

Relationships between Waste Collection Systems and MSD's

Presentation to IOSH Branch Meeting Glasgow

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28th January 2016

Industry Problem

Entrrenched views

- Historic Problem – Wheeled bins v Boxes
- Chere – Research
- Better quality of recycling when hand sorted than MRFs
- Modern MRFs can produce high quality material
- HSL Studies and Academic Research





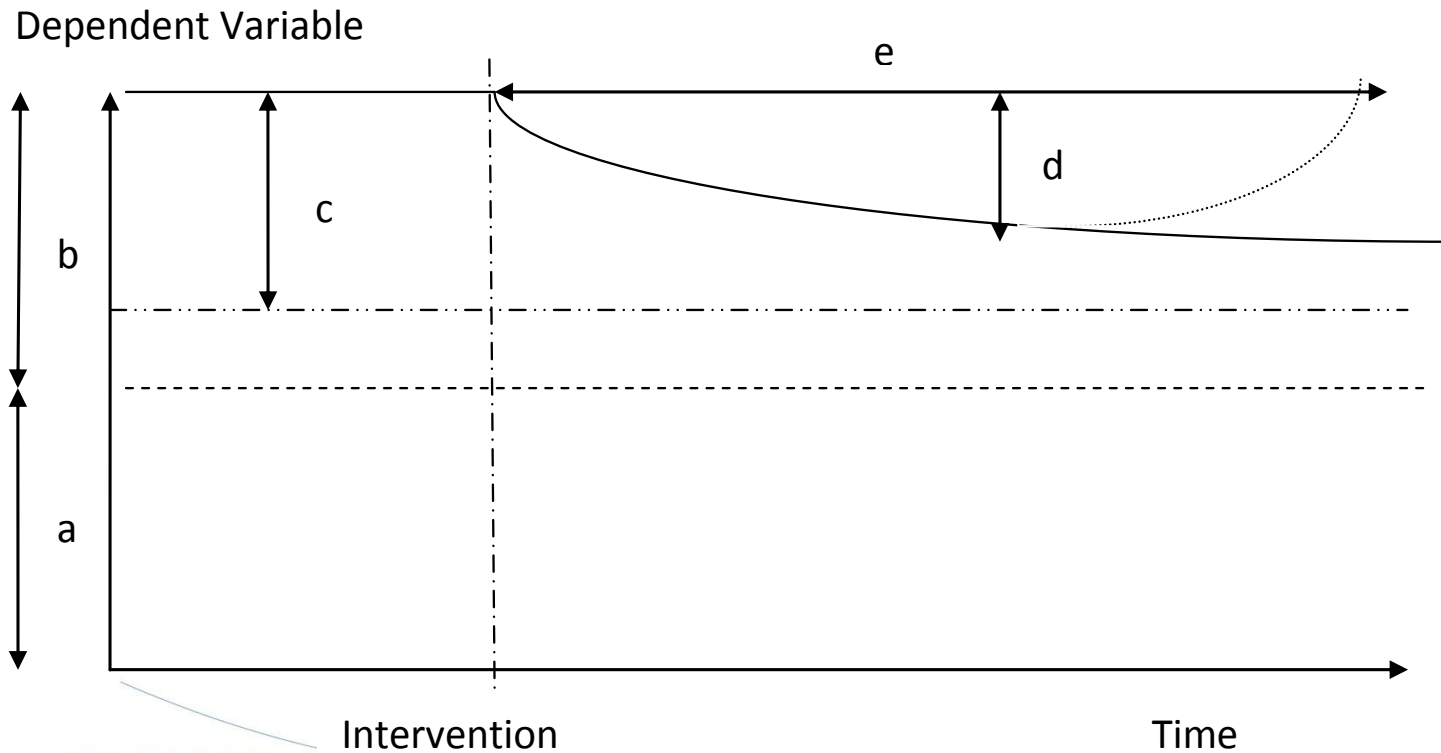
Industry Headlines

- RoSPA – Work related Accidents & Ill health cost £20- £30b
- Work Foundation – Over 40 million workers in Europe are affected by MSDs attributable with work
- PWC – absenteeism costs UK business £32bn pa
- HSL- Considering W&R sector as a whole, levels of sickness absence are approx. 30% higher than those of other comparable sectors

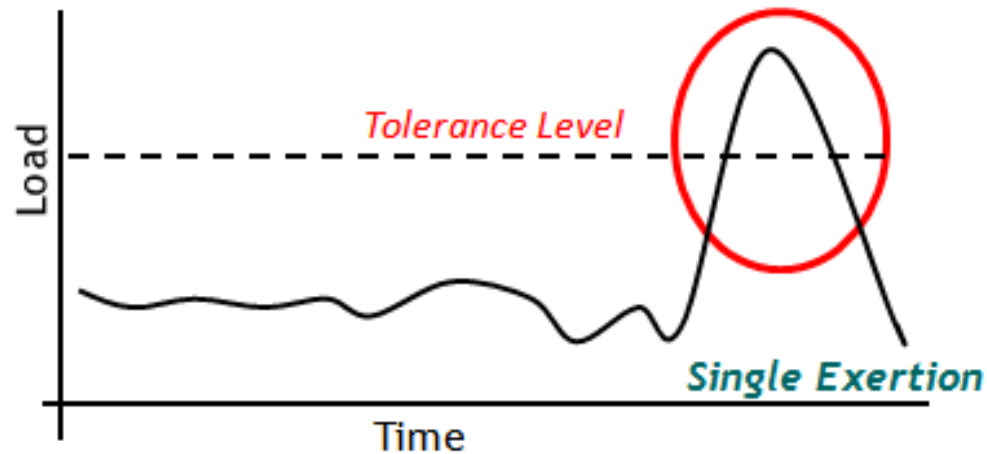
Aim

- “Investigate common domestic waste kerbside collection and recycling practices in the UK to establish their relationship with operative’s health around musculoskeletal (MSD) injuries as a contribution to the risk assessment decision making process”.

