FORECASTING NANO LAW:
Legal Implications of Nanotechnology Within Occupational medicine

A Survey of the Emerging Law of Nanotechnology

Prof Ilise L Feitshans JD and ScM, Visiting Scientist Institute for Work and Health University of Lausanne Switzerland
ilise@prodigy.net
Prof Ilise L Feitshans JD and ScM
ilise@prodigy.net
+41 79 836 3965

Doctoral Candidate in International Relations "Forecasting Nano Law"

- Professor of Fundamentals of Health in International Relations
- Professor of Gender and Globalisation

- Geneva School of Diplomacy
- Château de Penthes
  Geneva, Switzerland,

- AND

Visiting Scientist
INSTITUTE FOR HEALTH AT WORK
UNIVERSITY of LAUSANNE
Lausanne Switzerland
Nanotechnology’s revolution for commerce will revolutionize public health
Goal

- To prepare occupational physicians and the allied professions in occupational medicine for nanotechnology and nanomedicine’s forthcoming changes to workplace health:
  - measuring exposure,
  - (work, cumulative medical history,
- Characterizing workplace health

Treatment in the workplace for rehabilitation of disabled persons
I. What does nanotechnology foretell for occupational medicine?

Nanotechnology will redefine:

- Industries
- Health --medicine-- public health
- The meaning of the terms
- « health » and « disability ».

As defined under law these terms will change because there will be new treatments, earlier detection, presymptomatic

- NOT COVERED BY EXISTING LAW
HOW BIG IS NANO?
HOW BIG IS NANO?

Predicted to be 3 trillion US dollars of US GDP by 2015
(At current rates for currency)
NANO

- MANIA
- GROCERY STORE CHAIN CALLED "MIGROS" IN Switzerland gives out free TOYS called nano—
- what does the public think?
- How does this common perception alter our society's view of nano risk?
nano-consumer products are here!

Mercedes CLS-class

Wilson Double Core tennis balls

Eddie Bauer Ruston Fit Nano-Care khakis

3M Adper Single Bond Plus dental adhesive

Smith & Nephew Acticoat 7 antimicrobial wound dressing

Kodak EasyShare LS633 camera

Wyeth Rapamune immuno-suppressant

Kodak EasyShare LS633 camera

Laufen Gallery washbasin with Wondergliss

Hummer H2

Samsung Nano SilverSeal Refrigerator

NanoOpto subwavelength polarizing beam splitter/combiner

Gibbs, 2006
Nanotechnology - The Challenge

- Does the nature of engineered nanostructured materials and devices present new safety and health risks?
- How can the benefits of nanotechnology be realized while proactively minimizing the potential risk?
Federal Office of Public Health FOPH
Federal Office for the Environment FOEN
Guidelines on the Precautionary Matrix for Synthetic Nanomaterials
Version 1.0

Berne 2008.
Download PDF
IMPORTANT UNKNOWN AND UNQUANTIFIED PUBLIC HEALTH RISKS OF CONCERN

1. Present state of the art of nanotechnology works with dangerous stuff

Is it wise or fair to extend existing regulations of toxic substances that are known to be harmful BELOW the existing safe level – the so called « threshold value »?
Physically confining materials at the nanoscale alters the behaviour (sic) of electrons within them, which in turn can change the way they conduct electricity and heat, and interact with electromagnetic radiation. Moreover, materials engineered at the nanoscale can enter into places that are inaccessible to larger materials,…

These behaviours (sic) also have potential consequences on the abilities of synthetic nanomaterials to cause harm in novel ways.
LEGAL BASIS AND JUSTIFICATION:

NIOSH RECOMMENDATIONS PREVENTING RISK FROM

CARBON NANOTUBES AND NANOFIBERS”

prepared in response to the question presented by NIOSH:

« Whether the hazard identification, risk estimation, and discussion of health effects for carbon nanotubes and nanofibers are a reasonable reflection of the current understanding of the evidence in the scientific literature »
As we have noted, history is replete with instances where such assumptions were shown to be flawed too late to avoid serious consequences. The second approach assumes that the state of the science is up to the job of detecting problems unambiguously and at an early enough stage to prevent widespread damage, which we have not found to be the case here.

The third view would deny citizens and consumers the real lifestyle and health benefits that technologies based on novel materials might provide. In any case, we know that science can never definitively prove that something is safe.
Nanomaterials offer numerous new opportunities for innovation but they can also pose new risks.

- In its Special Report “Precautionary strategies for managing nanomaterials” the German Advisory Council on the Environment (SRU) makes recommendations for a responsible and precautionary development of this new technology.

