



Increasing cervical cancer screening in Asian women under 40 in New York through Community-Based education and Expanded Access to Gynecological Care

Presented by: “The Asians”

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About the Project

Our goal is to **boost cervical cancer awareness** and **emphasize its preventability** among **Asian women under 40 in New York** . To achieve this, we will implement a multifaceted approach that includes: **culturally-tailored workshop and digital reminder outreach.**

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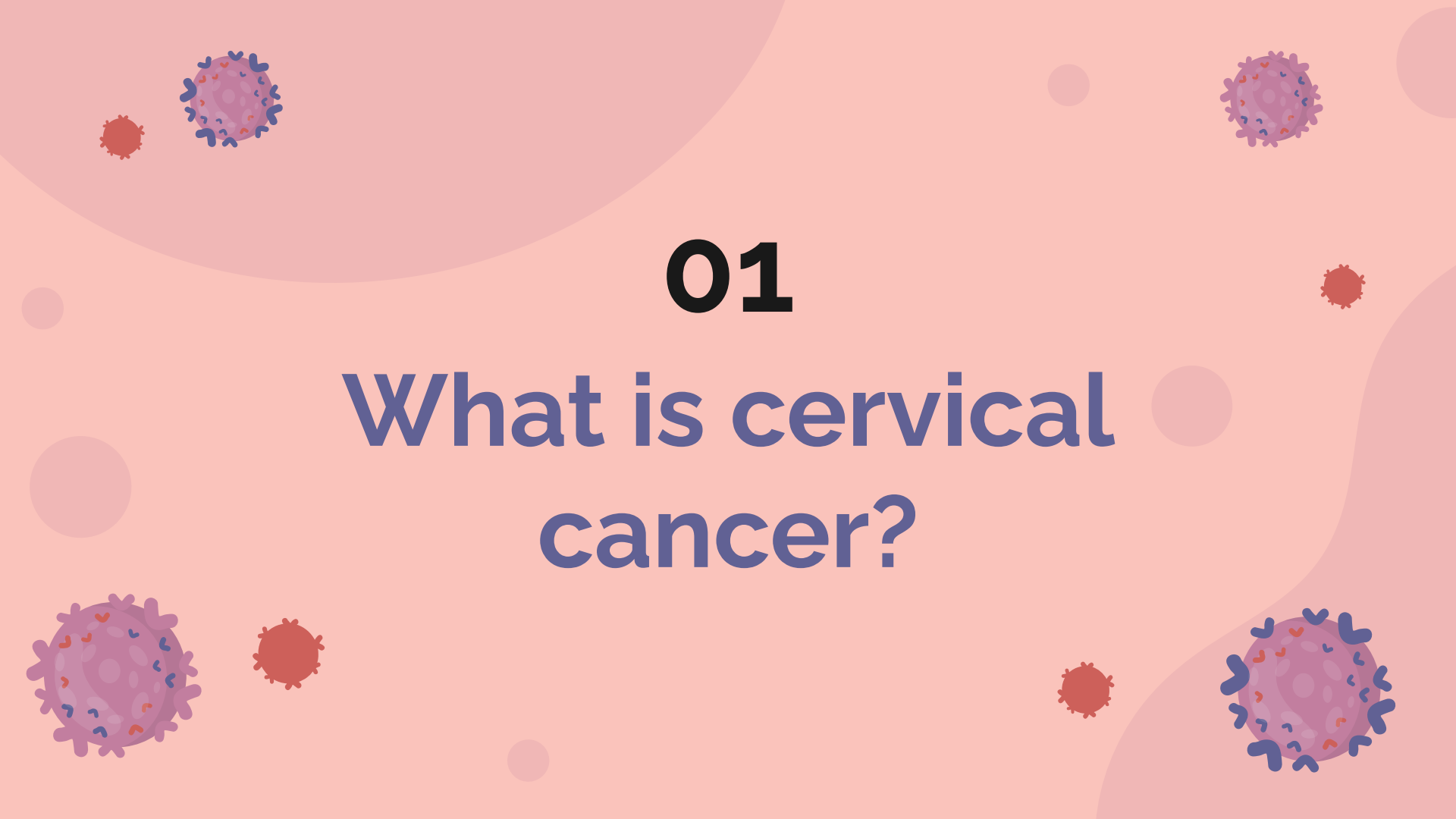
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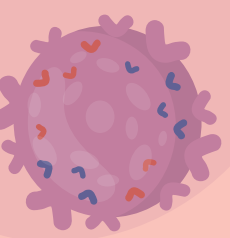
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01

What is cervical cancer?