Consider Ergonomic Intervention

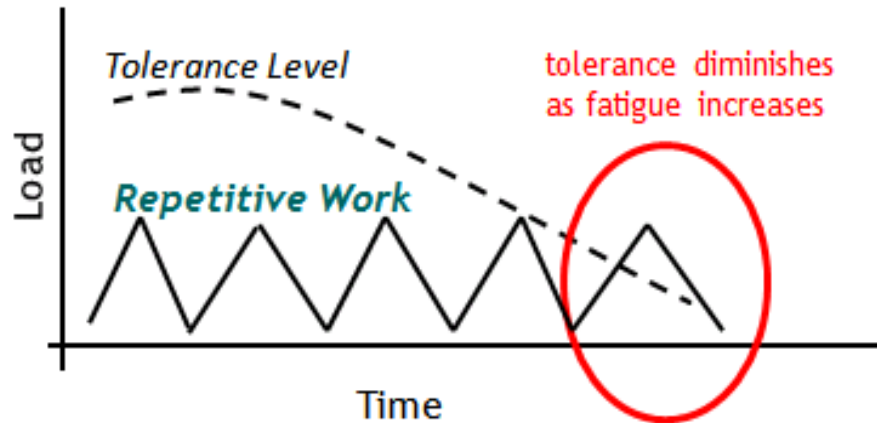


The work of McGill (1)



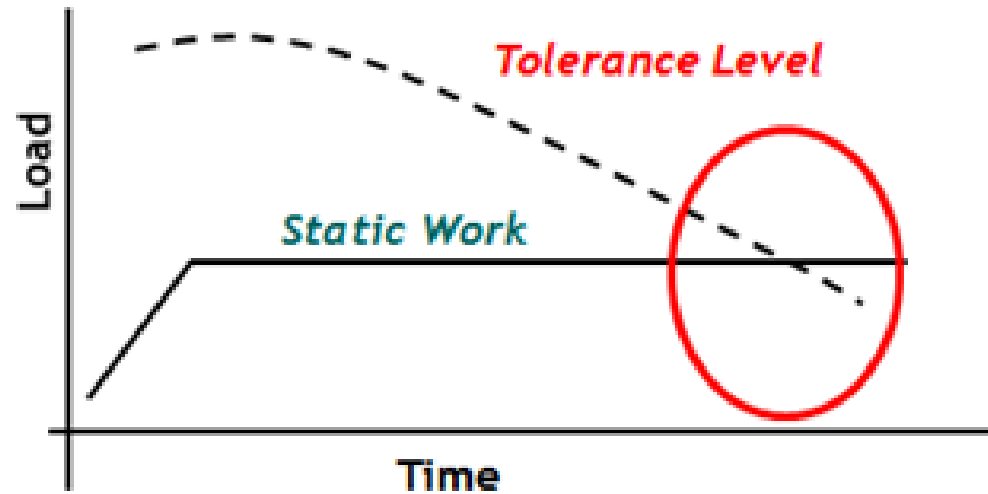
- After DASH

The work of McGill (2)

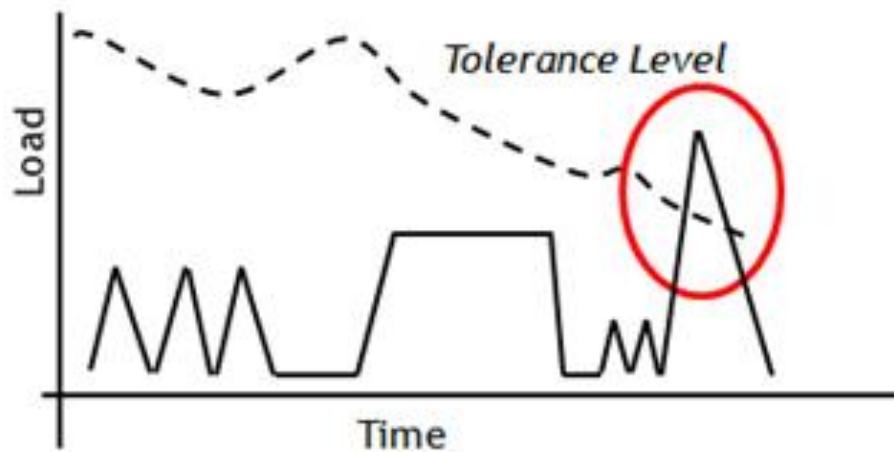


- After DASH

The work of McGill (3)



The work of McGill (4)



Other Parts of the Body

Not just the back - Consider:

- Shoulder
- Knee
- Lower Leg
- Wrist

Literature Review

- Extended search carried out
- HSE /HSL Research Reports
- Peer Reviewed information from university data bases
- Grey literature from local authorities...
- Global – providing in the English Language

Why we are doing this

Intermittent and /or
occasional
discomfort
experienced by
employee

if untreated leads to

....



