

Consequential Epidemiology: the Evolving Role of the Epidemiologist in Public Health

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EPICENTRO

ISS, Roma

The Role of Epidemiology in Public Health

- Public health relies on epidemiology as its method of inquiry
- Epidemiology provides the tools to measure public health outcomes
- Good public health decision-making should be driven by quality data

The Evolution of Epidemiology

- Prior to 1950s
 - Descriptive epidemiology
- 1950 - 1990s
 - Analytic epidemiology
- The future
 - “Consequential epidemiology”

--Foege, 1990

Definition of Significant and Consequential Epidemiology

JP Koplan and S Thacker, Am J. Epid. 2001

- Significant: refers to the analytical rigor of the public health approach and the validity of the results
- Consequential: reflects the practical application of the results, trying to make a difference in health outcomes

Significant and Consequential Epidemiology

- Significance and consequence meant to be complementary, not competing values
- Ideally, epidemiologic studies should ensure the presence of both
 - Best way of serving our public
 - Improves the likelihood of ongoing funding for public health efforts
- Sometimes lack of consequence results from failure to involve appropriate partners and effectively communicate our results

Significant and Consequential Epidemiology

- Role remains for studies that are “significant” but not “consequential”
- Question of striking balance and maximizing, where possible, the consequences of our studies

Sustainable Epidemiology

Gallo, 2002

- Primary objective of research institutes:
Improve the quality of epidemiologic information
 - Epidemiologic research
 - Field epidemiology
- Primary objective of public health services:
Improve the quality of public health decisions
- Sustainable epidemiology
 - Scientifically valid studies
 - Simple, easily communicated to politicians, public, and administrators

“Epidemiologic data is indispensable for prioritizing public health activities, defining intervention strategies, and evaluating them...It is our task to develop epidemiology that serves public health.”

D. Greco, 2001

Challenges of Consequential Epidemiology

- New tasks
- New endpoints
- New partners
- New audiences
- New communication strategies
- New evaluation methods

OK, Fido. It's
about time you
learned to fetch
the paper

Doesn't he
understand that us
old dogs can't learn
new tricks??

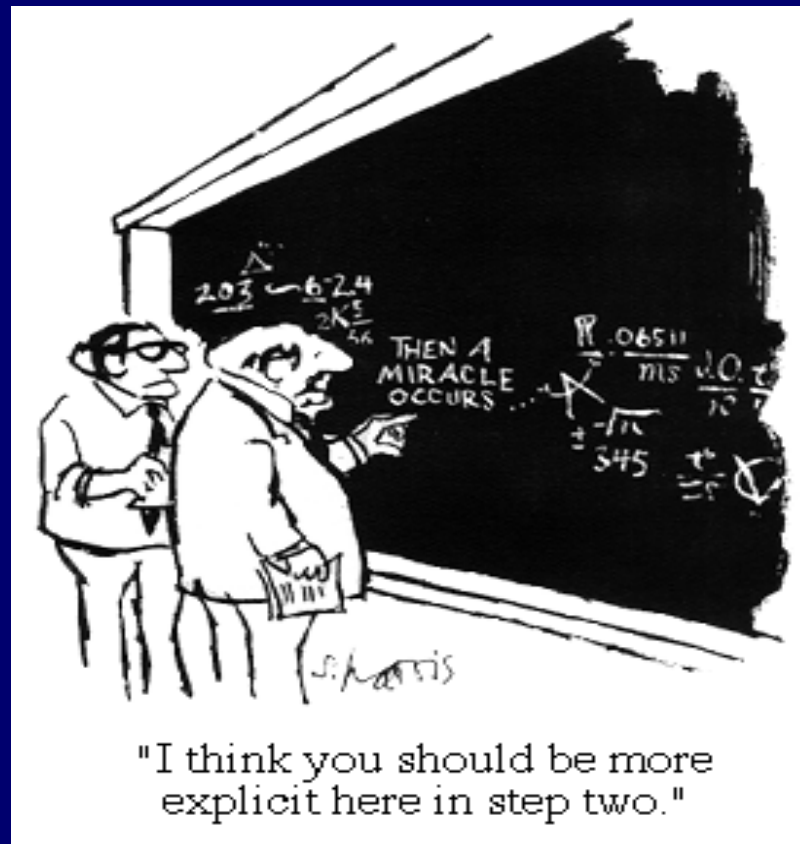


Tasks of the 20th C. Epidemiologist

- Describe and monitors the health status of the population
- Identify etiologic and risk factors
- Evaluate the effectiveness of intervention strategies (clinical trials)
- Disseminate results through the scientific literature and meeting presentations