Cervical Cancer

- A growth of cells that starts in the cervix, the lower part of the uterus that connects to the vagina
- **Fourth** most common female cancer worldwide
- Almost all cases are caused by persistent infection with high-risk **human papillomavirus (HPV)**
- One of the most **preventable and treatable** forms of cancer when detected early
- Two main types: **Squamous cell carcinoma (90%)** and adenocarcinoma

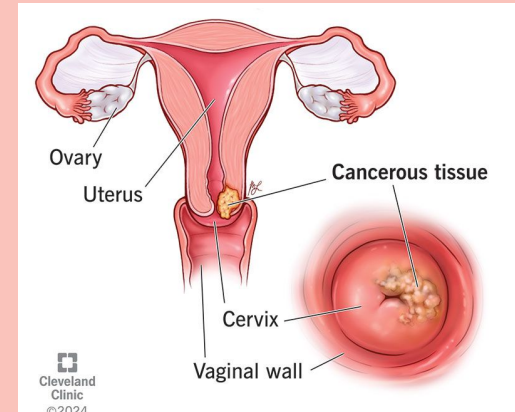


Risk Factors

- High-risk types, **HPV 16 and HPV 18** , cause 70% of cervical cancers worldwide
 - Weakened immune system (immunocompromised)
 - Women with **HIV** are **6 times** more likely to develop cervical cancer
 - Smoking or secondhand smoke
 - Long term use of oral contraceptives & child birth
 - Obesity
- 

Symptoms

- Often **asymptomatic** in early stages
- When symptoms appear, they may include:
 - Vaginal bleeding (after sex or between periods)
 - Foul-smelling vaginal discharge
 - Pelvic or back pain
 - Pain during intercourse
 - Difficult or painful bowel movements and urination
 - Swelling of the legs



Screening

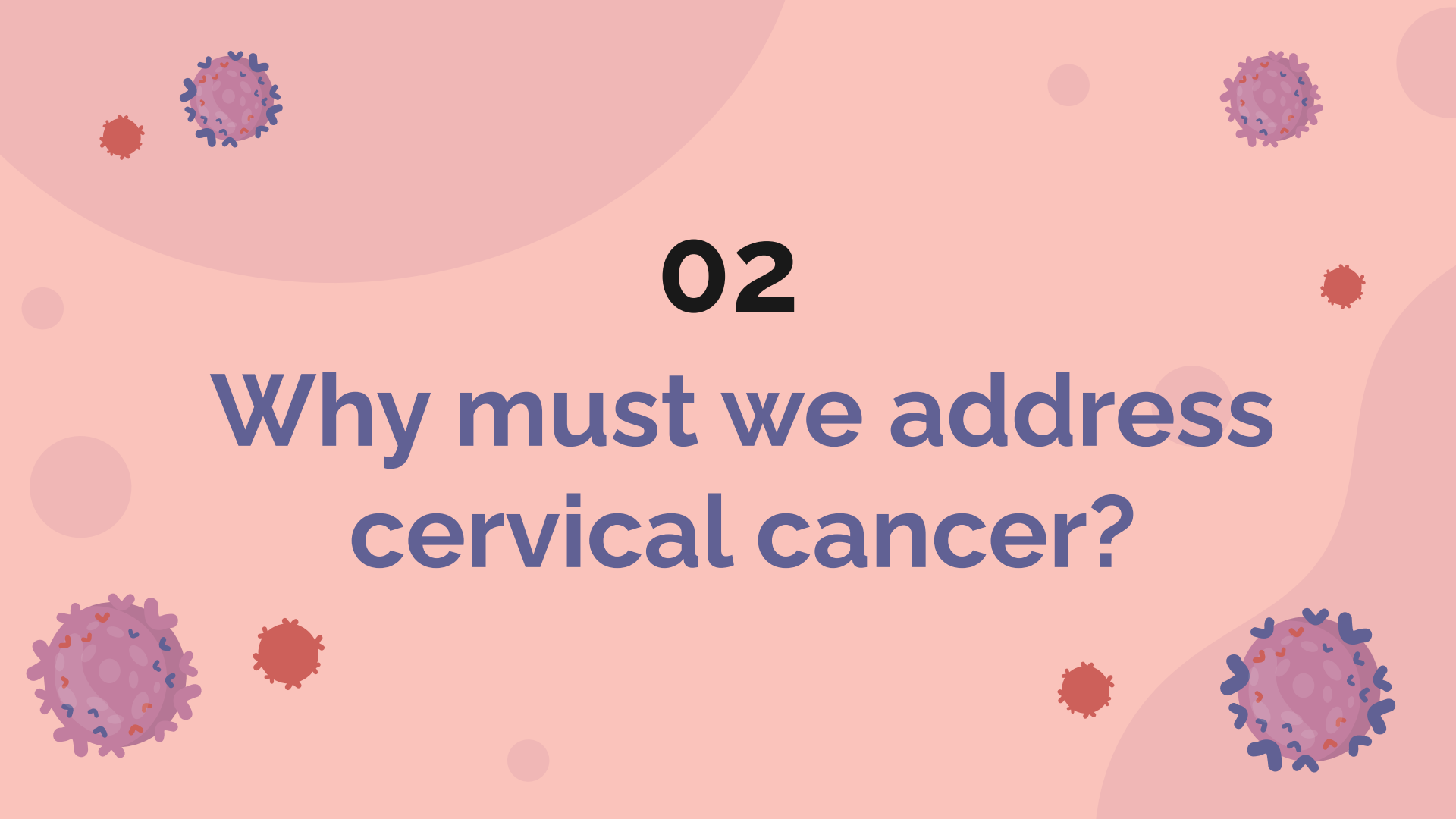
- **Pap smear** collects cervical cells and detects for any abnormalities (precancerous cells and cervical cancer cells)
 - Recommendation: Pap tests every three years for women aged 21 to 65 years
- **HPV testing** detects high-risk virus strains that lead to cancer
 - Recommendation: HPV testing or HPV/Pap co testing every 5 years for women between the ages of 30 and 65