Prolonged pain
experienced by the
employee,
conditioning
worsening

if untreated leads
to....



Pain levels become
above individual
thresholds -
employees stay
home

if untreated can
lead to termination
of employment

System Risk Assessment



Health and Safety
Executive

Collecting, transfer, treatment and processing household waste and recyclables

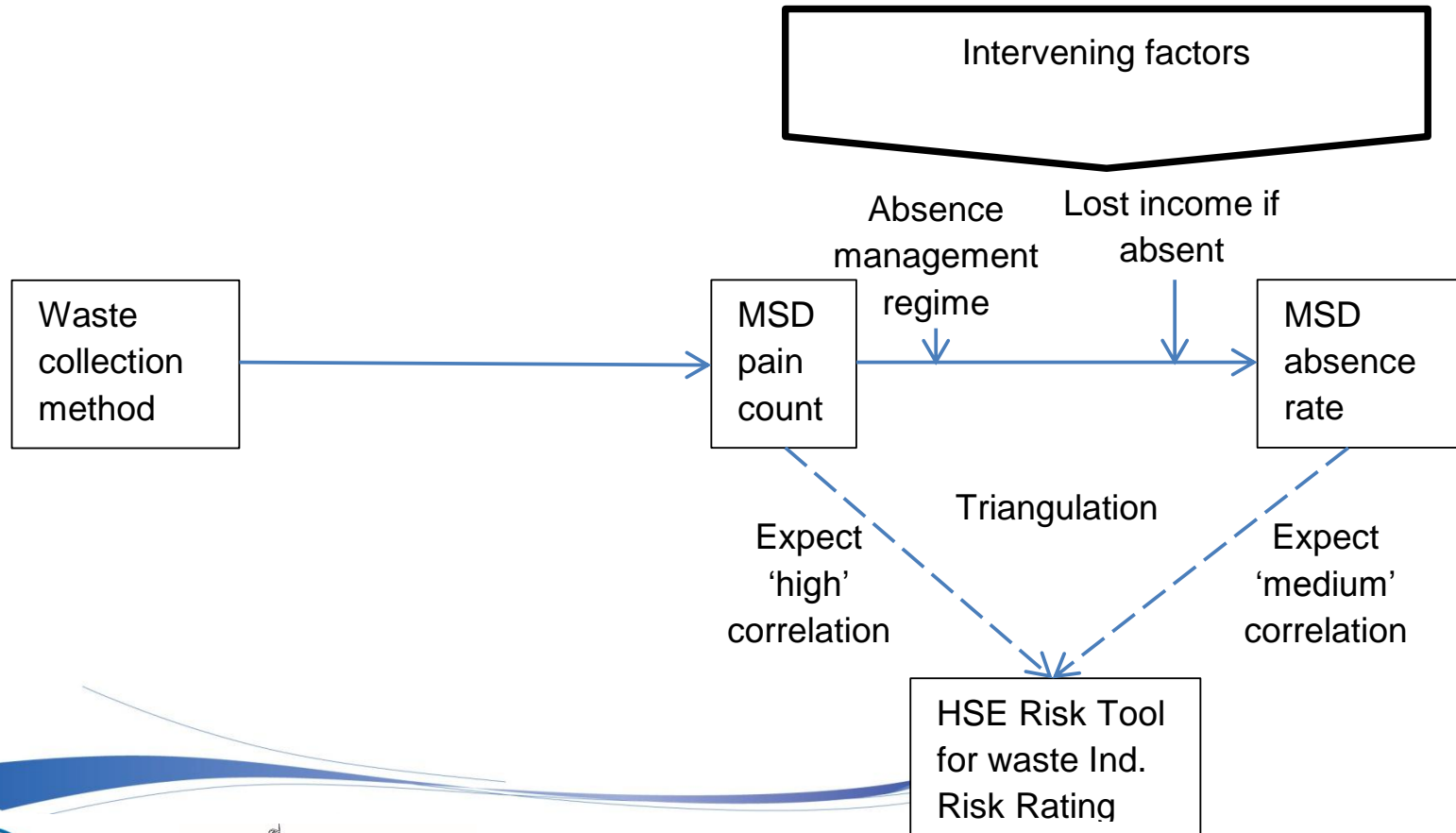
Assessment of the occupational health and safety risks of systems to provide HSE, local authorities, waste/recycling companies and others with data that will assist in the selection of the most appropriate system whilst meeting environmental targets

Prepared by the **Health and Safety Laboratory**
for the Health and Safety Executive 2008

Shane Turner, Jane Hopkinson, Laraine Oxley,
Sandra Gadd, Nicola Healey & Peter Marlow
Health and Safety Laboratory
Harpur Hill
Buxton
SK17 9JN

RR609
Research Report

Methods Followed



Key Contacts

- 65 LA's contacted
- 20 provided information
- 15 sets was useable
- 5 authorities – followed up work
- AVDC in effect a case study

