

# FOOD SAFETY VERSUS NUTRITION – ARE THE PRIORITIES RIGHT?

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WE HAVE TWO BIG  
BUZZWORDS IN FOOD  
SCIENCE & TECHNOLOGY

FOOD SAFETY  
&  
NUTRITION

THESE TWO AREAS TAKE  
UP HUGE AMOUNTS OF  
TIME AND RESOURCES IN  
BOTH ACADEMIA AND THE  
COMMERCIAL WORLD

ARE WE GETTING THE MIX  
RIGHT???

# WHY ARE FOOD SAFETY AND NUTRITION SUCH DOMINANT THEMES?

- As food scientists and technologists we have an inherent professional duty to ensure all food is safe – this is an ongoing commitment to public health
- Food safety is taken for granted by the end user
- In more recent years, the focus has moved to the role of food in public health and its role in maintaining the health of individuals i.e. NOT just a means of assuaging hunger and providing essential sustenance

IN OTHER WORDS – FOOD SAFETY AND NUTRITION ARE THE  
'PUBLIC HEALTH' SIDE OF FOOD SCIENCE AND TECHNOLOGY

# SO - HOW DO WE MEASURE THEIR IMPORTANCE FOR THE PURPOSES OF RESOURCE ALLOCATION?

- Quantitative measurement is not easy but maybe look at number of deaths caused by deficiencies in each??
- For food safety, look at incidence & number of deaths due to food poisoning (other food safety deaths difficult to quantify)
- For nutrition, take CONSERVATIVE estimate of proportion of deaths due to diet related NCD's that could be attributed to poor nutrition

N.B. number of deaths due to malnutrition excluded but would add a huge number to the total

# WE HAVE TO MAKE SOME SWEEPING ASSUMPTIONS - WHICH IS NOT VERY SCIENTIFIC!

- However, if the assumptions are sufficiently conservative, they should have some credibility and provide a debating point!
- Let's also remember that:
  - Food safety failures cause individual short term problems for individual products
  - Nutritional issues are ongoing for any product of poor nutritional quality, irrespective of its safety and cannot be remedied by means of quality systems
- We are thus comparing
  - Individual, often high profile, food safety cases with short term impact
  - Ongoing 'slow death' nutrition cases with a lower profile

