the target audiences, and linkages to products designed for adolescents or their
252 parents).

253 **FINANCING**

254 The financing of vaccines and related services for adolescents presents distinct challenges.

255 Vaccines recommended for this age group are relatively expensive compared to those

256 recommended for infants and young children. This has the potential to put significant strain on

257 both public and private sector payers. Fewer adolescents, compared to younger children, have

258 private health insurance coverage for preventive services. At the same time, compared with

259 infants and young children, fewer adolescents are eligible for the federal Vaccines for Children

260 (VFC) program.⁸ The following recommendations suggest, at least in general terms, ways that

261 the multiple financial barriers to adolescent immunization could be addressed.

262

263 1. All public and private health insurance plans should offer first-dollar coverage of all costs

264 associated with the acquisition, handling, storage and administration of all vaccines

265 recommended for routine and “catch-up” use among adolescents by the Advisory Committee

266 on Immunization Practices (ACIP). Vaccine administration costs should be calculated to

267 include, but not be limited to, the value of time and materials needed for patient / parent

268 education, record keeping (including participation in an IIS), and other associated costs.

269 2. Provision of Federal and State tax incentives for insurance carriers and other entities (such as

270 employers who purchase health insurance for their employees) should be explored as an

271 effort to stimulate compliance with the foregoing recommendation on insurance coverage of

272 immunizations.

273 3. Develop and implement national legislation to mandate first-dollar insurance coverage of

274 ACIP recommended adolescent vaccines (and associated vaccination costs) in all health

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275 plans exempted from state mandates by the Employee Retirement Income Security Act
276 (ERISA) and in all health plans serving federal employees.

277 4. Refine the Vaccines for Children (VFC) program so that all VFC-enrolled providers are
278 allowed to use VFC vaccines to vaccinate adolescents who are underinsured for one or more
279 of the recommended vaccines and who cannot otherwise afford to be vaccinated.

280 5. Substantially decrease the time from creation to official publication of ACIP
281 recommendations in order to expedite decisions by insurers to cover new vaccines and new
282 indications for vaccines currently available.

283 6. Expand the Public Health Services Act 317 funding to support the additional national, state
284 and local public health infrastructure (e.g., widespread and effective education and promotion
285 for healthcare providers, adolescents, and their parents; coordination of supplementary and
286 alternative venues for adolescent vaccinations; record keeping and registries; vaccine safety
287 surveillance; disease surveillance) needed for adolescent immunizations.

288 7. Ensure adequate funding to cover all costs (including those incurred by the schools) arising
289 from assuring compliance with adolescent immunization mandates for school attendance.

290 8. Promote shared public and private sector approaches to help fund school-based and other
291 complementary-venue adolescent immunization efforts.

292 9. Continue federal funding for cost-benefit studies of vaccinations targeted for adolescents.

293 10. Carefully implement the foregoing recommendations to avoid substantial negative impact on
294 the private market for vaccines.

295

296 **SURVEILLANCE**

297 Efforts to promote vaccine coverage for children have benefited from the ability to monitor
298 trends in coverage and to analyze them in enough detail to initiate improvements in
299 immunization programs. Similarly, surveillance of vaccine preventable diseases among children
300 has demonstrated reductions in disease burden, morbidity, and mortality stemming from
301 successful implementation of immunization recommendations.⁹ Such data are essential to
302 demonstrating the usefulness of immunization and identifying issues including health disparities.

303

304 Surveillance is also expected to be an essential tool for supporting, evaluating and improving
305 immunization among adolescents. There are distinct challenges. Among the challenges in
306 determining coverage are the use of complementary and alternative immunization venues, the
307 lack of consistent reporting, dependence on electronic systems that do not allow integration of
308 functions to facilitate reporting, limitations of recall-based survey methodologies, and problems
309 in reaching representative sample populations. Tracking disease burden among adolescents is
310 made difficult by factors including non-classical presentations (as observed with pertussis) and
311 underreporting (e.g., genital warts). Below we make recommendations for surveillance and
312 monitoring of three key areas: vaccine coverage, disease burden, and vaccine safety and vaccine
313 associated adverse events. These recommendations should be considered for both existing
314 surveillance systems and mechanisms as well as for new initiatives that may be implemented in
315 the future.

316 1. Surveillance for vaccine coverage

317 a. Longitudinal measurement of vaccine coverage among adolescents requires sustainable
318 systems

- 319 b. Surveillance systems should be sustained or developed that are able to measure coverage
320 by:
- 321 i. Year
 - 322 ii. State
 - 323 iii. Age
 - 324 iv. Antigen/Strain/Pathogen
 - 325 v. Race and ethnicity group
 - 326 vi. Health care coverage status (e.g., insured, underinsured, uninsured) and type (e.g.,
327 public, private)
 - 328 vii. Poverty level
 - 329 vi. Residential area (e.g., urban, suburban, rural)
- 330 c. Efforts should be made to measure coverage among groups at risk, including
331 incarcerated, substance using, homeless and pregnant youth and those with chronic
332 illnesses.
- 333 d. Well-defined coverage targets should be developed for vaccinations routinely
334 recommended for administration to adolescents. National indicators are needed in the
335 following areas:
- 336 i. Vaccination coverage
 - 337 ii. Immunization Information Systems (e.g. adolescent participation rate, provider
338 reporting rate for adolescent vaccines, etc)
 - 339 iii. Health Plan Employer Data and Information Set (HEDIS) measures on Adolescent
340 Immunization Status (i.e., HEDIS measures should be updated to reflect current
341 adolescent recommendations)

