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Challenges in food hygiene and safety-comparing Lincolnshire and Ashanti Region school canteens

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Importance of school meals

- ▶ Governments and stake holders attach much importance to the provision of school meals for children because it
 - ▶ promotes growth and good health
 - ▶ and encourages continued education especially in developing countries (Afoakwa, 2008, WHO, 2002)
- ▶ These are however challenged with increasing foodborne infections and poisoning cases from schools.



Foodborne diseases and effect in UK and Ghana



Statistics	UK	Ghana
Total population	64,100,000 (Office of National Statistics UK, 2013)	25,000,000 (Ghana Statistical Service, 2010)
Food poisoning incidence rate	>500,000 cases per year from known pathogens (FSA 2014)	625,000* people annually (MoFA/WorldBank, 2007)
Hospitalisation	20,000 people receive treatment (FSA 2011)	297,104 people hospitalised annually (Food and Drugs Authority, 2008)
	4%	47.5%
Death rate due to food related illnesses	500 deaths annually (FSA 2011) (0.1%)	90,692 deaths annually (Food and Drugs Authority, 2008) (14%)
Cost	1.5 billion GBPS (FSA 2011)	69 million US \$ (MoFA/World Bank, 2007)
Life expectancy	81 years	60.95 years

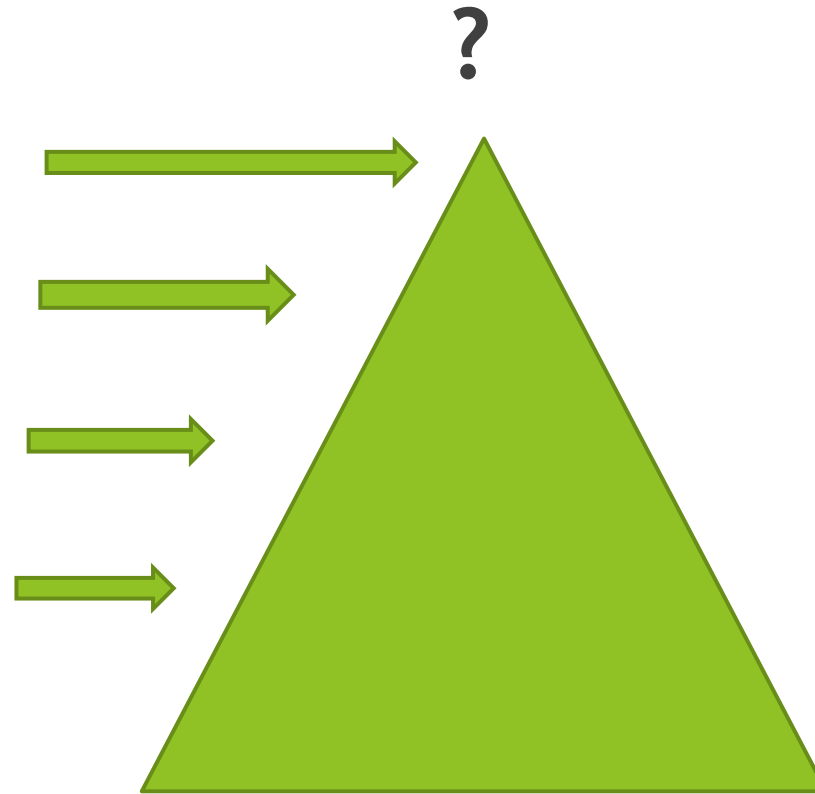
Cases of food poisoning from schools in Ghana (2007-2014)



Media	Case/Report	School
GNA 2014	20 students hospitalised from suspected food poisoning	Awudome SHS in Ho- Volta Region
2013	40 SHS students rushed to hospital over suspected food poisoning after evening meal	Twifo Praso SHS – Central Region
Citi FM 2013	Over 40 students hospitalised over food Poisoning.	Adonten SHS in Eastern Region
Joy News 2010	Over 100 girls hospitalised from food poisoning after eating in dinning hall	Archbishop Porter Girls – Western Region
2009	Pupils reject insect infested meals supplied in school feeding programme	Atwima Nwabiagya- Ashanti Region
Ministry of Health 2007	1, 348 children suffered food poisoning among school food served by contracted caterers	Ghana

Factors influencing good food safety and hygiene management decisions and practices