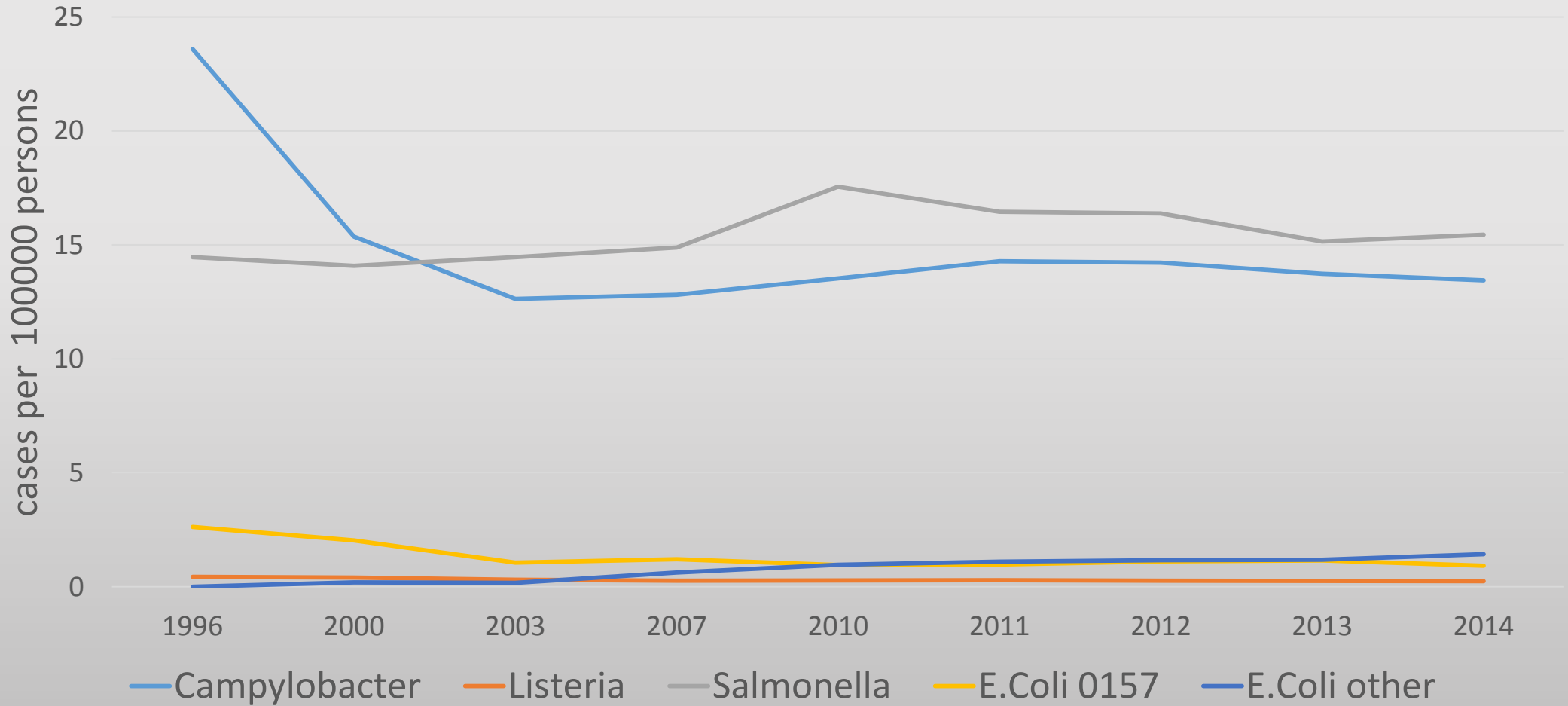


# WHAT ARE THE NEGATIVE EFFECTS OF FOOD ON PUBLIC HEALTH?

Potential information sources are:

- Deaths caused by food safety issues
- Deaths caused by dietary related medical conditions
- Product recall data

# INCIDENCE OF REPORTED FOOD POISONING CASES IN USA 1996-2014 (SOURCE - CDC)





# FATALITY RATES FOR 2014 (CDC)

PATHOGEN	Total 2014		
	Number of deaths	Total number of cases	Case Fatality Ratio
Total	<b>71</b>	<b>19,542</b>	<b>0.36</b>
Campylobacter	11	6,486	0.17
Listeria†	18	118	15.25
Salmonella	30	7,452	0.40
Shigella	2	2,801	0.07
STEC§ O157	3	445	0.67
STEC non-O157	0	690	0.00
Vibrio	2	216	0.93
Yersinia	1	133	0.75
Cryptosporidium	4	1,175	0.34
Cyclospora	0	26	0.00

IN SUMMARY – WE HAVE A TOTAL OF 71 REPORTED DEATHS FROM FOOD POISONING IN THE USA IN 2014 IN A POPULATION OF 318.9 MILLION PEOPLE (US CENSUS BUREAU)

# DEATH RATES PER 100000 PERSONS FROM DIET RELATED MEDICAL CONDITONS IN THE USA 1999-2013 (CDC)

CAUSE OF DEATH	YEAR				
	1999	2003	2007	2010	2013
Heart disease	259.9	236.1	204.5	186.2	193.3
Cancer	197.0	192.0	204.5	186.2	185.0
Cerebrovascular disease	60.0	54.4	45.1	41.9	40.8
Diabetes	24.5	25.6	23.7	22.4	23.9
Hypertension related conditions	6.1	7.6	8.0	8.6	9.7

# NUMBER OF DEATHS FROM DIET-RELATED MEDICAL CONDITIONS FOR USA IN 2013 (CDC)

CAUSE OF DEATH	NUMBER OF DEATHS
Heart disease	611105
Cancer	584881
Cerebrovascular disease	128978
Diabetes	75578
Hypertension related conditions	30770
TOTAL	1431312

WE CERTAINLY CANNOT ATTRIBUTE ALL THESE DEATHS TO DIET SO...