- 342 2. Surveillance for disease burden
- 343 a. Ongoing measurement of vaccine-preventable disease burdens should include reportable
- 344 and non-reportable conditions. Standardized case definitions should be employed, and to
- 345 the extent possible, cases should be confirmed by appropriate laboratory tests. For some
- 346 diseases (e.g., meningococcal disease and human papillomavirus) specific surveillance to
- 347 track serogroups or genotypes is needed. Both passive and active surveillance may be
- 348 needed for some vaccine-preventable diseases.
- 349 b. Impact of adolescent immunization outside of the target age group needs to be
- 350 considered, especially for pertussis and human papillomavirus.
- 351 c. For some pathogens, including human papillomavirus and varicella-zoster viruses, both
- 352 long term and short term outcomes should be measured. As an example, many years will
- 353 likely be required to measure and document the impact of human papillomavirus
- 354 vaccination upon the rates of cervical cancer among U.S. females; however, decreases in
- 355 the occurrences of cervical cancer precursors and genital warts may be appreciable during
- 356 a shorter time horizon.¹⁰
- 357 d. Surveillance should be updated to anticipate new indications and new antigens. This will
- 358 allow establishment of baseline infection /disease rates and facilitate future assessments
- 359 of vaccination impact [e.g., improved surveillance related to cytomegalovirus (CMV)
- 360 infection may be warranted given that CMV vaccine candidate(s) are in development].
- 361 e. Data should be collected with sufficient detail that changes can be correlated with
- 362 vaccination rates.
- 363 3. Monitoring for vaccine safety and vaccine associated adverse events

- 364 a. Surveillance and hypothesis testing systems should include adequate numbers of
365 adolescents to detect and evaluate safety signals.
- 366 b. Research should anticipate the conditions that frequently arise during adolescence that
367 might be considered as potential adverse events. Definitions and background rates should
368 be developed in advance for these conditions and disorders.
- 369 4. All surveillance systems supporting adolescent immunization
- 370 a. These systems should reflect the qualities of any effective surveillance system: They
371 should be timely, representative, consistent, accurate, and the results should be widely
372 disseminated in a timely manner to influence policy and practice. The systems should
373 adapt to and take advantage of changing technologies.
- 374 b. For surveillance systems to work, all health care providers delivering immunizations to
375 adolescents in communities and other settings (e.g., military, corrections facilities,
376 colleges) should be provided with education regarding the importance of disease
377 reporting, adverse event reporting, and participating in immunization information
378 systems (IIS).

379

380 **SCHOOL MANDATES**

381 Compulsory or mandated vaccinations for school entry are credited with helping the United
382 States achieve high childhood vaccination coverage rates and subsequently low rates of vaccine-
383 preventable diseases among young children.^{11,12} While school mandates have proven to be a
384 valuable public health tool, they have also generated concern and debate regarding their ability to
385 balance the public's health and individual/parental rights.¹³ In a previously published paper¹⁴,
386 the NVAC adolescent working group assessed the issues related to school mandates for

387 adolescent vaccination and provided recommendations for jurisdictions considering
388 implementation of an adolescent vaccination mandate. In the interest of being complete, we are
389 including the school mandate recommendations here.

390

- 391 1. Partnership. Secure the input and partnership of state and local immunization program
392 personnel and adolescent health care providers in drafting legislation/regulation regarding
393 mandating adolescent vaccines. Work closely with school administrators and school health
394 personnel to ensure that potential school-level administrative and enforcement burdens are
395 minimized.
- 396 2. Infrastructure and Financing. Use the expert input of partners to address infrastructure issues
397 that may impact the implementation of an adolescent vaccine mandate. These include such
398 issues as: vaccine purchasing, supply, storage, safety profile, uptake, and target population.
399 Identify and plan for all direct and indirect costs of vaccine administration, including
400 adequate provider reimbursement and costs associated with implementing a new mandate, to
401 ensure equitable access to mandated vaccines.
- 402 3. Consistency. Look for ways to incorporate new mandates as seamlessly as possible into
403 existing vaccine legislation/regulation, and ensure that new mandates do not contradict
404 existing legislation/regulation in areas such as reporting of coverage levels, penalties for non-
405 compliance (e.g., being held out of school), and immunization information system reporting
406 requirements. Consistency with existing policies may also minimize vaccine-specific or
407 convenience exemptions when a new vaccine is introduced.
- 408 4. Support. Ensure that adequate political and public support exists before incorporating an
409 adolescent vaccine mandate into existing state legislation/regulation. Education of parents

410 and health care providers on vaccines, vaccine-preventable diseases, and mandates is
411 encouraged to secure public understanding and support, increase voluntary uptake, and to
412 minimize the administrative burden on school health personnel.

413

414 **Conclusion**

415 In this report we have provided recommendations to six critical issues challenging the US health
416 care system to fully vaccinate the adolescent population. Undoubtedly, some of the
417 recommendations will require new resources and it is our sincere hope that policy makers will
418 recognize the importance of adolescent vaccination and provide the necessary resources. The US
419 has a history of implementing and sustaining a strong infant and childhood immunization
420 program and we believe the same can be achieved for the adolescent population. We strongly
421 urge policy makers, immunization program managers, and health care providers to work together
422 to implement these recommendations and create a strong adolescent immunization program.

423

424 The adolescents of our nation deserve no less.

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