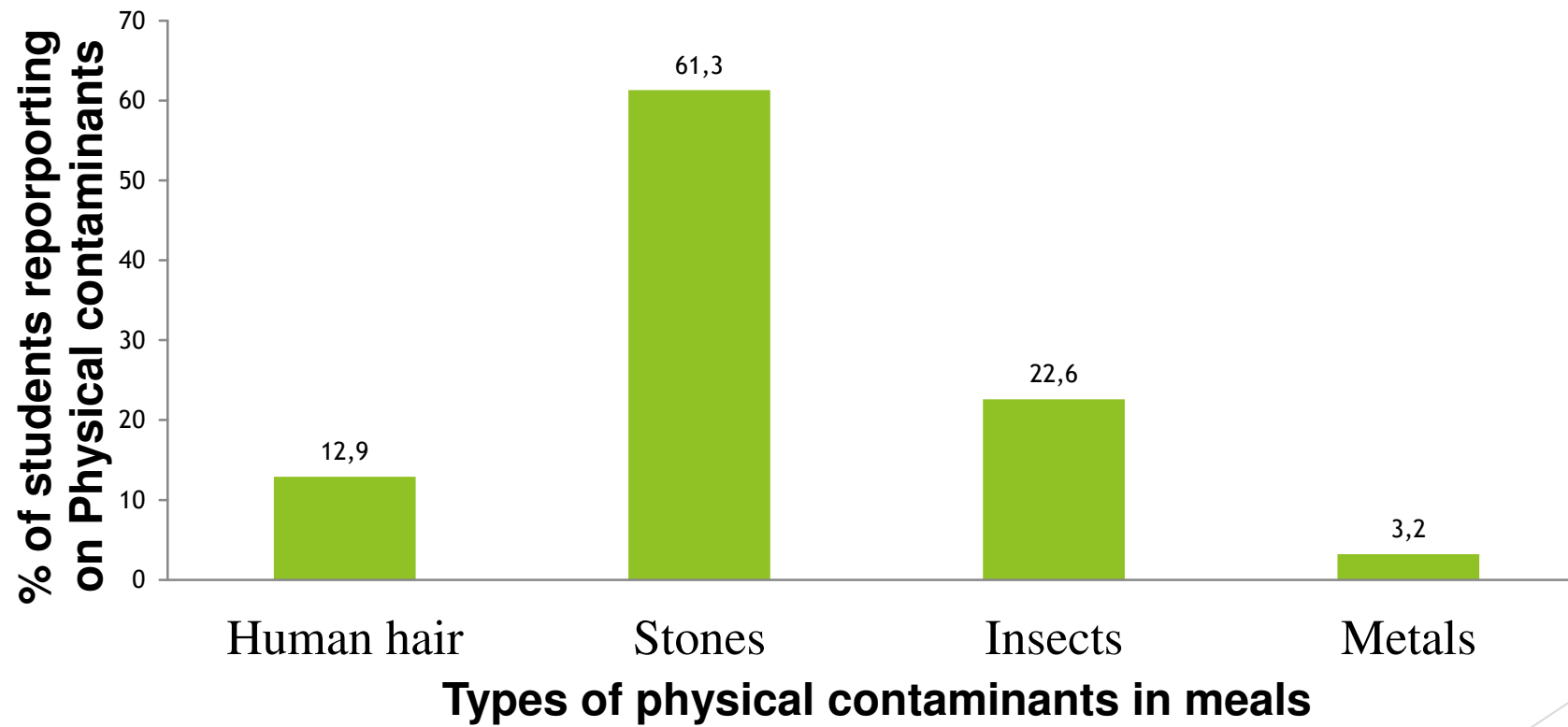
- ▶ Commitment/Self motivation
- ▶ Education and training
- ▶ Available resources
- ▶ External pressure (Legislation and consumers)
- ▶ (WHO, 2002, Panisello and Quantick, 2001, Taylor, 2001)
- ▶ Others- size and type of business competition in the market and economy



