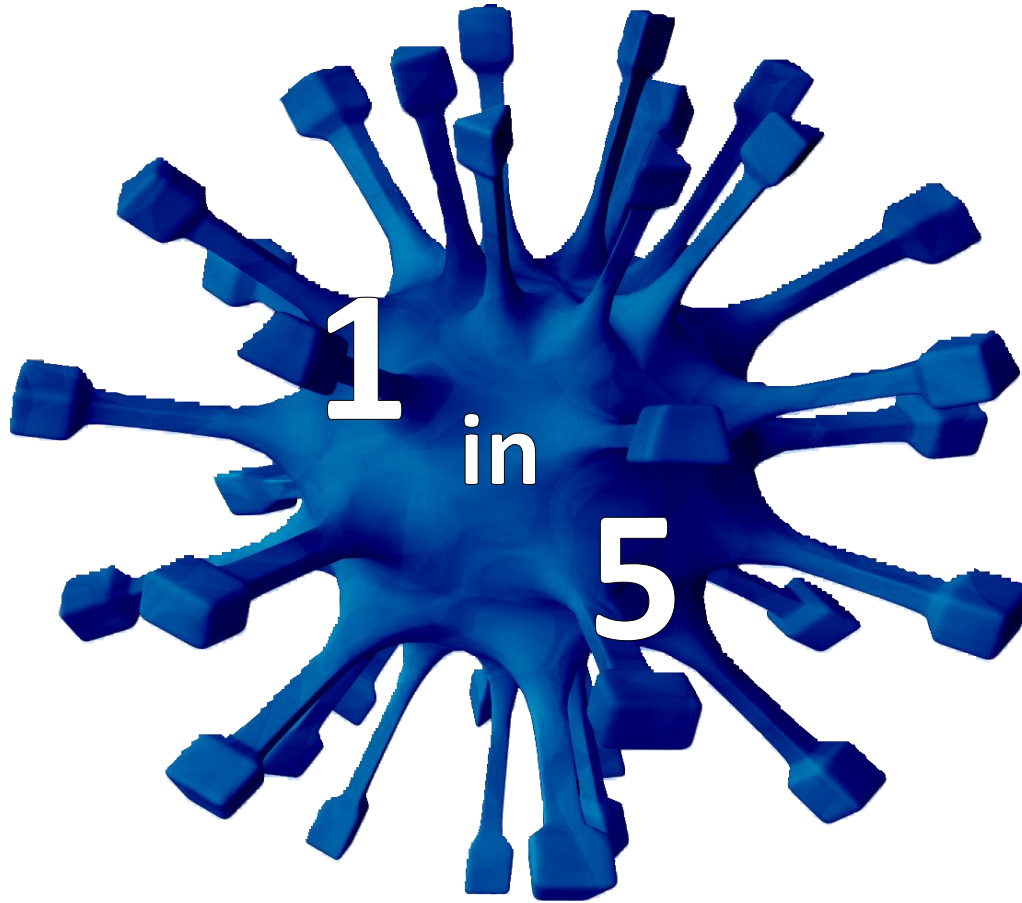


CENTER FOR INFECTION RESEARCH IN CANCER



Anna R Giuliano, PhD
Director

*Number of Cancers Caused by Infections**

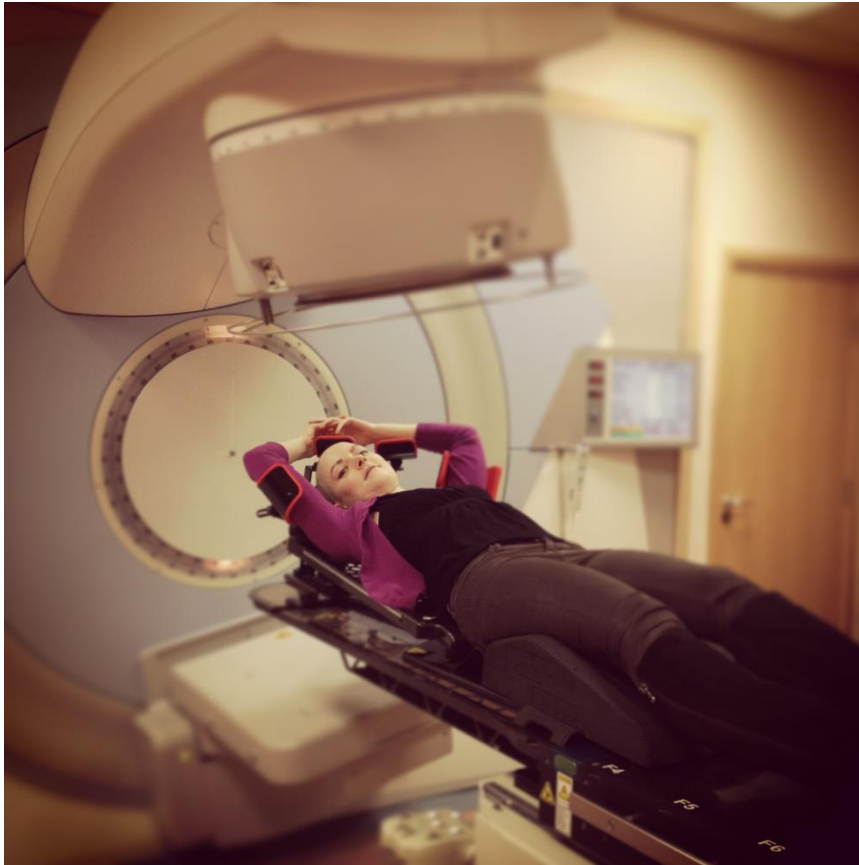


(*That we know of)

Examples of Tumor Types Known to be Caused by Infections

Tumor Type	Infectious Cause
Cervix; anal and perianal cancers (>90%)	Various HPV types
Vulvar, penile and vaginal cancers (~50%)	
Head and neck cancers (~78%)	
Squamous cell carcinomas of skin (unknown attributable fraction)	
Hepatocellular carcinomas	Hepatitis B and C viruses
B-cell lymphomas in immunocompromized patients (50%) and in some T-cell lymphomas	Epstein-Barr Virus