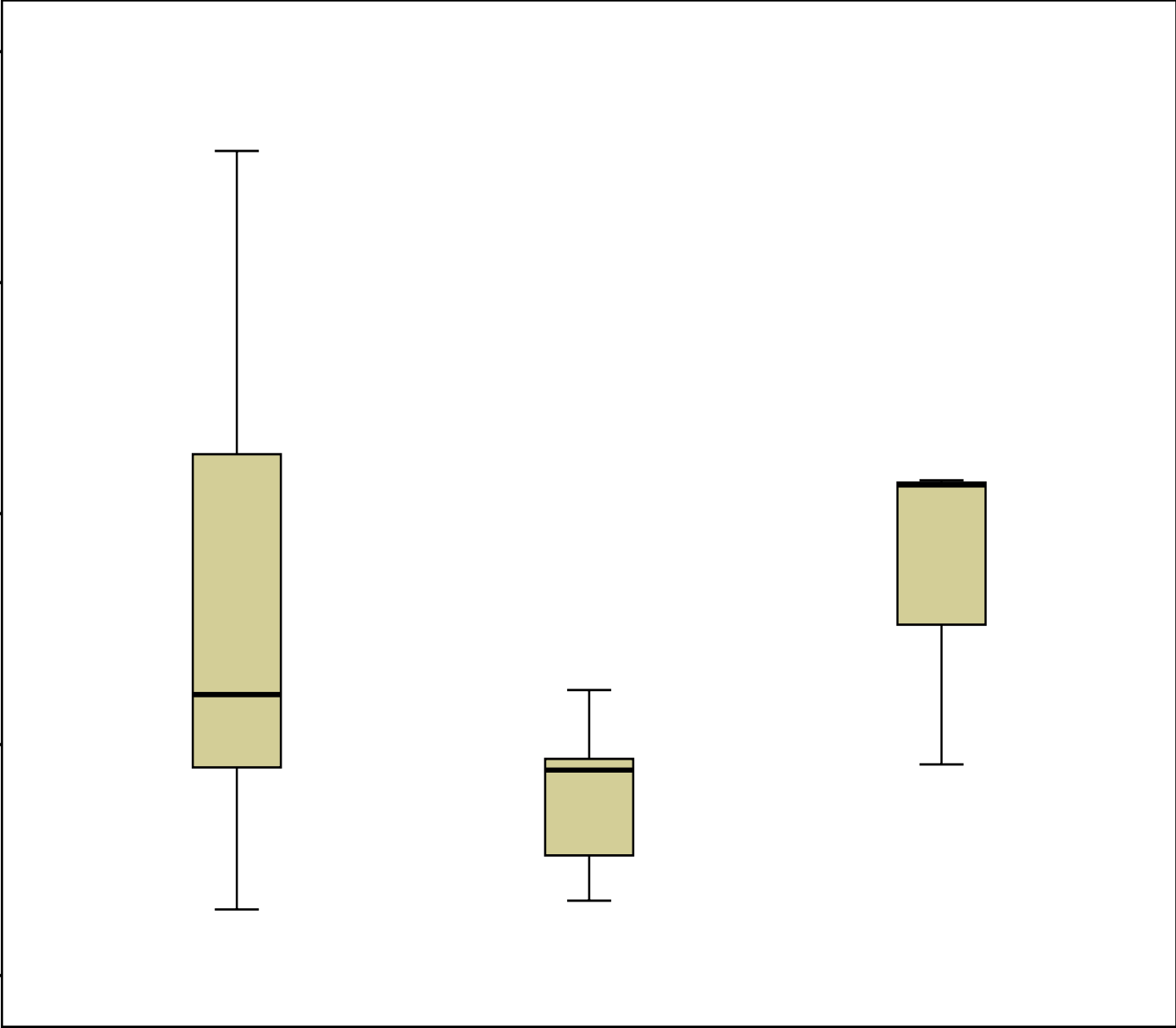
- Direct contact, FOI of limited use

Average no of days off per authority (Backs and MSD's)

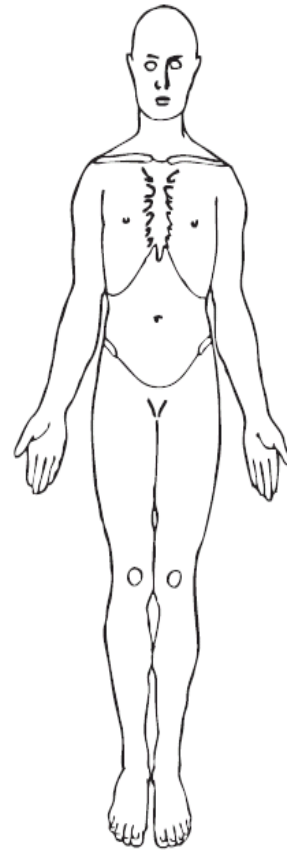
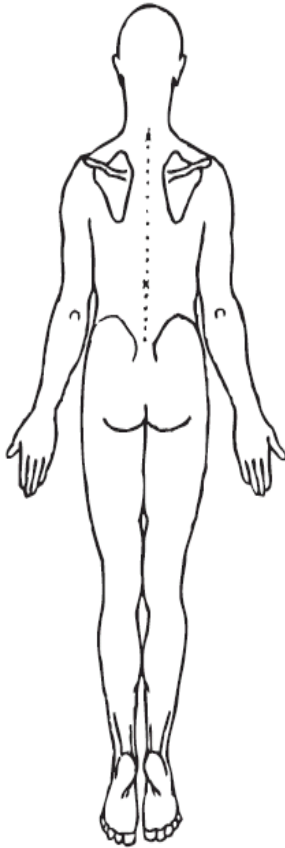
20.00
15.00
10.00
5.00
.00