Prevention

- HPV vaccine protects against strains that cause ~90% of cervical cancers
- **Gardasil 9** is the FDA-approved vaccine for females and males aged 9 to 45 in the United States
 - Prevent precancers and cancers caused by seven cancer-causing HPV types (16, 18, 31, 33, 45, 52, and 58)
- HPV vaccine offers most protection when given before a person becomes sexually active
 - Recommendation: routine vaccination at age 11 or 12 (two or three doses in total)
- In 2023, only **57.3%** of adolescents aged 13-15 had received HPV vaccine as recommended

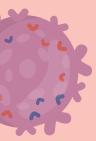
Global Elimination Initiative

- World Health Organization (WHO) has initiated a program to eliminate cervical carcinoma through following 90-70-90 targets for 2030.
 - **Vaccination** : 90% of girls fully vaccinated with the HPV vaccine by the age of 15
 - **Screening** : 70% of women screened using a high-performance test by the age of 35, and again by the age of 45
 - **Treatment** : 90% of women with pre-cancer treated and 90% of women with invasive cancer managed

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02

**Why must we address
cervical cancer?**

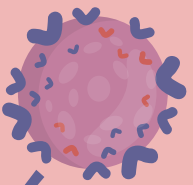


604,127

New cases of cervical
cancer globally

341,831

Deaths from cervical
cancer globally



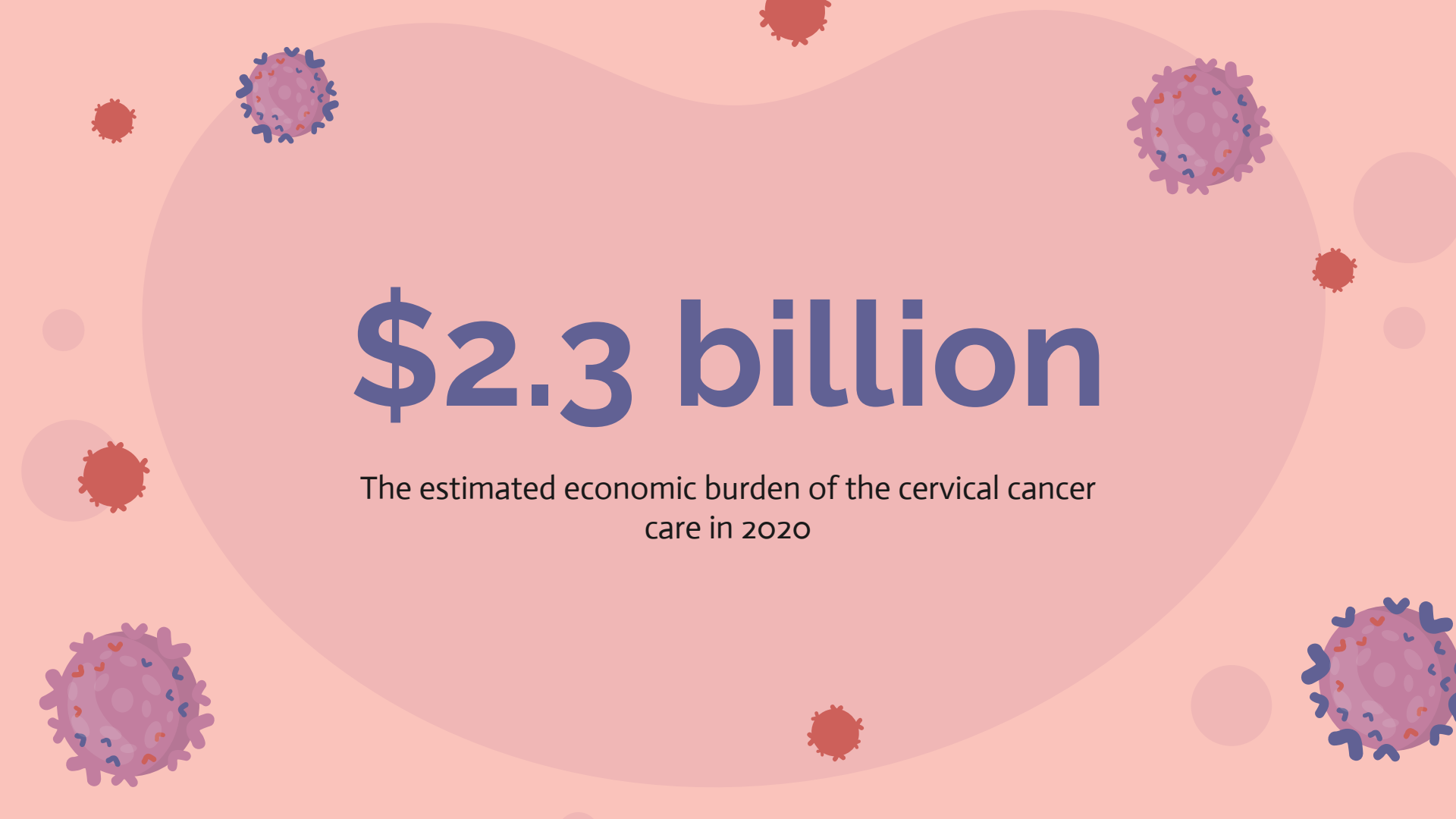