LET'S ASSUME 5% OF THEM CAN BE ATTRIBUTED TO DIET

CAUSE OF DEATH	NUMBER OF DEATHS
Heart disease	30555
Cancer	29244
Cerebrovascular disease	6449
Diabetes	3779
Hypertension related conditions	1539
TOTAL	71566

# WHAT DO WE FIND IN SUMMARY?

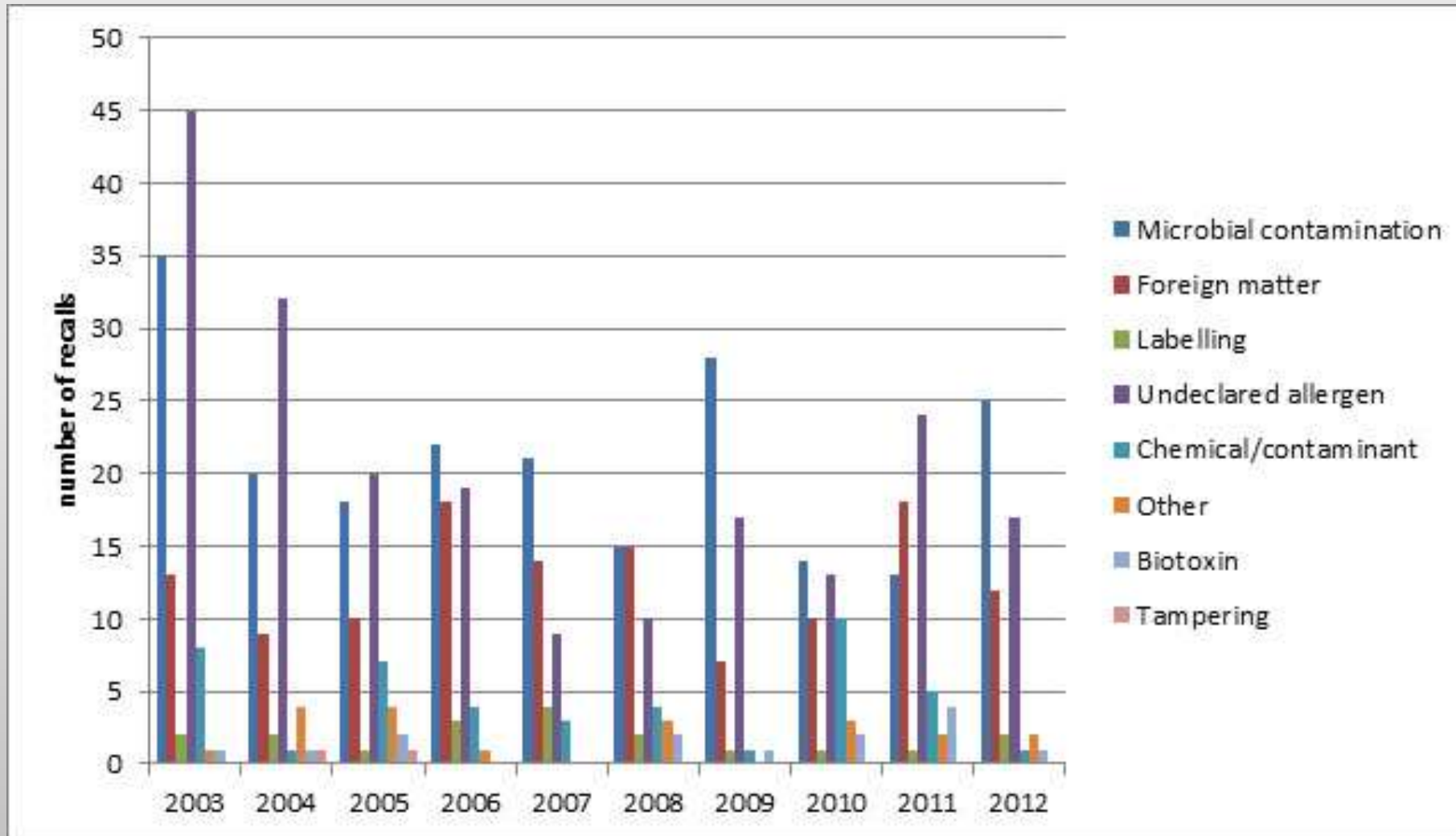
- 71 reported deaths from food poisoning in the USA in 2014
- 71566 deaths for which dietary practices are probably a contributory factor in the USA in 2013

## SO EVEN IF:

- Food poisoning data is vastly under-reported
- My 5% assumption is too high due to multi-factorial nature of NCDs...