w heeled bins w ith boxes w heeled bins w heeled bins plus sacks

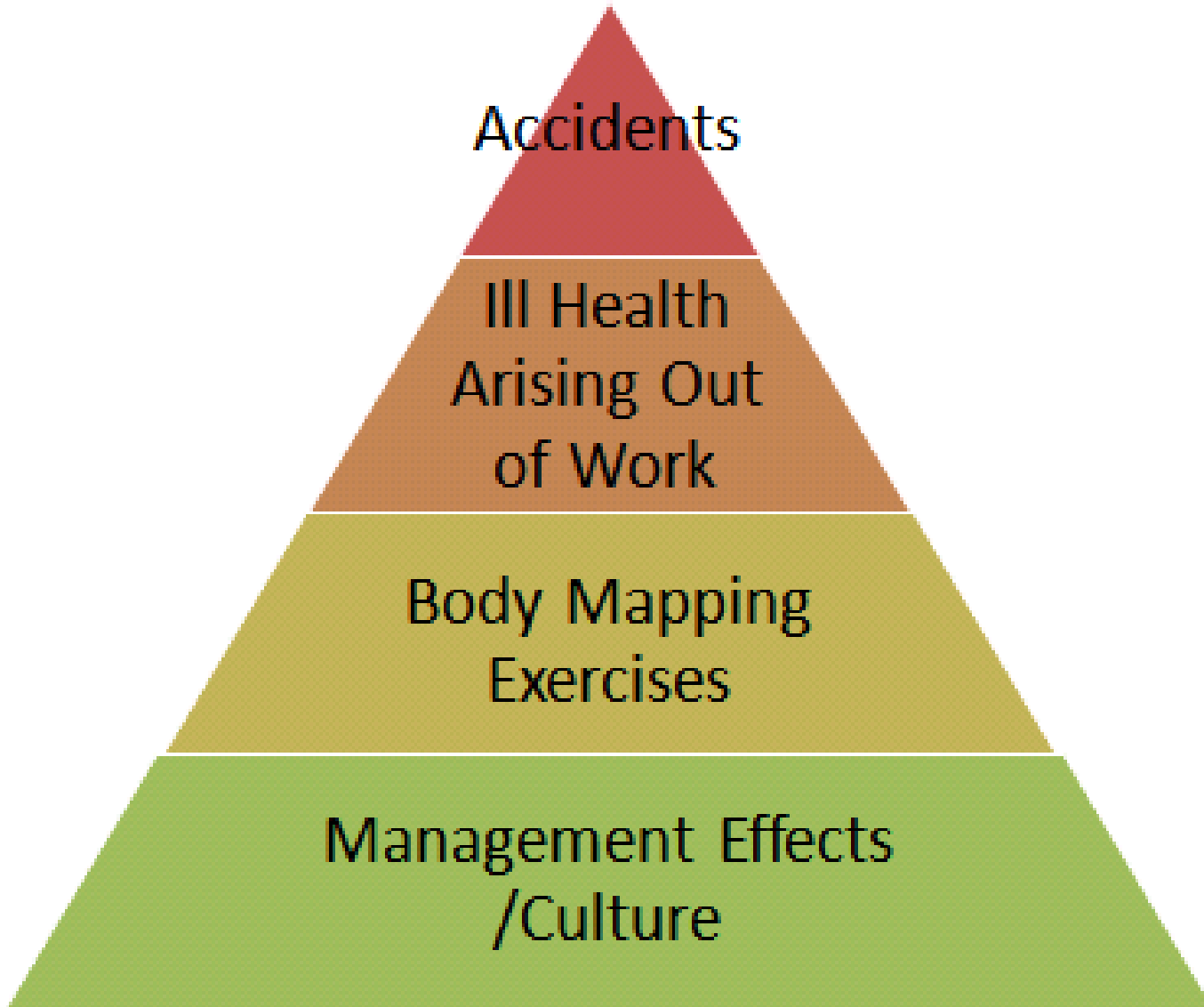
Collection systems used by authorities



Body Mapping – What is it?



(Difficult) EASE OF GATHERING ACCURATE INFORMATION (Easy)



Adapted from
Thomas (2012)