Burkitt's lymphoma	
Nasopharyngeal cancer	
Hodgkin's lymphoma (30-40%)	
Gastric cancer (10%)	
Adult T-cell leukemias	HTLV-1
Seminomas	Endogenous retroviruses
Kaposi's sarcoma	HHV-8
Gastric cancer and gastric lymphoma	<i>Helicobacter pylori</i>
Bladder cancer; rectal cancer	Schistosoma species
Cholangiocarcinoma	Opisthorchis species; <i>Clonorchis sinensis</i>

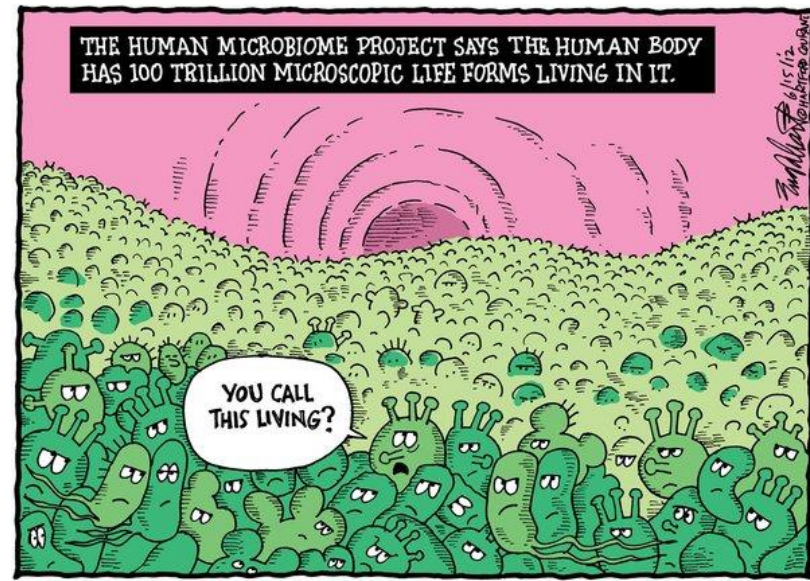
Radiosensitivity and Infection-Related Cancers



- Clues to discovery of infections that cause tumors
- Reduced radiation doses, patient-sparing effective treatment for tumors caused by infections