- The objective is to allow for innovation but also to identify and reduce risks at an early stage.
Organization for Economic Cooperation and Development

- Produces internationally agreed instruments, decisions and recommendations to promote rules of the game in areas where multilateral agreement is necessary for individual countries to make progress in a globalized economy (30 members, 70 observers).

- In November 2007 OECD Working Party on Manufactured Nanomaterials established a NIOSH-led project to raise awareness about and harmonize approaches for exposure measurement and mitigation for nanomaterials.
highly-paid EXPERTS
ALREADY AGREE -- DEFINING
NANO
IS IMPORTANT
Defining Nano

« Don’t Define NANO… 

“Andrew Maynard argues against defining engineered nanomaterials for regulatory purposes (Nature 475, 31; July 2011)…

MUST define NANO:::

- (August 29 2011, Herman Stamm wrote):
- But such a definition is urgently needed, especially for particulate nanomaterials… »
2 approaches

- Lists are great for expert meetings, need to revise the list periodically
- Make sure everything important is on the list
- Make sure outdated problems are off the list

- Criteria
- Flexible
- Can be interpreted to meet new needs
- Can include components that are not easily put into a list
WHAT QUESTIONS?

1. NANO definitions

What is nanotechnology?

What is a nanoparticle?

(ethically or under law, for the purposes of applying a community standard for action or care)

For the purposes of applying that standard in face of risk
II. ESTABLISHING REGULATIONS

WHAT LAW?

WHO NEEDS LAW?
LAW CAN CHANGE

Courts re-interpret old laws
Legislatures make new laws with the stroke of the legislative pen
EXAMPLE OF LEGISLATIVE CHANGE

IT WAS OK TO FIRE PEOPLE WHO ARE SICK

Taking the legislative pen in hand-

The next day it is ILLEGAL not to hire them!

- Americans With Disabilities Act (ADA), following the Individuals With Disabilities Education Act (IDEA), and a host of state and local human relations laws prohibiting discrimination

law now requires equal opportunity!
What text?

Who do you include in legal protections?

Where to draw the line to exclude so that one law does not swallow everything?

- DEFINING NANO
WHAT QUESTIONS?

- How
  - Does society strike the balance
  - Liability or immunity?
  - Stakeholders
  - Civil society and consumers?
WHAT QUESTIONS?

- 2. Should there be strict liability for using nanomaterials?

- To prevent harm to human health?

- Impact on global burden of disease
WHAT QUESTIONS?

- 3. Is worker health consistent with or competing with Environmental protection?
WHAT QUESTIONS?

4. What is the proper role of government?

- local
- national
- Or
- international

- Promoting and protecting R&D in nanobusiness
- Or Consumer Health and Environmental protection?
WHAT LAW?

WHO NEEDS LAW?
Health

is a

HUMAN RIGHT
Or
is it?
HUMAN RIGHTS ARE NOT FOR EVERYONE

- WHAT ABOUT PEOPLE WHO ARE NOT HEALTHY WHEN THEY ARE BORN
- OR NOT WEALTHY WHEN THEY ARE BORN?
- Or are not from the proper race class or ethnicity?
Nanomedicine

social transformations will re-define key social constructs
"health" and "disability".

- transition from an individual, medical perspective to a structural, social perspective. Shift from a "medical model" to a "social model" in which people are viewed as being disabled by society rather than by their bodies.
POSSIBLE IMPACTS OF NANOMEDICINE

- Cancer
- Alzheimers
- Parkinsons
- Bone regeneration

KEY CHRONIC ILLNESSES will change:

- Aging workforce
  - Disabled populations who are integrated into the workforce
  - Aging workers who have rehabilitation and return to work

CO-MORBIDITY
REDEFINITION OF HEALTH
Areas to watch:
Public health funding for people using nanomedicines
Environmental
Cumulative Impact on human health
Food and Drug (medical devices)
Occupational health
Informed Consent regarding new technologies
people in ill-health!!!
Conclusion

Nanotechnology’s revolution for commerce will revolutionize public health
Conclusions

1. Laws can foster and incubate NEW industries while monitoring the situation through funding and incentive systems, to control emerging risks.

2. Be clear in your goals about the scope and definitions in new laws.

3. Think through existing drafts.

4. Forethought beats afterthought.
THANK YOU!!!
Merci grazie gracias
toda riba spasiba
efkadisto Motshakkeram

Ilise L. Feitshans  JD & ScM

BRINGING HEALTH TO WORK
- DESIGNING AN EFFECTIVE
  OSHA COMPLIANCE PROGRAM
- IST University of Lausanne
  Switzerland   41 79 836 3965
- USA 917 239 9960
- ilise@prodigy.net