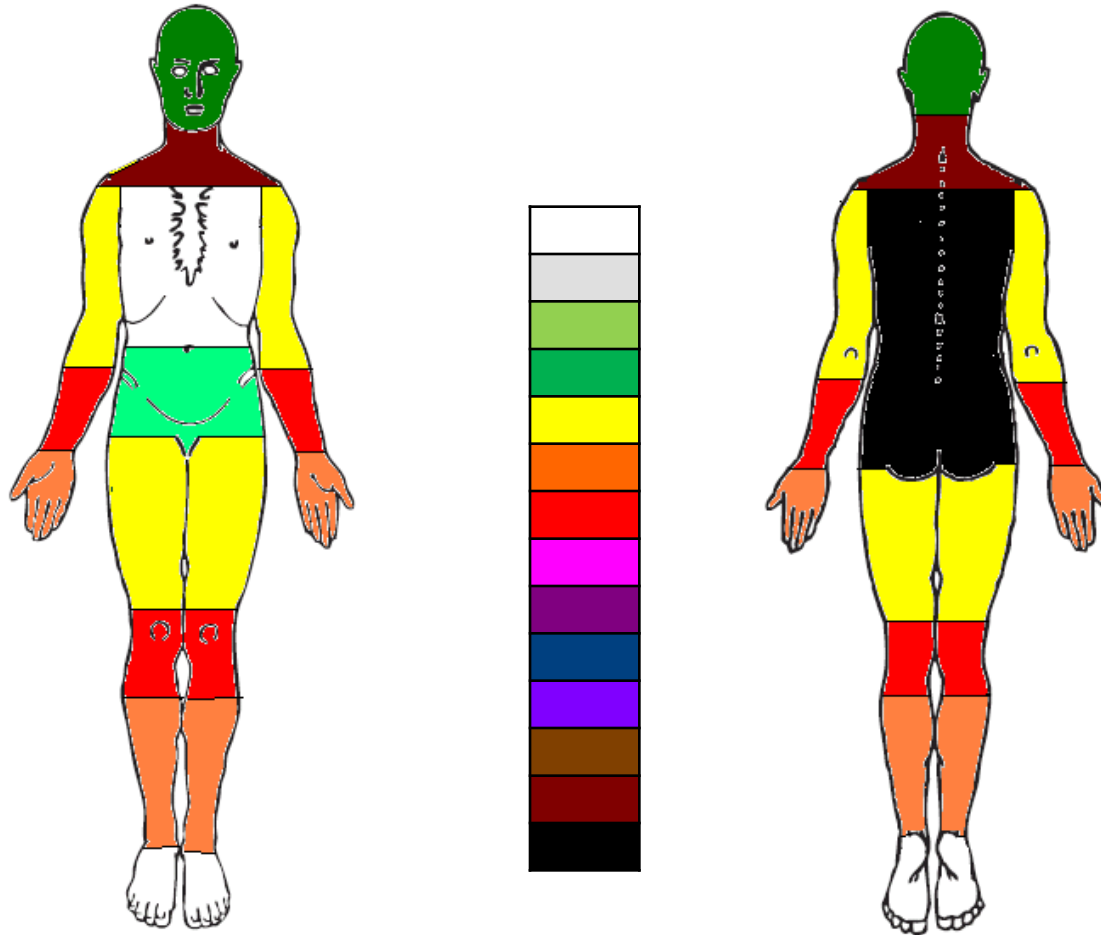
What is APC ($APC=P/E$)

- APC = Average Pain Count
- $APC = \text{No. of Pain Markers (P)}/\text{number of employees (E)}$
- Epidemiological
 - Simple process utilising amount of pain experienced within a work group
 - Is a very useful comparator of pain being experienced by different work groups

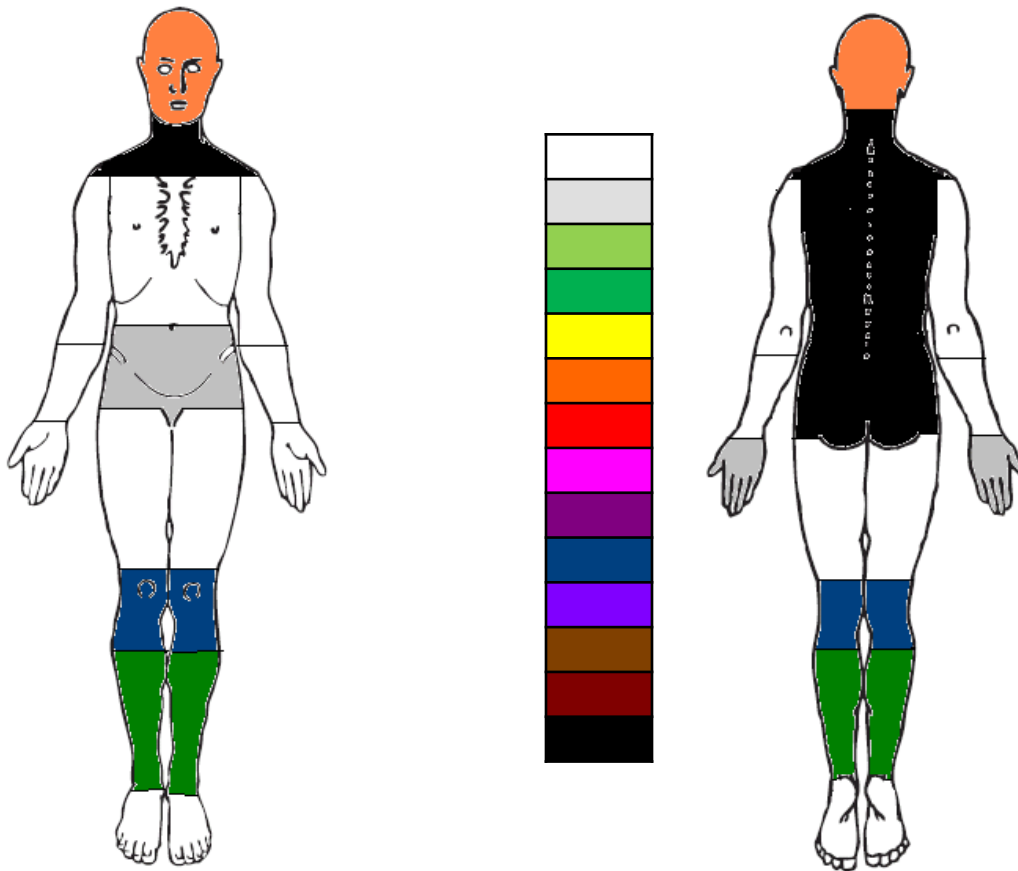
Worked Examples

1. Comparison of pain amongst refuse collectors carrying out waste collection using different methods
2. Identification of pain experienced by office based staff at AVDC