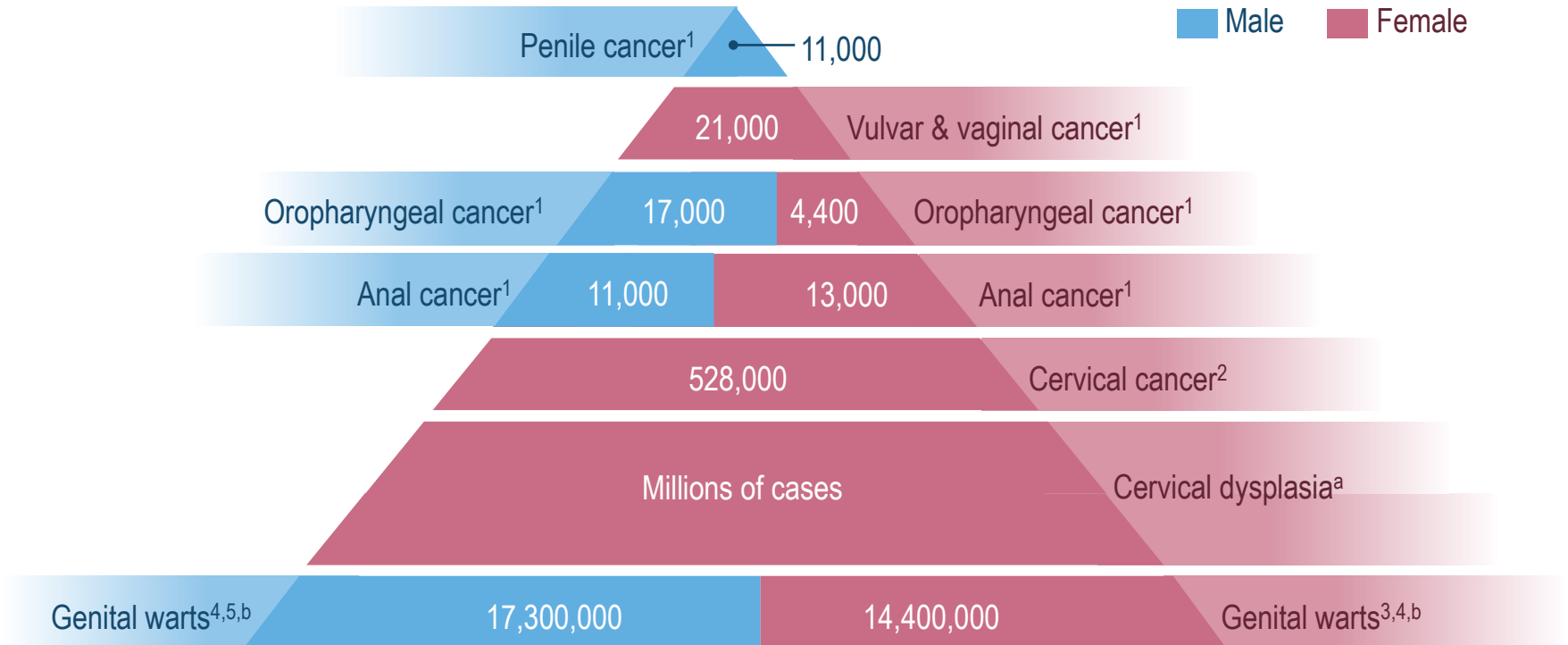
The Microbiome: New Area of Research:

- Protect against cancer?
- Increase progression to cancer?
- Tumor microbiome profiles and clinical response to cancer treatment
 - Head and neck cancers
 - Colorectal Cancers
 - Breast Cancers
 - Melanoma





High and Costly HPV Disease Burden Among Males and Females Worldwide

Global Estimated Annual New HPV-Related Disease Cases in Males and Females



Burden of HPV-Related Disease in Males

- Genital warts
 - Recurrent respiratory papillomatosis (RRP)
- 
- >90% caused by
HPV 6 & 11
- Anal cancer
 - Penile cancer
 - Oropharyngeal and oral cavity cancers
- 
- ~30%–90% caused by
HPV 16 & 18

There are no routinely available reliable screening methods for cancers caused by HPV in men

Local Florida HPV Vaccine Coalition

- PITCH – (Partnership to Immunize Teens and Children against HPV) was one of 18 supplements awarded to NCI Cancer Centers

- January 14, 2015

First meeting of PITCH Stakeholders to discuss strategies to increase HPV vaccination in FL



National HPV Vaccine Meeting

Increasing HPV Vaccination in the U.S. from 36% to 80%: A Collaboration of NCI-funded Cancer Centers

- Discussion of national strategy, common goals and approaches
- 76 representatives from 37 cancer centers
- Top-level representatives from the NCI, CDC, ACS, and U.S. Congress