Excellent epidemiology or surveillance alone rarely leads to improvements in health

Mark White, 2002



"I think you should be more explicit here in step two."

New tasks: the 21st C Epidemiologist

Takes responsibility for making sure the information gets to those who can affect change:

- Requires communicating, rather than disseminating information
- Often involves working with partners to plan and implement effective strategies
- May involve helping to identify human and financial resources to implement the strategies

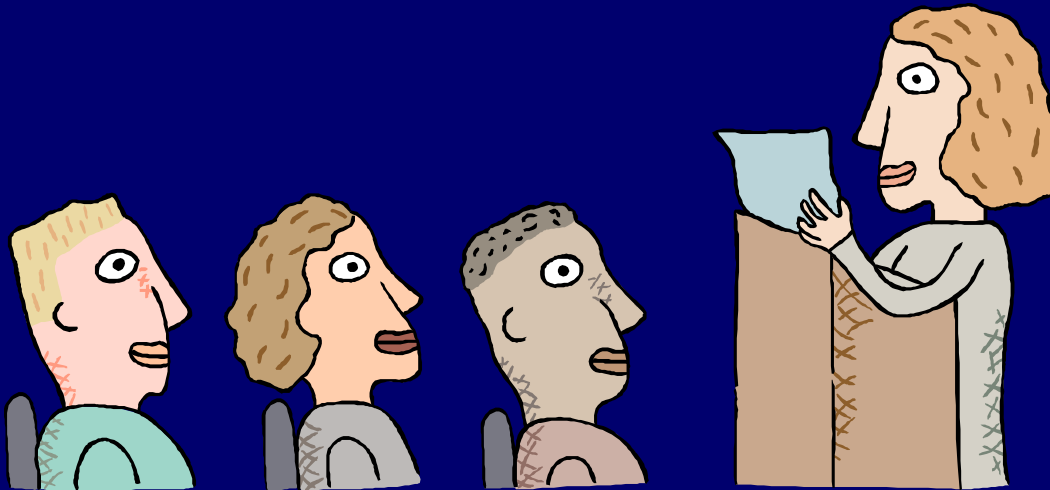
Evaluates population-level impact of the interventions conducted

New Tasks: Communication versus Dissemination of Information

- Communication: the process through which information and messages are packaged and conveyed from a sender to a recipient with the purpose of sharing meaning
- Differs from dissemination in that feedback is involved

Dissemination

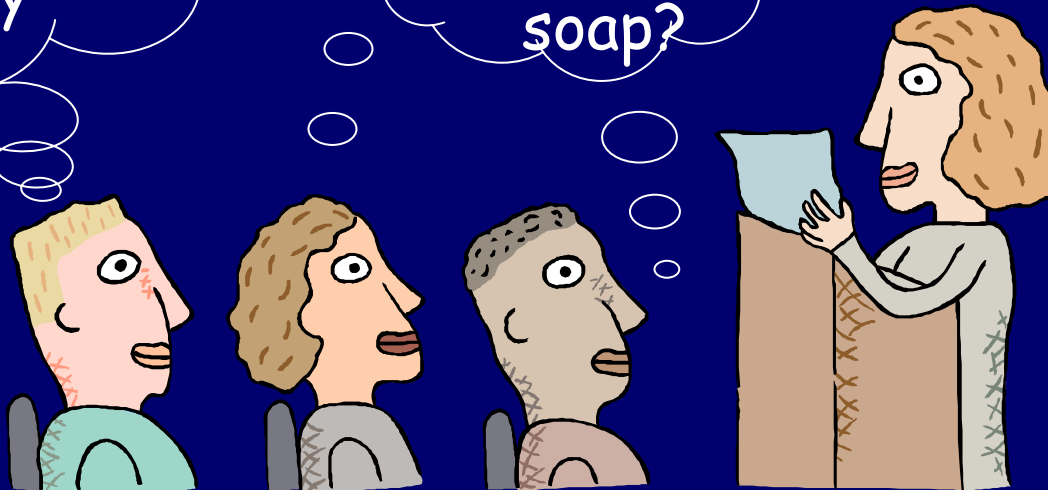
To prevent further outbreaks, everyone should wash their hands...