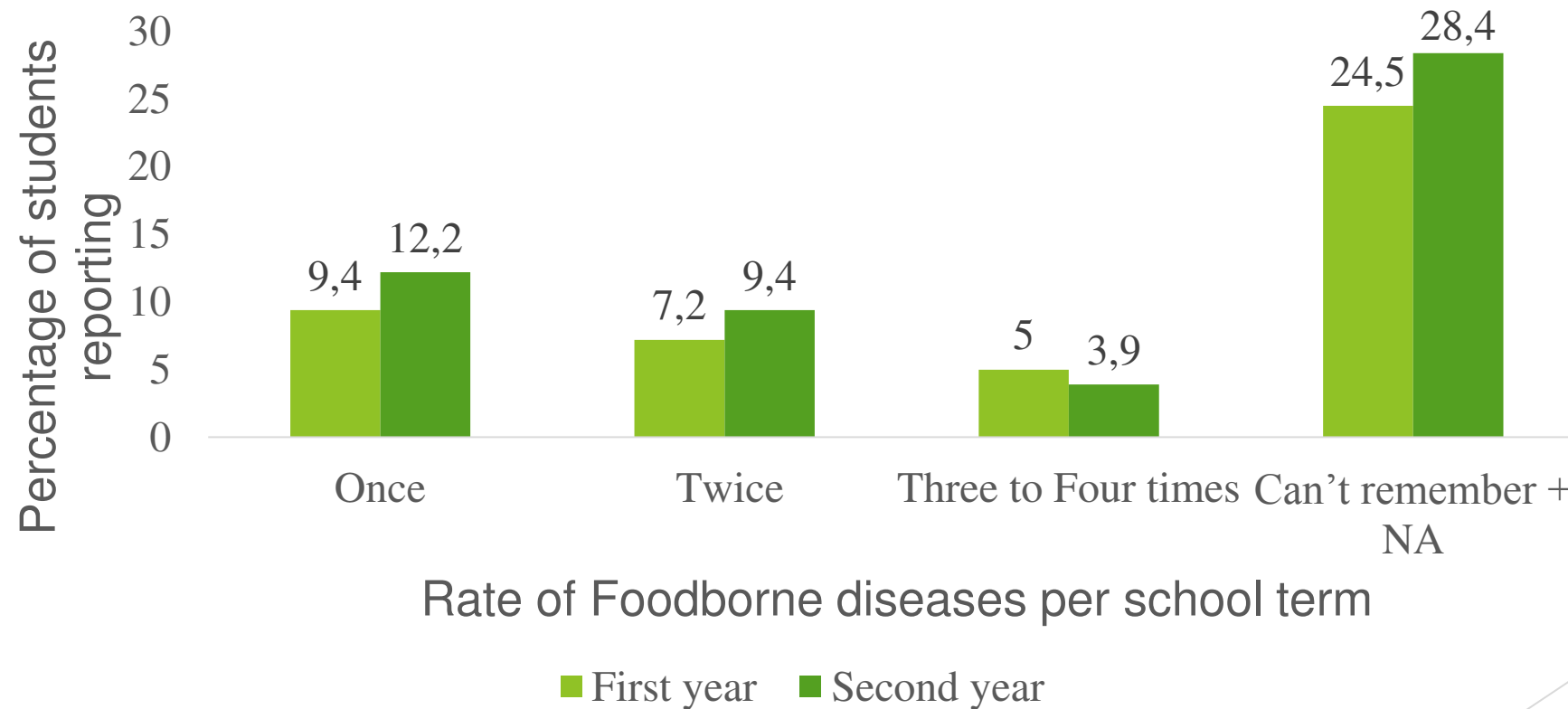
Methodology

- ▶ Permission was sought via the Dean of NCFM – Holbeach and the Ashanti Regional Education Director in Ghana to visit selected schools.
- ▶ Questionnaires were developed for matrons and kitchen staff from schools in Lincolnshire (10) and students from the Ashanti Region (45) of Ghana.
- ▶ 10 matrons and 12 kitchen staff from Lincolnshire and 45 matrons and 180 staff from Ghana (4 per school) were given questionnaires to respond to on hygiene awareness and practices
- ▶ Audit check list for hygiene standards was adopted from Santana *et al* (2009) in Brazil towards hygiene categorisation of schools.
- ▶ Qualitative tools on SPSS version 21 were used to analyse data.

Students concern-food contaminants in school meals



Students report: FBDs experienced per school term



Comparing Food Laws in the UK and Ghana



1990 Food Safety Act - UK

- ▶ Part II Main Provisions
- ▶ 7. Rendering food injurious to health
- ▶ 8. Selling food not complying with food safety requirement
- ▶ 23. Provision of food hygiene training (to commensurate with staff responsibilities EC Regulation 852/2004