**BIT OF AN INBALANCE, ISN'T IT!!!!!!**

# WHAT ABOUT PRODUCT RECALL DATA?

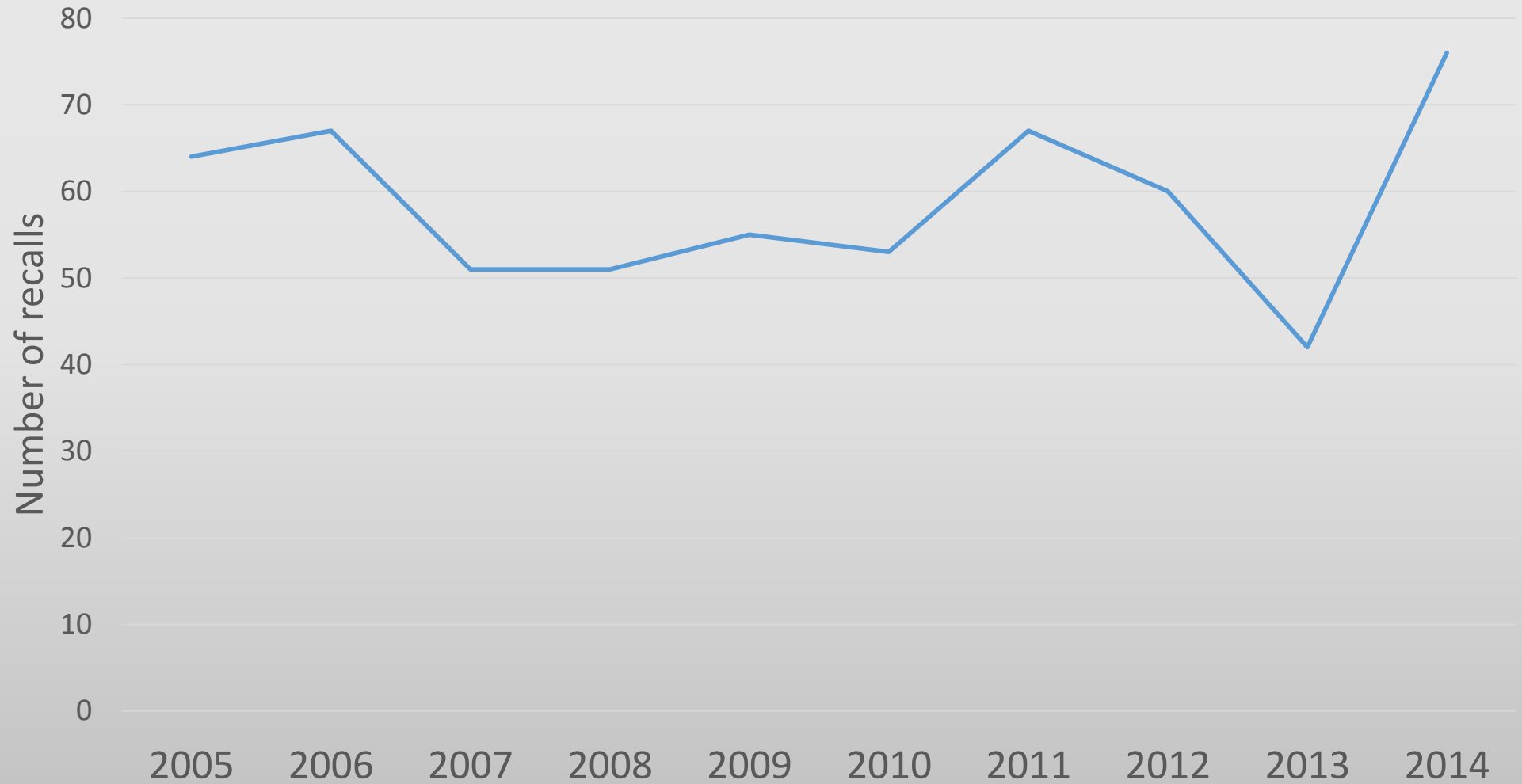


NUMBER OF USA  
FOOD PRODUCT  
RECALLS 2003- 2012

# CAUSES OF FOOD PRODUCT RECALLS IN AUSTRALIA / NEW ZEALAND 2005-2014

Recall reason	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Microbial contamination	18	22	21	15	28	14	13	25	12	26	194
Foreign matter	10	18	14	15	7	10	18	12	7	14	125
Labelling	1	3	4	2	1	1	1	2	2	0	17
Undeclared allergen	20	19	9	10	17	13	24	17	16	27	172
Chemical/contaminant	7	4	3	4	1	10	5	1	0	1	36
Biotoxin	2	0	0	2	1	2	4	1	2	3	17
Tampering	1	0	0	0	0	0	0	0	0	0	1
Other	5	1	0	3	0	3	2	2	3	5	24
<b>Total</b>	<b>64</b>	<b>67</b>	<b>51</b>	<b>51</b>	<b>55</b>	<b>53</b>	<b>67</b>	<b>60</b>	<b>42</b>	<b>76</b>	<b>586</b>