Vaccination Success to Date: The HPV Story

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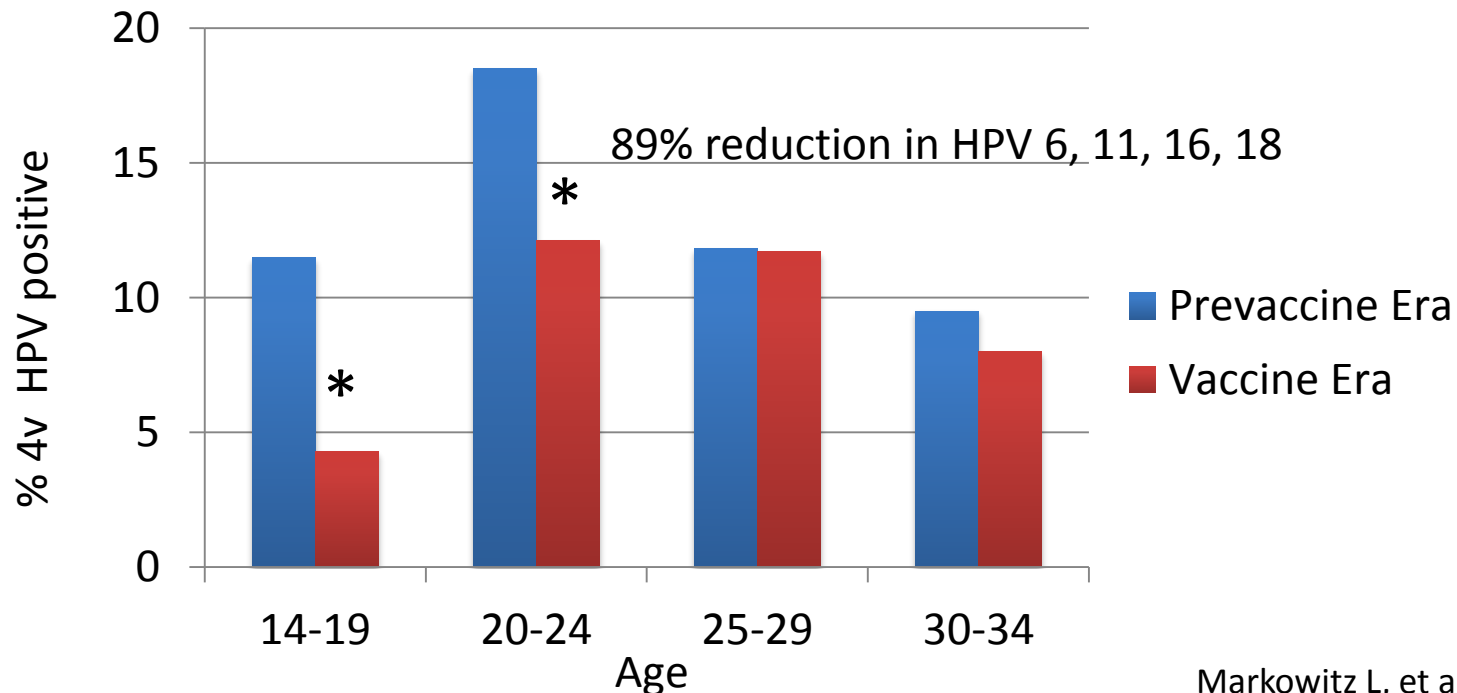
ORIGINAL ARTICLE

Efficacy of Quadrivalent HPV Vaccine against HPV Infection and Disease in Males

Anna R. Giuliano, Ph.D., Joel M. Palefsky, M.D., Stephen Goldstone, M.D., Edson D. Moreira, Jr., M.D., Mary E. Penny, M.D., Carlos Aranda, M.D., Eftyhia Vardas, M.D., Harald Moi, M.D., Heiko Jessen, M.D., Richard Hillman, M.D., Yen-Hwa Chang, M.D., Daron Ferris, M.D., Danielle Rouleau, M.D., Janine Bryan, Ph.D., J. Brooke Marshall, Ph.D., Scott Vuocolo, Ph.D., Eliav Barr, M.D., David Radley, M.S., Richard M. Haupt, M.D., and Dalya Guris, M.D.