75.8%

of women aged 21-65 were
up-to-date with cervical
cancer screening in 2023



Expected New Cases by
2045 : 908,612



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\$2.3 billion

The estimated economic burden of the cervical cancer
care in 2020

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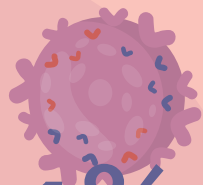
03

**Population: Asian Women
under 40 in New York**



5,752,000

NY White ♀ Population



81.1%

Cervical Cancer Screening
Rate



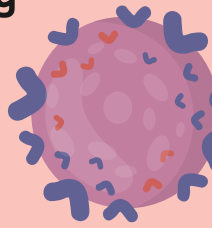
920,372

NY Asian ♀ Population



64.0%

Cervical Cancer Screening
Rate



**Ma'am, you
have cancer.**



Average Age of Diagnosis

White: 50.1

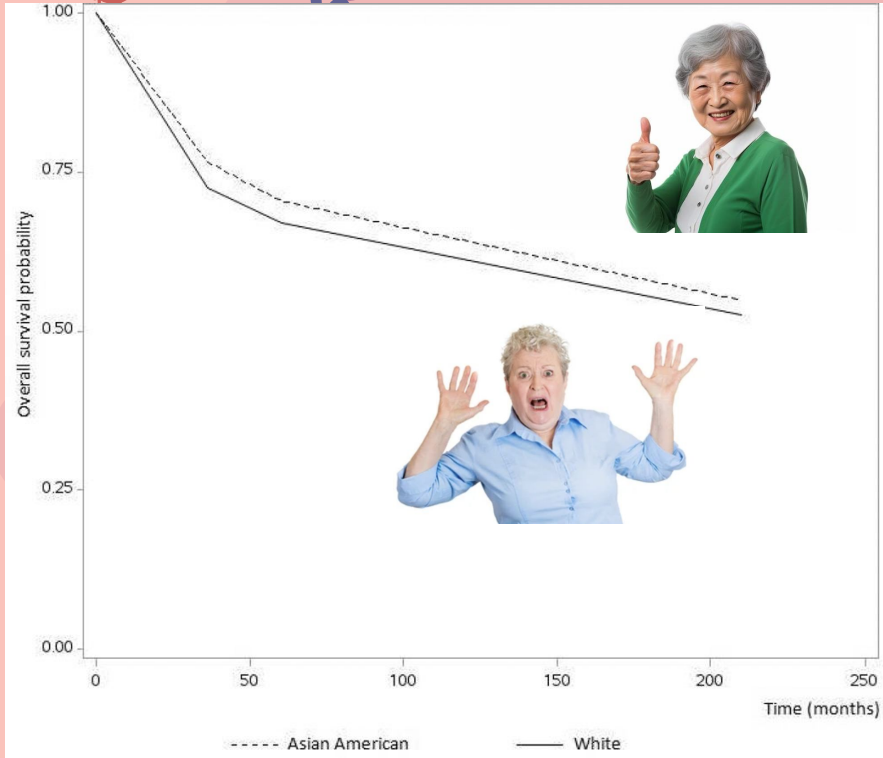
Asian: 53.4

Chance of advanced disease

White: 8%

Asian: 19%

Survival Rate



Nghiem VT, Davies KR, Chan W, Mulla ZD, Cantor SB. (2015, October). Disparities in cervical cancer survival among Asian-American women. *Ann Epidemiol*.

<https://pmc.ncbi.nlm.nih.gov/articles/PMC4688093/>

<40 y/o

2x



OVERDUE



Rate (2019): 20.1%



Rate (2019): 31.4% → **HIGHEST**
NO IMPROVEMENT OVER 14
YEARS!!!



BUT WHY THO

Lack of Knowledge

"I don't drink, I don't smoke, and I kind of watch what I eat. And I do a lot of exercise; I am a very active person. I think cervical cancer may be from more liberal lifestyle."