## Product Recalls Australia / New Zealand 2005-2014





# EITHER...

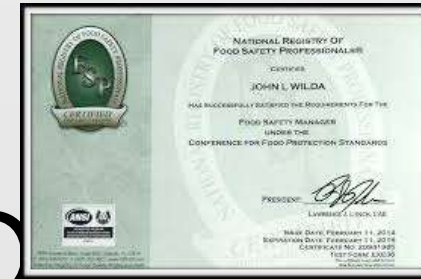
- Things are not improving or...
- Greater food safety awareness is causing more recalls

The food safety industry will tell you it is the latter...

I think it is a bit of both!

# I AM THEREFORE SUGGESTING THAT:

- Poor nutritional quality is a far more significant threat to public health than food safety
- Data from individual countries may not be exactly similar throughout the world but in-balance between mortality figures in particular is so huge that it can reasonably be extrapolated to a significant extent on a global basis
- Inclusion of deaths from under-nutrition would push the scale even further in favour of greater resources for nutritional issues
- We need to review our resource allocation!



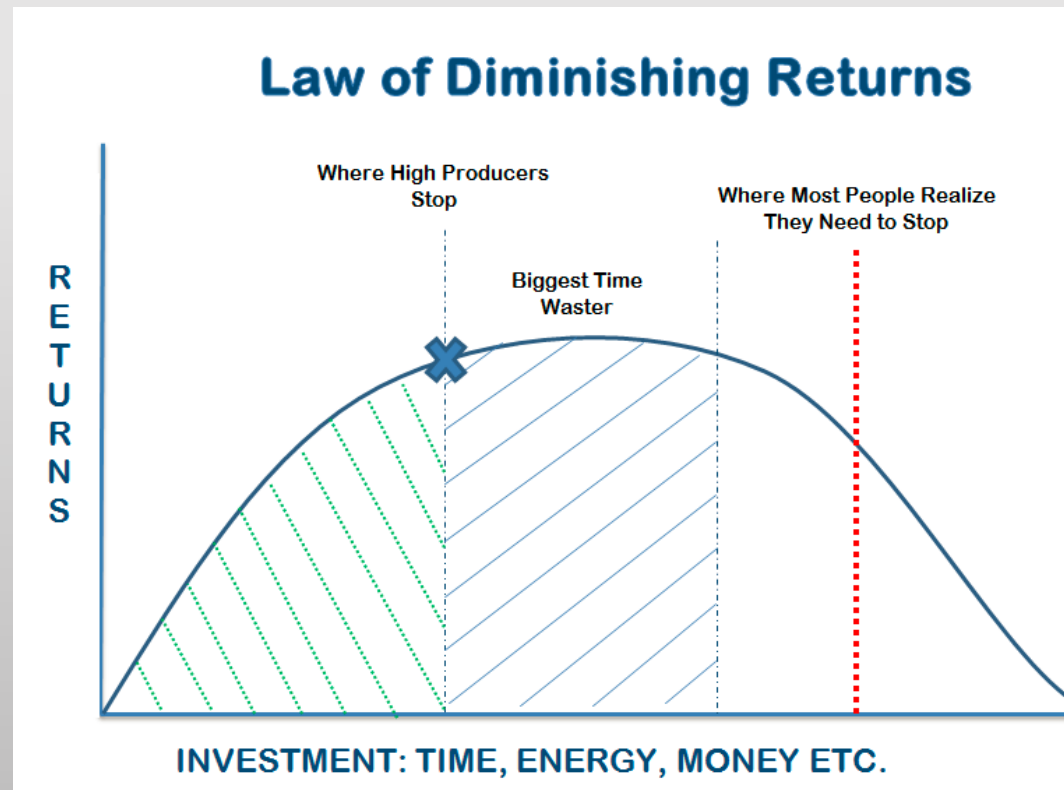
# THE FOOD SAFETY EXPLOSION

- In the last 20 years, food safety has become an industry in its own right
- Started with the best of intentions but:
  - Has the safety of our food increased in line with the huge resources put into it?
  - Has it turned into a self-propagating paper & bureaucracy generating monster and a meal ticket for those involved?