We don't have
running water in
most of our
rooms

What planet is
she living on?
Our nurses are too
busy

Who's going
to pay for the
soap?



Communication

I understand you had concerns about my suggestions

We don't want more epidemics but our nurses say they don't have time and that their hands get too dry if they wash them after every patient

We also don't have the money in our budget to install sinks in all the rooms



Another solution would be to use those new alcohol-based hand cleaners instead. A number of studies are showing that they are quite effective, nurses like them, and they aren't expensive

Hmm..that sounds feasible. We can definitely give it a try!



New Endpoints

Beyond publication/presentation to affecting change at system, community, and individual level:

- Systems: changes in policies, laws, structures, and organization
- Community: changes in norms, attitudes, beliefs, practices, and behaviors at community level
- Individual: changes in knowledge, attitudes, skills, and behaviors of at-risk individuals

New Partners

- Health agencies alone do not usually have the resources to deal with all problems
- May involve going outside the traditional health system
- An important role of public health is to organize external resources to meet health needs
- Early input from partners needed to create a sense of “ownership”

New Audiences

In addition to:

- Peers (important to ensure “significance”)
- Medical and public health practitioners

Audiences often need to include:

- Decision makers
- Media (“general public”)
- At-risk population
- Advocacy groups

Levels of Difficulty in Preparing Presentations

- Easiest is presenting to peers
 - Trained like us, talk like us, understand how the system works, understand politics and limitations
- Hardest is the public, especially people with low educational levels
 - Different needs, values, concerns, comprehension, language skills
 - Requires considerable skill to create presentation that is interesting, understandable, and persuasive

New Communication Strategies: Thinking in Terms of Messages

Scientists trained to record and convey *facts*, but what is needed for effective communication is *messages*

- Data = numbers, rates, etc
- Information = data that have been interpreted to provide meaning and context
- Message = tells people what they are supposed to think about the information or why they are supposed to care

New Communication Strategies: Thinking in Terms of Messages

- Fact: measles vaccine coverage in Campania is 70%, with coverage as low as 50% in some districts. A large epidemic has occurred.
- Information: Vaccine coverage levels are far below those needed to prevent further cases. Unless coverage is rapidly increased, further cases will occur.
- Message (public): If your child has not been vaccinated against measles, you should take him immediately to your ASL or pediatrician to have him vaccinated.

New Communications Strategies: Getting the Message Out

Familiar methods

- Publications
- Scientific conferences BUT....