Workstream 1 Example – Loader recycling Boxes

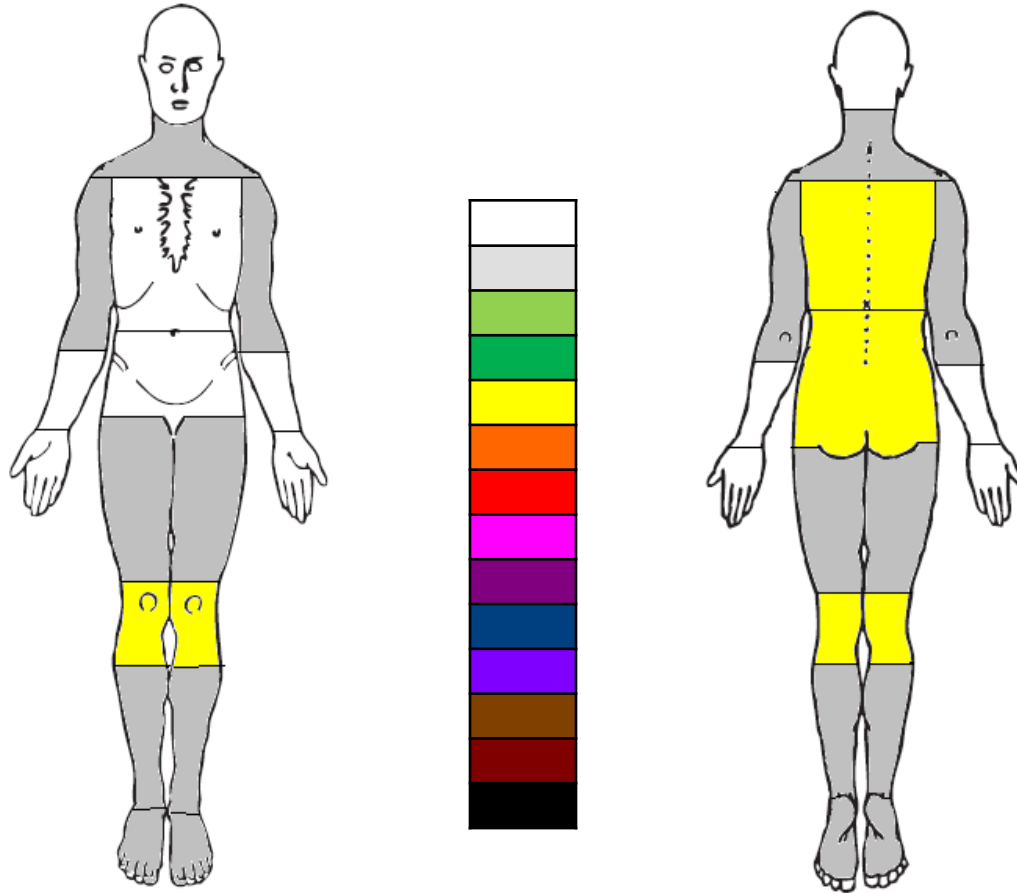


Example – Drivers



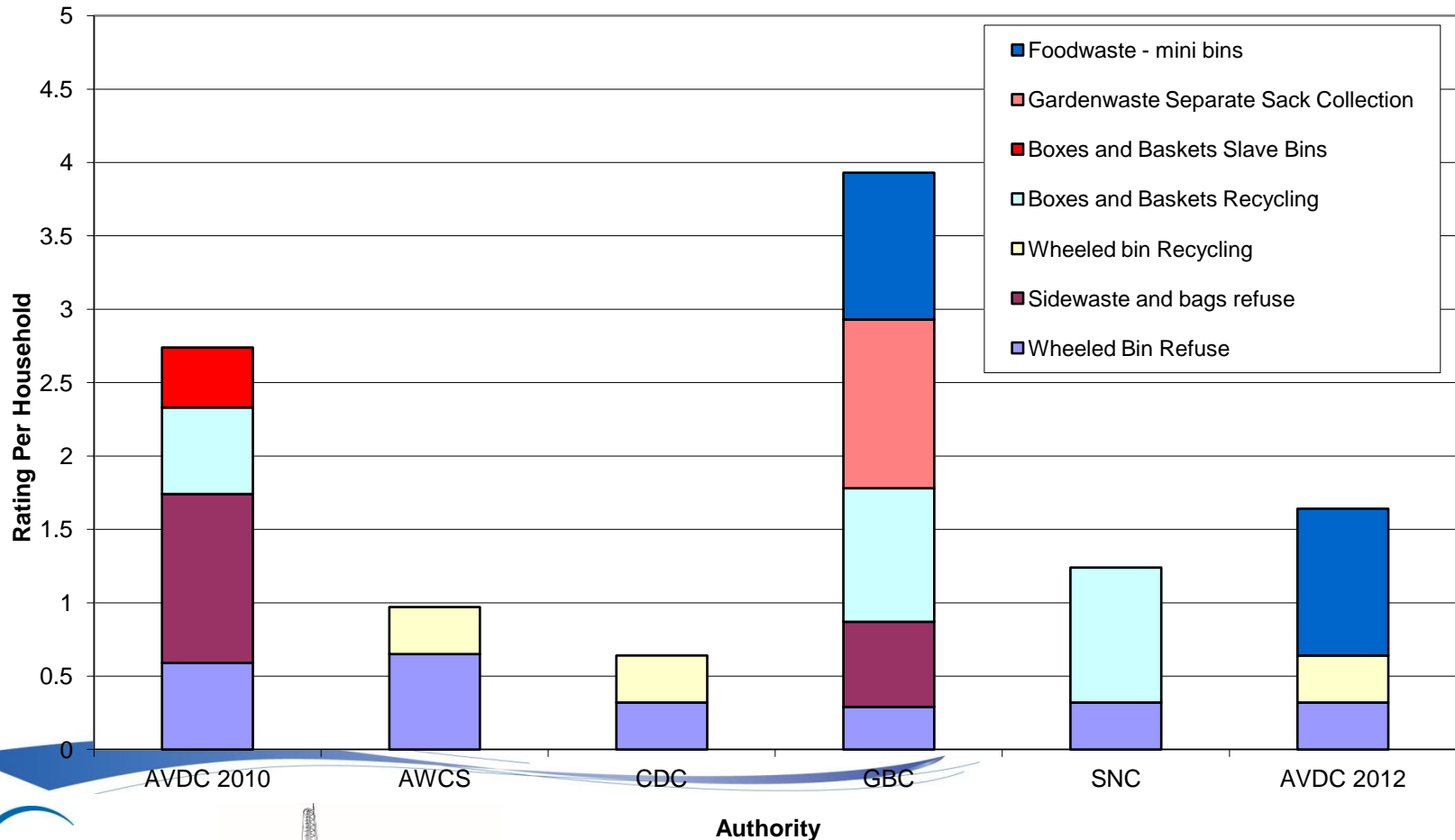
Adapted from
Thomas (2012)