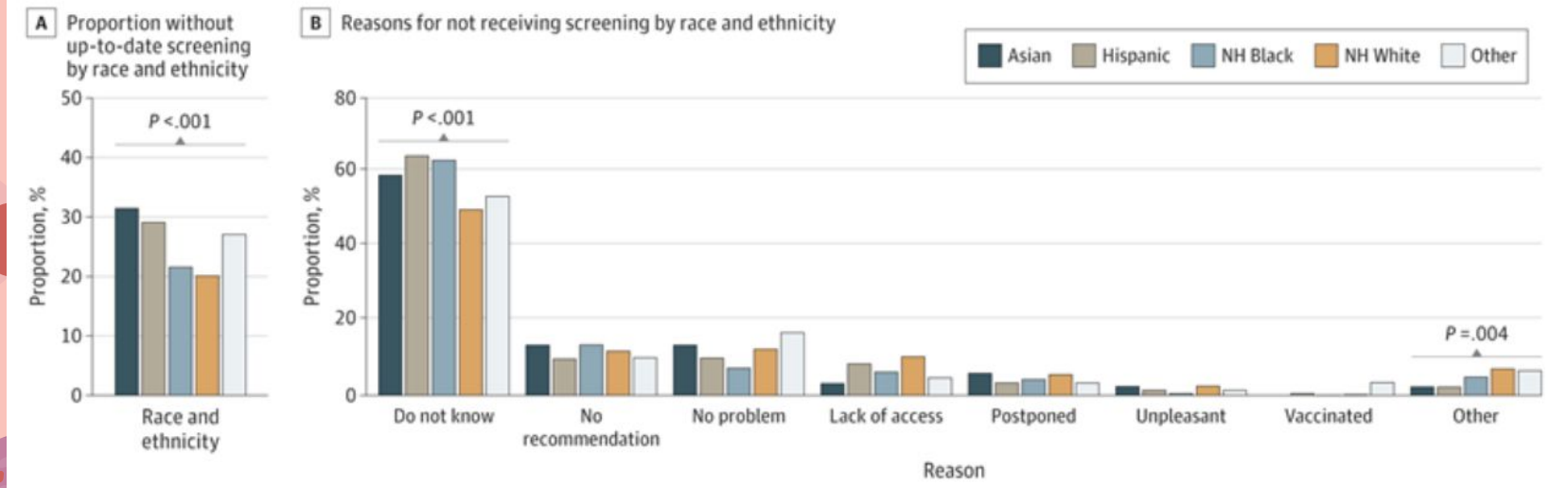
- Chinese Lady

"You know most Chinese don't want to talk about female disease with other people, we don't want to spread it around; it's very private."

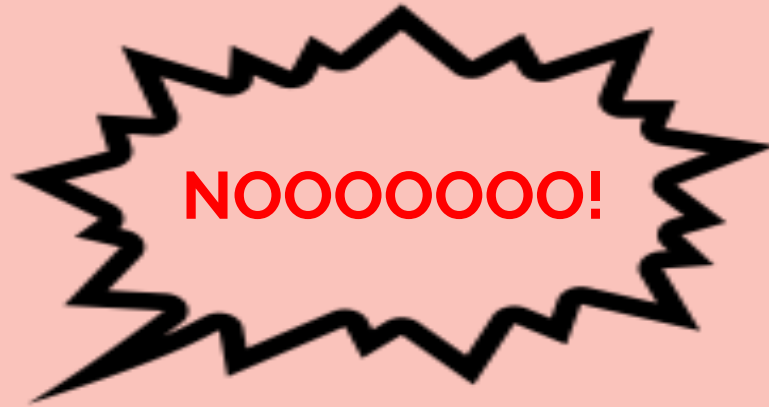
- Another Chinese Lady



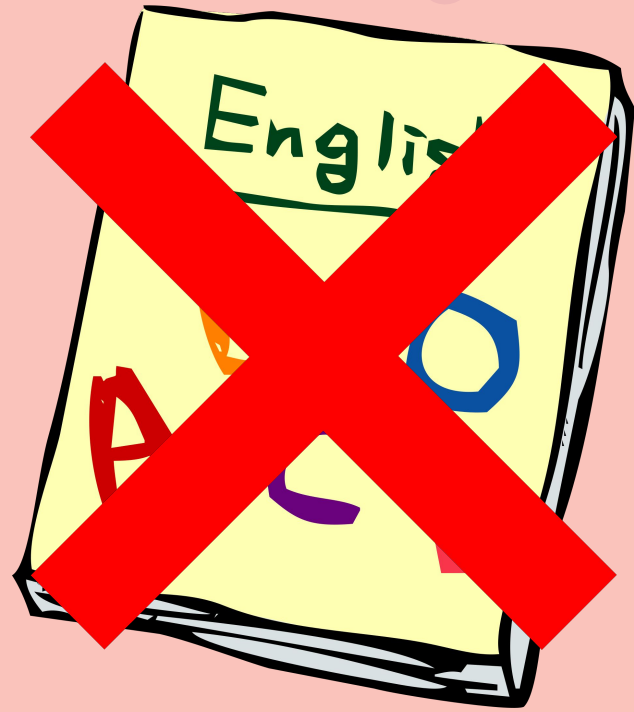
Figure 2. Proportion of Individuals Without Up-to-date Screening and Primary Reasons for Not Receiving Screening by Race and Ethnicity, Sexual Orientation, Rurality of Residence, and Insurance Type, 2019



Suk, R., Hong, Y.-R., Rajan, S. S., Xie, Z., Zhu, Y., & Spencer, J. C. (2022). *Assessment of US Preventive Services Task Force guideline-concordant cervical cancer screening rates and reasons for underscreening by age, race and ethnicity, sexual orientation, rurality, and insurance, 2005 to 2019*. JAMA Network Open, 5(1), e2143582.