# IS OUR FOOD SAFER THAN 20 YEARS AGO?

- USA food poisoning statistics indicate little or no improvement overall
- Product recall statistics indicate little or no improvement overall
- Even allowing for under-reporting, it is clear that we getting to a plateau in the law of diminishing returns



# IN THE MEANTIME, THE RESOURCES REQUIRED ARE HUGE

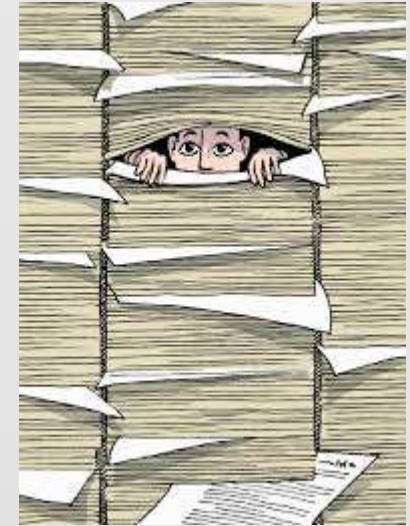
- One large SA food company with 17 factories spends:
  - 52 days per year on certification audits
  - 17 days per year on separate retailer audits
  - Number of days of management resource not quantified but is substantial
  - Comment: 'We have downscaled a lot on audits by moving to an approved GFSI audit otherwise it gets out of hand'
- Other companies are audited by 5 or more different certification bodies every year!

# FOR THE SMALLER MANUFACTURER IT IS EVEN WORSE:

- A small and highly ethical food manufacturer in northern Johannesburg is incurring around R40000 per month in additional overheads to manage food safety documentation and system maintenance issues.
- The manufacturer has a low-risk product range and has NEVER had any serious food safety related complaints either before or after implementing a certification scheme.

Comment from the owner:

‘About half of my expenditure makes reasonable sense and I believe is the “right thing to do”, the rest of it is a complete waste of money and I have to do it just to stay in business. I simply pass the cost on to my customers’



# SOME OF THE PRACTICAL CONCERNS

- Huge volumes of documentation which nobody except auditors ever reads and which adds no value
- Inexperienced and arrogant auditors with no knowledge of the manufacturing processes involved or the science behind them
- ‘Box tickers’ conducting punitive auditing without any constructive assistance
- Contradictory results from different auditors
- Standards applicable to higher risk products being forced on to low risk products, particularly for microbiological issues
- Retailers and multi-nationals with over-the-top requirements for safety, particularly on low-risk products





# AND TO REALLY STIR THE POT....

How many of you have been to factories with a fancy certificate in reception...



And found totally unacceptable standards inside the factory!





# THERE ARE HOWEVER SOME GOOD 'BIGGER PICTURE' OUTCOMES

- Rationalisation of audit requirements starting to occur
- Traceability systems becoming highly sophisticated –  
i.e. assumption that things will continue to go wrong  
and we must be prepared for this
- Allergen control much improved but could still be  
better

# AND YET THE BANDWAGON ROLLS ON...

In June alone, I received 14 notices of food safety training courses in my emails!

Some of the topics:

- Implementing CAPA
- HACCP training (6 modules!)
- Food Safety Modernisation Act
- Knowledge Forum on FSSC 22000
- FSMS Lead Auditor Course
- Are you conforming to GMP?
- Certified Manager of Quality / Organisational Excellence
- Risk Assessment Training
- Are you managing your food production environment effectively?
- How can FSSC22000 protect your brand and safeguard public health?

# ONE HAS TO ASK...

- Has this simply become a money-making circus for training providers?
- Is there anyone out there who has NOT been on a food safety training course?
- Is our food really any safer as a result?