Think target audience, not only impact factor

Less familiar methods

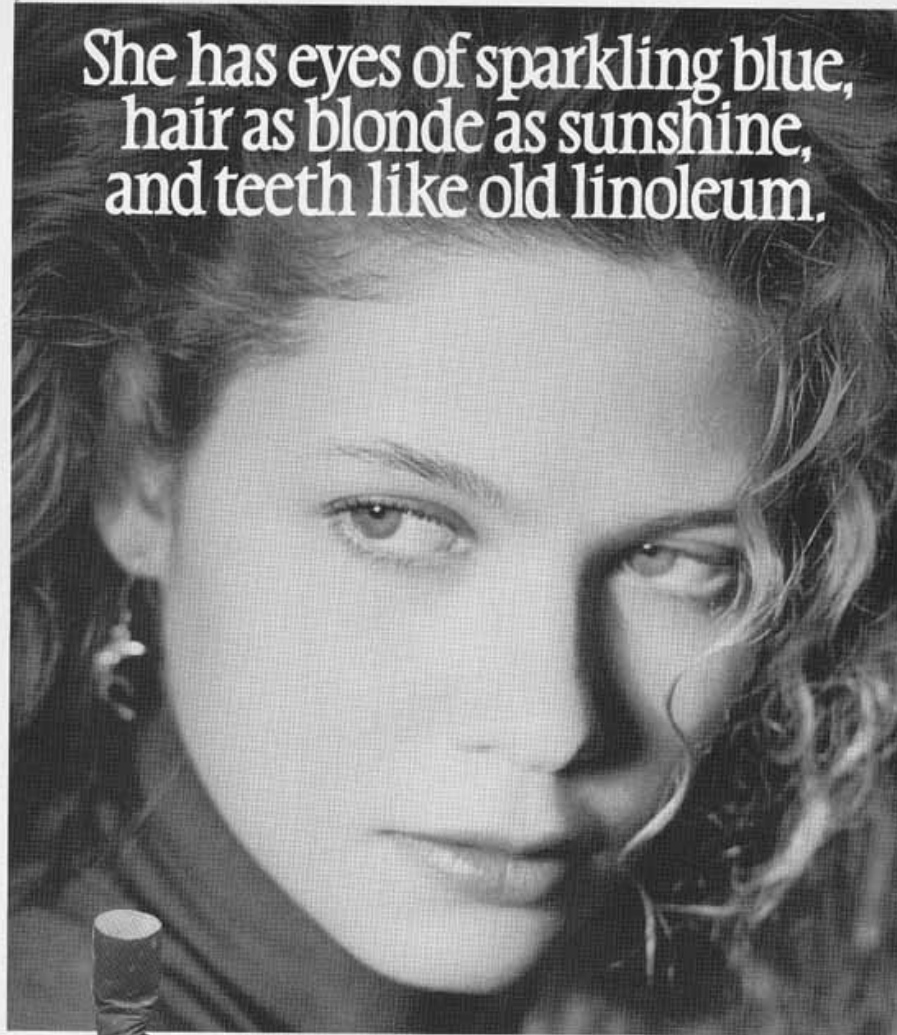
- Active use of media
- Materials and presentations for:
 - decision-makers
 - general and at-risk public
 - advocacy groups

New Communication Strategies: Matching Message to Audience

Before developing a presentation, you need to:

- Analyze your audience
- Understand what you are trying to accomplish with the presentation and why
- Understand the goals of the audience and how your problem can be fitted into this context
- Decide what it is you want specifically from the audience

She has eyes of sparkling blue,
hair as blonde as sunshine,
and teeth like old linoleum.



If you think smoking makes you look cool, think again. Cigarettes stain your teeth permanently. And there's nothing cool about that.



CDC

Impotent



California Department of Public Health

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WARNING: SMOKING CAUSES IMPOTENCE