Mistrust & Fear



Limited proficiency
76% less likely to get Pap smear

04 Interventions

Culturally tailored education workshops

Addressing the problem

- Language barriers
- Cultural stigma around sexual health
- Lack of health literacy and awareness

Mode of delivery

- **In-person group workshops**
 - Community centers (local recreation center), faith-based organizations (churches, temples, mosques), community health center, cultural association buildings (Korean American Association of Greater NY)
 - Self-sampling kit demonstration sessions
 - Multilingual and low-literacy educational materials (pamphlets, posters, multimedia)
 - Patient navigation
 - Community support
- **Virtual workshops**
 - Zoom, WeChat, KakaoTalk, LINE
 - Live or recorded sessions in native languages



Culturally tailored education workshops

Performed by

- Bilingual community health educators and workers

Changes to occur

- Increase awareness and knowledge of HPV/cervical cancer screening
- Reduce screening stigma and improve confidence and intention to screen

Timeline

- **Pilot phase (months 1-3)**
 - Monthly workshops in 2-3 neighborhoods with large Asian population (Flushing, Chinatown, Sunset Park)
- **Expansion phase (months 4-12)**
 - Weekly or biweekly workshops
 - Expand to more communities (Elmhurst, Bayside, Bensonhurst)
- **Maintenance phase (2-10+ years)**
 - Monitor and evaluate for quality improvement
 - Pre & post surveys, change in knowledge/attitudes, attendance, HPV screening kit distribution and return rate
 - Cost-effective, generational/long-term behavioral change

Reminder systems & Social Media Outreach

Reminder Systems-

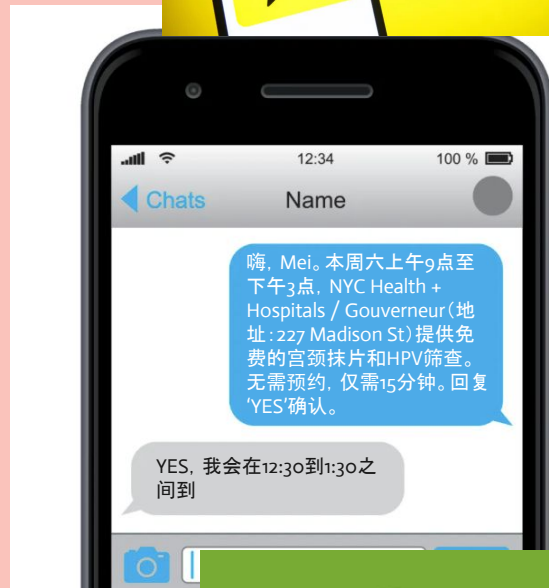
- *Ghana Study*: developed 32 SMS messages targeting knowledge, fear, time, cost/access about cervical cancer → 87% read within 1 hour, 94.6% said they'd get screened (Bonful et al., 2022).
- This approach can be adapted to NYC using culturally relevant SMS via **KakaoTalk for Korean Americans**, previously shown effective in promoting Hep B screening (Hong et al., 2022).

Social Media Outreach-

- WeChat: Widely used in Chinese-speaking communities; supports reminders and culturally tailored education.
- A **WeChat-based intervention** improved support and education for gynecologic cancer patients (Sun et al., 2022), showing promise for cervical cancer outreach.

Delivery & Duration-

- Text-based delivery
- **WeChat & SMS Outreach**: Initial 3-6 months **trial phase** with monthly reminders and tailored health messages; followed by **ongoing phase** with campaigns every 3 months using WeChat posts, groups, and direct messaging to sustain cervical cancer screening awareness.