# AT SCIENTIFIC LEVEL:



- Vast amounts of resource poured into duplication of safety & toxicological evaluations by bodies such as EFSA
- Rational risk assessment data overruled by political and / or activist pressure resulting in duplication and unnecessary expense e.g.
  - Aspartame safety has been reviewed at least 3 times by EFSA and results have consistently been positive
  - GMO safety evaluation has become a vast politically driven industry in its own right with total resource overkill
- Arguably insufficient resource provided for genuine concerns such as emerging pathogens and microbiological contamination from irrigation

# MEANWHILE, BACK AT THE FOOD COMPANIES...

DEATHS FROM FROM DIET RELATED NCDs  
PROBABLY OUTNUMBER DEATHS FROM  
FOOD POISONING BY A FACTOR OF 100!!!!

# WE HAVE TO DO SOMETHING ABOUT NUTRITIONAL QUALITY

Grossly unfair to lay all the blame for food related NCDs on food manufacturers but...

- We have an obligation to do something for the public good
- We have to help our consumers, no matter how many of their problems are self-inflicted and / or the result of lousy education
- We have to respond to the regulatory climate, no matter how unfair we may think it is

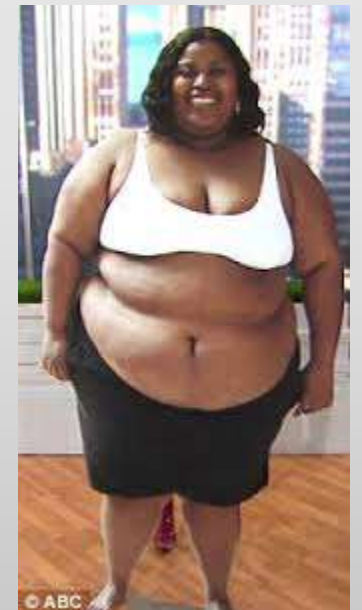


# THE MORAL OBLIGATION

29% of men & 56% of women in South Africa are overweight or obese

MORTALITY STATISTICS FOR DIET RELATED MEDICAL CONDITIONS IN SA 2013  
(Statistics SA)

CAUSE OF DEATH	NUMBER OF DEATHS	% OF TOTAL DEATHS
Cancer	38034	8.3
Endocrine, nutritional and metabolic diseases	28974	6.3
Diseases of the circulatory system	76468	16.7
Diseases of the digestive system	11914	2.6
TOTAL	155390	33.9



LIKE IT OR NOT, WE HAVE TO DO SOMETHING



# THE REGULATORY OUTLOOK

- The food industry is a convenient scapegoat for irresponsible consumer behaviour & lack of education
- However the industry is not blameless:
  - Aggressive marketing of foods with poor nutritional quality
  - Volume driven bonus schemes drive short term thinking approach
  - Lack of understanding and willingness by senior management to address nutritional issues as part of strategy
- R429 proposals contain numerous components aimed at limiting consumption of foods with poor nutrient profiles
- Potential sugar tax???





EXTRACTS FROM PRESENTATION ON  
NATIONAL OBESITY STRATEGY  
GIVEN BY GAIL ANDREWS (DoH CHIEF  
OPERATIONS OFFICER)  
TO CGCSA ON SEPTEMBER 2ND



OBJECTIVE	KEY ACTIVITIES/ ACTIONS	RESPONSIBILITY
<b>2.1. Promote the development and implementation of relevant legislative framework</b>	Influence fiscal policies related to sugar sweetened beverages	National Department of Health, Treasury, DPME, academics
<b>2.2 Ensure that food and beverage products sold are aligned with optimal national and international nutritional standards</b>	Develop norms and standards on sugar and fat content in ultra processed foods to guide product reformulation	National Department of Health, DTI, Food and Beverage Industry(CGCSA)
	Ensure restaurants display nutrient content of menu items	Food and Beverage Industry (CGCSA, CHOW)
	Ensure Quick Service Restaurants include healthy meal options on their menus at competitive prices	
	Engage with retailers to reduce exposure to unhealthy foods at point-of-purchase.	