*GHP AND HACCP Legal requirement

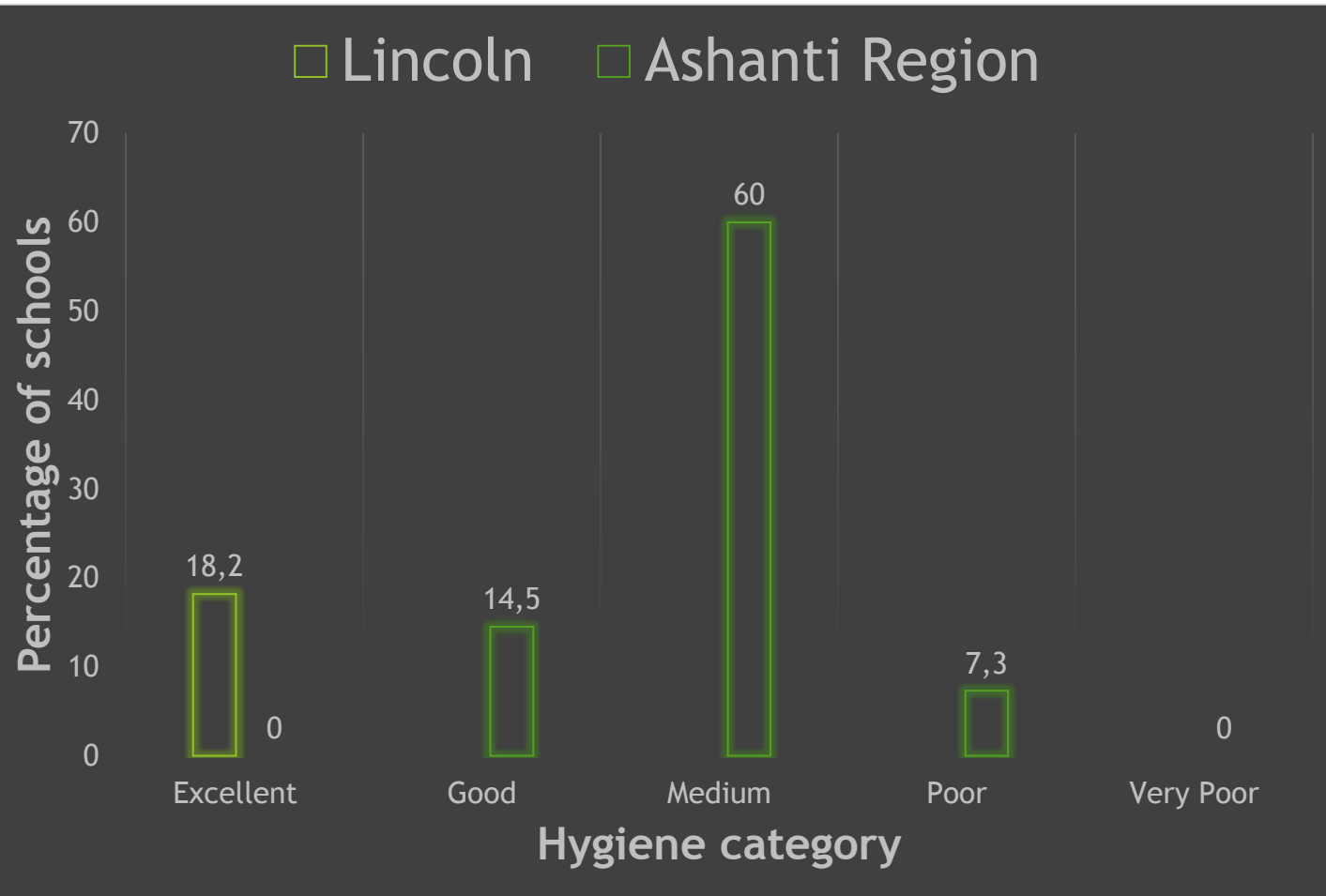
1992 Food and Drugs Law of Ghana

- ▶ Section 1. Sale of unwholesome food is prohibited
- ▶ Section 6. Manufacture of food under supervision by persons with knowledge and qualification (*silent on hygiene training for food handlers)
- ▶ Section 7. Sale of food under unsanitary conditions
- ▶ *GHP industrial requirement not yet a legal requirement

School canteens in Lincolnshire and Ashanti Region

Variables		Lincolnshire	Ashanti Region	Chi square
Percentage of schools visited		18.20	81.80	
Types of meals provided	Hot meals	1.82	27.27	
	Combination of hot and cold	16.36	54.55	
Students served per meal*	1-500	9.09	14.55	11.909 (0.008)
	501-1000	9.09	18.18	
	1001- 3000	0.00	49.09	
Availability/Evidence of Food Safety Management System	Yes	18.18	0.00	
	No	0.00	81.82	
Matrons hygiene qualification*	Yes	18.18	56.36	4.173 (0.041)
	No	0.00	25.45 (31%)	