Stakeholders

Community-based organizations:

- Organize education workshops and assist with kit distribution and follow-up visits
- Assist with outreach through SMS reminders and culturally relevant social media platforms (e.g., WeChat, KakaoTalk)
- Provide low-literacy educational materials in multiple languages to promote participation in cervical cancer screening

Ex: Charles B. Wang community health center, Korean Community Services of NY, Asian Americans for Equality, Brooklyn Chinese American Association, Chinese Planning Council

Community health workers

- Deliver culturally tailored education in native languages (Mandarin, Cantonese, Korean, Vietnamese, etc)
- Support patient navigation to screening services
- Help with consent, explanation of self-sampling kits

NYS Department of Health

- Provide financial assistance and support to promote self-sample testing
- Integrate official screening guidelines to approve self-sampling at home as an alternative to screening in-office-setting
- Support development and dissemination of SMS reminders and digital outreach in multiple languages

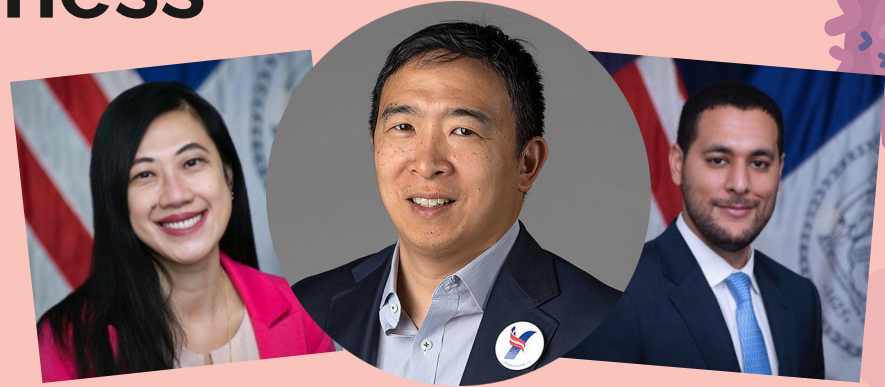
Healthcare providers

- Educate patients about the importance of HPV and cervical cancer screening
- Recommend screening methods like pap smears, self-sampling kits when appropriate
- Deliver culturally appropriate care by understanding patient's diverse beliefs and values and addressing the unique needs of diverse patient populations

Awareness



Ethnic Media Platforms



Local Leaders



Cultural/Faith-based
Organizations



Intervention #1: Financial Requirement

Table 1.

Activity Costs of Intervention for the CHW Health Literacy Group and the Control Group (US\$ 2013)

Program activity	Intervention group	Control group
Research and development		
Staff salary and benefits	102,112	-
Intervention material development	19,705	-
Total	121,817	-
Recruitment and training		
Staff salary and benefits	48,765	48,765
Training of CHWs		
Printing	92	131
Supplies	550	786
DVD players	1,556	0
Staff wages	1,741	1,161
Refreshments	425	185
Total	53,130	51,028
Implementation of intervention		
CHW stipend	61,459	21,920
CHW site supervisor	8,977	2,993
Total	70,437	24,913
Study total	245,383	75,941
Average cost per participant (including research and development cost)	883	269
Average cost per participant (excluding research and development cost)	444	269
Average cost per screening (including research and development cost)	1,002	1,766
Average cost per screening (excluding research and development cost)	504	1,766

Table 2.

Incremental cost-effectiveness ratio (ICER) that includes development costs comparing CHW health literacy intervention group to control group

Group	Costs (US\$)	Incremental cost	Screenings completed	Additional screening	ICER (US\$)
Control group	75,941		43		
Intervention group	245,383	169,441	245	202	839

Table 3.

Incremental cost-effectiveness ratio (ICER) that excludes development costs comparing CHW health literacy intervention group to control group

Group	Costs (US\$)	Incremental cost	Screenings completed	Additional screening	ICER (US\$)
Control group	75,941		43		
Intervention group	123,566	47,625	245	202	236

Reference: Schuster, A. L. R., Frick, K. D., Huh, B.-Y., Kim, K. B., Kim, M., & Han, H.-R. (2015). Economic evaluation of a community health worker-led health literacy intervention to promote cancer screening among Korean American women. *Journal of Health Care for the Poor and Underserved*, 26(2), 431–440. <https://doi.org/10.1353/hpu.2015.0050>

Intervention #2- Financial Requirement

SMS Campaign (Trial & Ongoing)

- Studies found that estimated cost for one SMS reminder was \$0.05 (Vives et al., 2024)
- **Trial Phase:** 1 text/month for 3-6 months x estimated 500-1,000 women = **Cost ~ \$75- \$300 total**
- **Ongoing Phase:** 1 text/ 3 months x estimated 1,000, 2,500, 5,000 etc= **Cost ~ \$200- \$1,000 annually****
(depends on outreach scale)

****These estimates utilize U.S.-based text delivery through a service like Twilio or EZ Texting, which charge approximately \$0.04 –\$0.06 per SMS.***

WeChat Outreach (Ongoing)

- Creating and managing content through official accounts or group chats is low. Expenses mostly stems from amount of staff and designs.
 - A WeChat group-based child health education program in Shanghai cost around 3,300-3,600 yuan, which approximates to **(\$460-500 annually)** (Feng et al., 2022)
- We could **leverage existing digital communities** for visibility and effective culturally-tailored messaging in Chinese-speaking populations (Sun et al., 2022)

Intervention #1- Source of Funding

Federal and local funding and partnerships

- **Center for Disease Control and Prevention**
 - **National Breast and Cervical Cancer Early Detection Program (NBCCEDP)** - fund screening and outreach for underserved women through partnership with local and non-profit health organizations
 - Funds may cover program development, CHW training, education toolkits, HPV sampling kits
- **NYS Department of Health and Human Services**