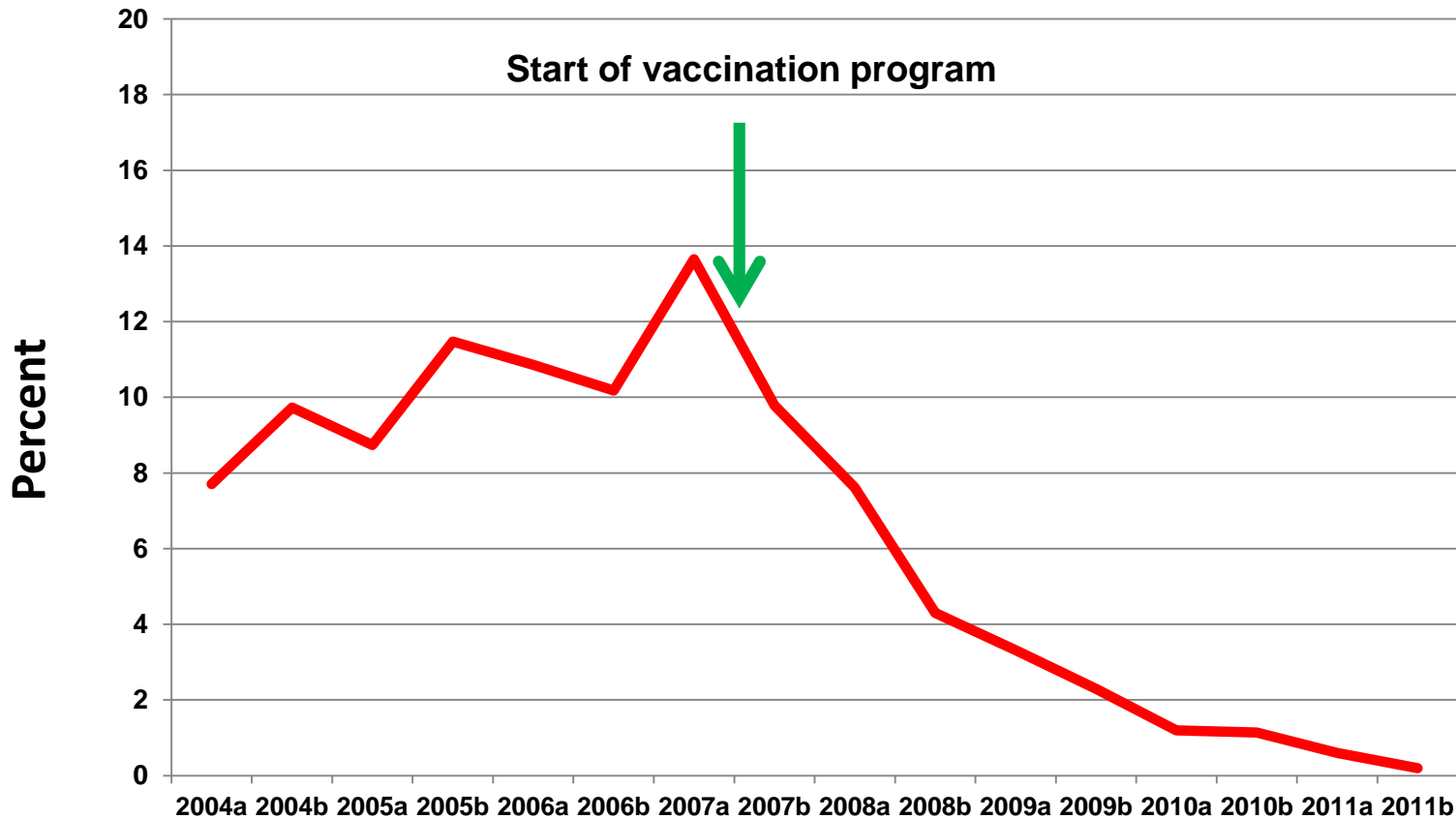
A 9-Valent HPV Vaccine against Infection and Intraepithelial Neoplasia in Women

E.A. Joura, A.R. Giuliano, O.-E. Iversen, C. Bouchard, C. Mao, J. Mehlsen, E.D. Moreira, Jr., Y. Ngan, L.K. Petersen, E. Lazcano-Ponce, P. Pitisuttithum, J.A. Restrepo, G. Stuart, L. Woelber, Y.C. Yang, J. Cuzick, S.M. Garland, W. Huh, S.K. Kjaer, O.M. Bautista, I.S.F. Chan, J. Chen, R. Gesser, E. Moeller, M. Ritter, S. Vuocolo, and A. Luxembourg, for the Broad Spectrum HPV Vaccine Study*



Markowitz L, et al. Pediatrics. 2016

Proportion of Australian Born Women <21 years with Genital Warts, 2004-2011



Infections: Preventable through Vaccination



- Extending the benefits of prevention vaccines to other infection and cancer endpoints (head and neck cancers)
- Extending the benefits of immunotherapeutic approaches to cancers caused by infection (anti-PD1, TIL therapy)

Thank you!