OBJECTIVE	KEY ACTIVITIES/ ACTIONS	RESPONSIBILITY
<b>2.3 Ensure responsible and ethical advertising and marketing of food by the food industry.</b>	Ensure that a code and pledge of advertising are developed and adhered to.	Food and Beverage Industry(CGCSA) Media, Advertising Standard Authority of SA.
<b>2.4 Implement user friendly food labeling education tool</b>	Investigate, test and establish an appropriate educational tool for front of pack labels and meals in restaurants considering low literacy populations	Food and Beverage Industry CHOW NDOH Academia
<b>2.5 Increase access and availability of vegetables and fruits</b>	Expand household, local and community food gardens, increase access of vegetables in communities	DAFF, Municipality markets, RDLR, SALGA, COGTA, Public works (EPWP),

OBJECTIVE	KEY ACTIVITIES/ ACTIONS	RESPONSIBILITY
<b>2.6 Promote healthy eating in different settings</b>	Strengthen and ensure nutrition education component in the school curriculum is in line with national recommendations	Department of Health, Department of Education, School boards, Educators
	Improve teachers nutrition knowledge	
	Review and implement nutritional guidelines for all food and beverages sold or provided in schools ( including foods sold by vendors around the school premises)	
	Incorporate healthy eating practices as part of obesity prevention and management in Employee wellness programmes	DPISA, Department of Health, Private sector, Managers at health care facilities
	Develop a National guide for Healthy meal provisioning in the workplace	
	Develop dietary guidelines for prevention and control of obesity	
	Conduct orientation sessions on dietary guidelines for obesity,	

# POTENTIAL INDUSTRY RESPONSE

- CGCSA Healthy Food Options initiative
- Children's advertising code
- Nutritional content audits
- NPD programs aimed at improving nutritional content
- Re-allocation of marketing resources to amend product portfolio composition
- Remuneration schemes based on improvements in nutritional content



ONLY ONCE INDUSTRY CAN DEMONSTRATE SIGNIFICANT COMMITMENT TO NUTRITIONAL QUALITY IMPROVEMENT WILL IT BE POSSIBLE TO PUSH BACK AGAINST UNREALISTIC REGULATORY PROPOSALS

# I BELIEVE THAT:

- Companies with established food safety programs are in a position to put them into maintenance mode without any deterioration in safety levels
- We have enough pre-emptive measures in place and don't need yet more systems, paperwork and repetitive expensive training courses
- Need to retain a capacity to address unexpected issues as and when they occur as things will still go wrong occasionally whether we like it or not!
- We need a re-allocation of manpower & financial resources from safety issues to nutritional issues



# FROM A SCIENTIFIC PERSPECTIVE WE NEED TO:

- Push back against ‘repetitive toxicology’ issues driven by political lobbying rather than credible science
- Strengthen risk assessment capabilities and use them as the main tool for establishing resource priorities
- Ensure mechanisms are in place to address emerging issues as and when they appear (which they will!)
- Look at those risk areas where issues have been identified and develop core knowledge and capacity to manage them
- Address the management of these risk areas at operational level within the context of EXISTING control and monitoring systems



# WE ALSO NEED TO:



- Put more research resources into nutritionally driven areas such as:
  - Novel ingredients aimed at reducing overall kJ intake
  - Satiety issues
  - Behavioural issues relating to food consumption
  - Establishing the actual effect on public health parameters of individual nutrition driven regulatory and educational initiatives
- Push back against any move to replace nutrition driven regulatory initiatives that don't work with even more drastic measures if it is clear that we are dealing with behavioural issues
- Put more commercial resources into nutrition education and put major pressure on government to do the same





# THIS IS NOT GOING TO HAPPEN OVERNIGHT AS:

- Food safety issues currently have a higher profile than nutritional issues within corporate hierarchies
- Nutritional issues will impact on marketing strategies, product portfolios and financial performance whereas food safety issues are largely managed internally
- The food safety industry will fight to retain its position – vested interest
- Priorities will only change significantly when commercial viability of companies starts to be affected by regulatory pressure or bad PR due to lobbying groups or media coverage

# SO WE NEED TO RE-PRIORITISE

- MUST have greater emphasis on nutritional issues
- Where will the money come from??
- I say – less resource expenditure on over-the-top food safety requirements
- If this does not happen, then we just need to find extra money

THE FOOD INDUSTRY HAS MUCH MORE TO LOSE  
FROM NUTRITIONAL ISSUES IN THE LONGER TERM  
THAN IT DOES FROM ISOLATED FOOD SAFETY ISSUES,  
NO MATTER HOW MUCH SHORT TERM HARM  
THESE MAY CAUSE!

IT IS ALL ABOUT BEING  
PRE-EMPTIVE!  
THANK YOU AND  
PLEASE DON'T LYNCH  
ME!