Presentations Designed to INFORM: Scientific Audience

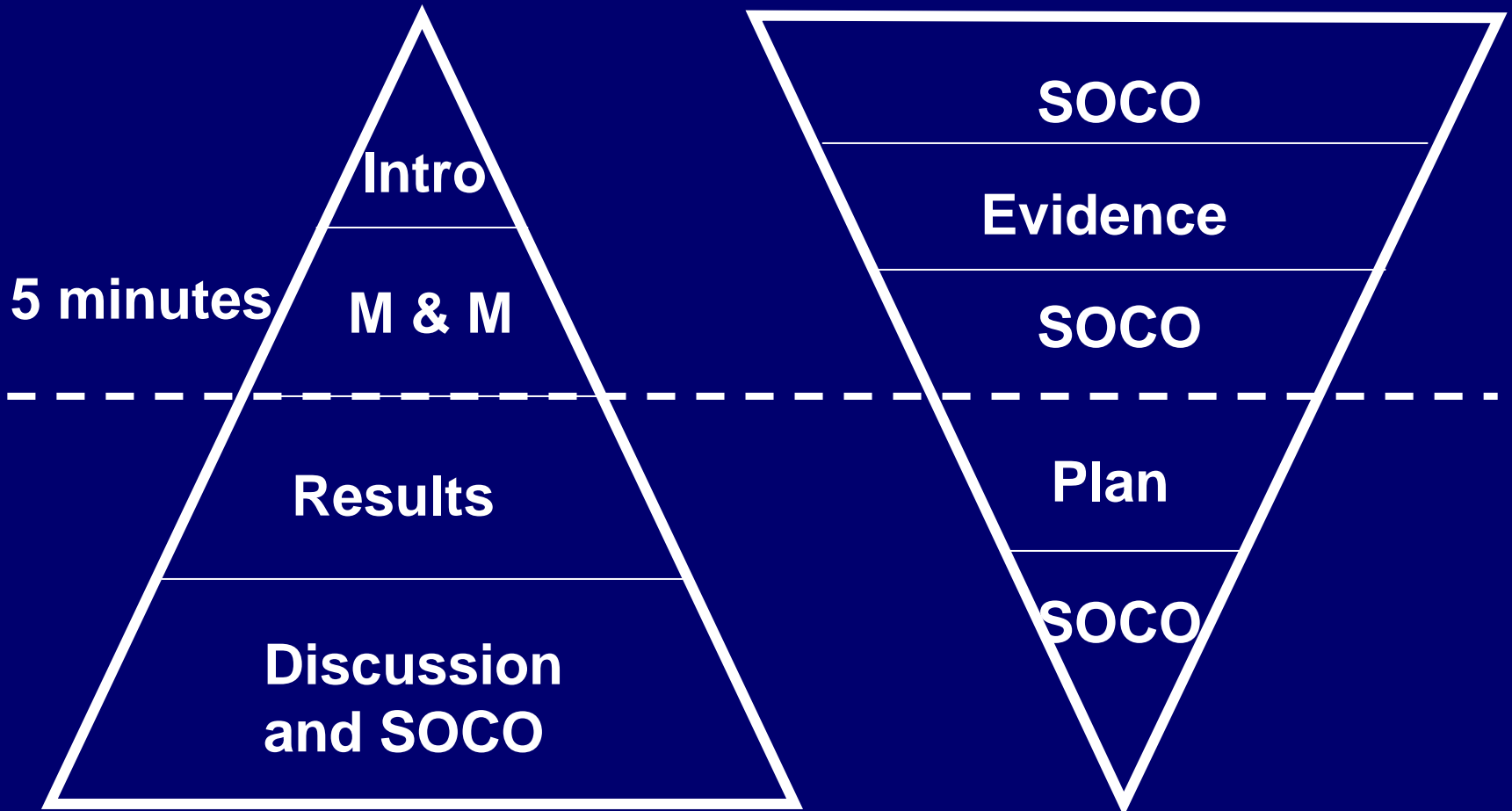
- Format used in scientific meetings
- Organized like a mystery story (leave the important finding for the end)
- Start with specific and proceed to general
 - What was the problem (intro)
 - How it was approached (materials and methods)
 - What was found (results)
 - What it means (discussion/SOCO)

Presentations designed to **PERSUADE: Decision-makers**

- Begin with attention-getter
- Tell the audience why it is worth their time to listen to you
- Make each of your points and support them (most important to least important)
- Tell them what you think needs to be done
- Hit them again with the main message

Inform

Persuade



New Ways of Monitoring of Success

Traditional epidemiology

- Success measured by peers
 - Impact factor
 - Prestigious conferences, oral vs poster, etc

Consequential epidemiology

- Success measured by changing health status of the population
 - Difficult to measure in the short term
 - Can measure short-term products, outputs

Our Goal:

Improve the
health of
the people

Questions We Should Be Asking Ourselves

- Who will be likely to use our data?
- How will it be used?
- Who do we need to involve to ensure its likely effectiveness?
- How can we most successfully convey our findings to those who need to know?



OK, OK

La

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