Schools audit report- Hygiene standards



Factors considered

- ▶ Facility design
- ▶ Utensils and equipment maintenance
- ▶ Personal hygiene of personnel
- ▶ Raw material and RTE food quality
- ▶ Process flow/Quality control

Hygiene training provision- management commitment

	Hygiene training providers					
	Formal education	Government agency	Private groups	Work place	None	
<i>Lincolnshire</i>	1.04	0.00	1.56	3.65	0.00	
<i>Ghana</i>	3.13	4.69	1.56	2.60	81.77	
	Frequency of staff on-job training on site					
	During induction	Every year	More than a year	Never	Other	No Response
<i>Lincoln</i>	0.00	3.65	1.56	0.52	0.00	0.52
<i>Ashanti Region</i>	64.58	2.08	2.60	23.96	0.52	0.00
	Hygiene Training expiry (period since last hygiene training)					
	A year ago	Two years ago	3 years ago	4 years ago	≤5 years ago	None
<i>Lincolnshire</i>	4.69	1.56	0.00	0.00	0.00	0.00
<i>Ashanti</i>	4.17	2.60	0.52	1.04	3.13	77.08

Staff food hygiene practices in the UK and Ghana

	Infectious disease reporting to manager					
	Most likely	Likely	Don't know	Unlikely	Most unlikely	Chi square
Lincolnshire	6.25	0.00	0.00	0.00	0.00	25.600(0.001)
Ashanti Region	27.08	30.54	6.25	16.15	5.73	
	Hand washing before starting work					
	Most likely	Likely	Don't know	Unlikely	Most unlikely	
Lincolnshire	6.25	0.00	0.00	0.00	0.00	14.553(0.006)
Ashanti Region	50.52	30.20	0.00	11.98	0.52	
	Hand washing after visiting the toilet					
	Most likely	Likely	Don't know	Unlikely	Most unlikely	
Lincolnshire	6.25	0.00	0.00	0.00	0.00	10.831(0.002)
Ashanti Region	47.92	41.15	0.52	4.17	0.00	
	Removal of unapproved jewellery during food preparation and service					
	Most likely	Likely	Don't know	Unlikely	Most unlikely	
Lincolnshire	5.73	0.52	0.00	0.00	0.00	12.962(0.005)
Ghana	36.46	35.42	0.00	17.19	4.69	
	Cleaning of protective clothing daily					
	Most likely	Likely	Don't know	Unlikely	Most unlikely	
Lincolnshire	6.25	0.00	0.00	0.00	0.00	12.800(0.012)

Interesting breaches in good hygiene practices in Ghana- (culture effects?)



Way forward

▶ Ghana

- ▶ Requirement of mandatory Good Hygiene Practices for all food establishments in Ghana with improved surveillance.
- ▶ 1992 PNDCL 305B Section 6 require revision - staff training that commensurate with their responsibilities needs to be a legal requirement
- ▶ Health screening before employment and monitored routine checks are required in Ghana.
- ▶ Lack of water, soap and hand drying materials in kitchen for staff and staff toilets is a serious breach in hygiene control requiring immediate attention from Government and management
- ▶ Matrons require food safety control training in addition to their role as production managers in Ghana- effective risk assessment and control

Questions ?

Thanks for Listening

Reference

- ▶ European Union (2004) Council Regulation 852/2004 on the hygiene of foodstuffs. *Official Journal of the European Communities*, L 139, Brussels.
- ▶ Food and Drugs Authority (1992) The Food and Drugs Act. PNDCL 3058 of 1992. www.fda.gov.gh
- ▶ Food and Drugs Authority (2008) Contaminated food killed 90,692 in 2006. www.modernghana.com Viewed on 29/4/13
- ▶ Food Standard Authority (2014) New UK food poisoning figures published- refined real burden of disease estimates. www.food.gov.uk viewed 05/04/2015
- ▶ Food Standards Agency (2011) Foodborne disease strategy 2010-2015. An FSA programme for the reduction of foodborne disease in the UK. www.fsa.gov.uk Viewed on 1/14/2013
- ▶ Food Standards Agency (2014)
- ▶ Ghana Statistical Service, (2010) Population censuses. GSS.gov.gh
- ▶ MoFA / WorldBank, (2007) Review of food safety in Ghana. www.worldbank.org Viewed on 14/10/12
- ▶ Office of National Statistics UK (2013) Population estimates for UK, England, Wales, Scotland and Ireland, Mid-2013. www.ons.gov.uk viewed 05/04/2015