Private Foundations and Nonprofits

- **National Cervical Cancer Coalition** - encourages and fund community engagement by supporting local chapters in organizing health fairs, educational and awareness campaigns about HPV, cervical cancer and available resources
- **American Cancer Society** - partners with community organizations including churches and nonprofits to reach diverse populations with cancer resources and information
- **Prevent Cancer foundation** - supported over 100 community-level grant projects focused on cancer prevention, screening, education and vaccination

Community partners

- **Local church groups, community centers, health centers** - provide free venue space, volunteers and bilingual staff, translation services

Intervention #2- Source of Funding

SMS Campaign (Trial & Ongoing)

- **Twilio.org** - offers discounted or free SMS credits for public health and nonprofit organizations
- **NIH/NCI Community Health Grants-** supports digital interventions, can fund SMS-based outreach

WeChat Outreach

- **Asian American Health Initiative (AAHI)-** fund ethnic media outreach, including platforms like WeChat, especially for Chinese-speaking populations
- **NYC Department of Health- Media Campaigns Division** - fund social media campaign in multiple languages and platforms

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05

Success Measures

Success Measures

Culturally-tailored workshops

Screening uptake

- Goal: increase number of women who receiving cervical cancer screening (Pap smear, HPV test)
- How to measure:
 - pre/post interventional self-report survey
 - Return rate of self-sampling kit

HPV knowledge and awareness

- Goal: Improve knowledge about HPV, screening guidelines, and cervical cancer prevention
- How to measure:
 - Simple 5–10 item questionnaire before and after the session
 - Practical demonstration or explanation of HPV self sampling after session

Attitude towards sexual health

- Goal: reduce stigma and shift in attitude toward sexual health, increase intention to get screened
- How to measure:
 - pre/post surveys using Likert scale
 - “On a scale of 1-5, 1 being “not confident at all” and 5 being “completely confident”, how confident are you in getting a pap smear or HPV test now?”

Table 2. Paired Sample T-Test Results of Changes in Psychosocial Outcome from Baseline to Post-Intervention Assessment.

	Baseline mean (SD)	Post-intervention mean (SD)	Change mean (SD)	P-value
Knowledge	2.83	4.89	2.06	.001
Social support	3.91	4.09	.18	<.001
Self-efficacy	3.05	3.59	.54	<.001
Comfort	3.62	4.06	.44	<.001

Abbreviation: SD = standard deviation

Reference: Ma, G. X., Zhu, L., Zhai, S., Lin, T. R., Tan, Y., Johnson, C., Fang, C. Y., Belinson, J. L., & Wang, M. Q. (2022). Empowering Low-Income Asian American Women to Conduct Human Papillomavirus Self-Sampling Test: A Community-Engaged and Culturally Tailored Intervention. *Cancer control : journal of the Moffitt Cancer Center*, 29, 10732748221076813. <https://doi.org/10.1177/10732748221076813>

Success Measures Cont'd

SMS & WeChat Outreach-

- **Engagement rates-** % of messages opened or replied to (tracked via analytic database on all platforms utilized)
- **Short digital surveys-** (1-3 questions via message link) after viewing message campaigns to assess knowledge and experience
- **Screening intent/actions** - % of people who plan or have scheduled screening post-reminders.
- **Interest Tracking-** Using an optional “YES” for consent to track interest after messages.

*** Supported studies by Bonful et al., 2022- 94.6% planned screening after SMS and Sun et al., 2022- WeChat outreach improved knowledge and support of cervical cancer.*

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06

Limitations & Barriers

Limitations & Barriers

1. **Health Literacy and Language:** A large portion of our targeted population have limited English proficiency. Written materials must be translated into multiple Asian language and also simplified for low-literacy audiences. Culturally mismatched terms may reduce clarity.
2. **Cultural Stigma:** Stigma around sexual health and cancer can prevent open discussion or acceptance of screening. Even though the intervention includes educational workshops to reduce stigma, this assumes that individuals are willing to attend. If community members choose not to engage due to embarrassment, or fear, the intervention's impact will be limited.
3. **Technology Access:** Virtual workshops on platforms like Zoom, KakaoTalk, and WeChat may not reach to all participants. Many may not have reliable access to smart-phone, or Wi-Fi and may not be comfortable with digital platforms. This can reduce attendance at virtual workshops or follow-through with reminders
4. **Lack of Care Coordination** : Even if women attend workshops or receive text reminders, many lack a regular healthcare provider to schedule or follow through on screening. Community-based efforts may not directly link to clinical systems, leading to gaps in follow-up after abnormal results.
5. **Self-Sampling Kit Accuracy & Quality:** Improper sample collection due to lack of instruction or technique may lead to false positives or false negatives. It may be less sensitive than clinician-collected samples. False positives can cause unnecessary anxiety and lead to avoidable procedures.



THANK YOU!!



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