Example – All Service – Wheeled Bins

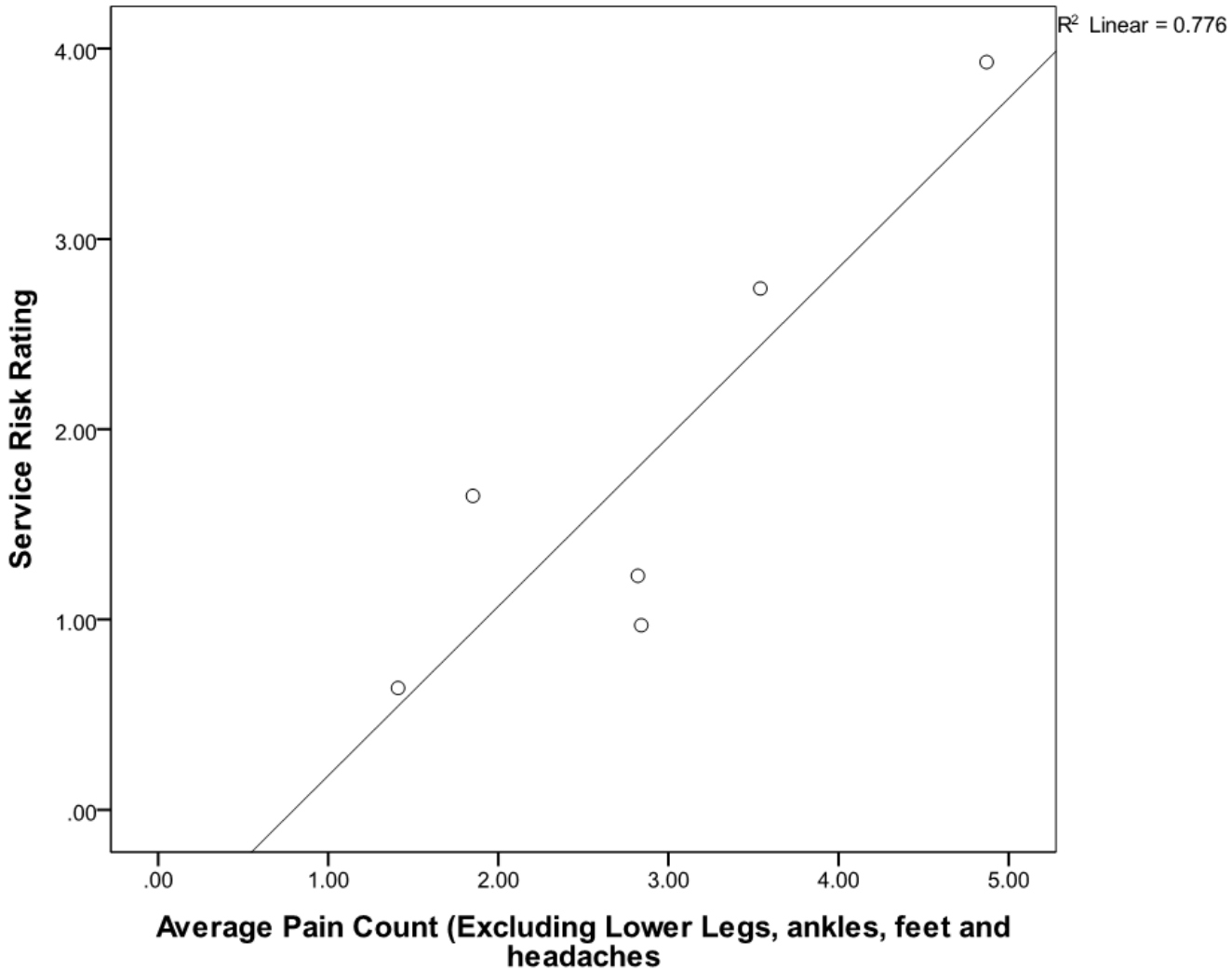


Adapted from
Thomas (2012)

HSE's Risk Comparator Tool



Comparison of APC v RR



Sustainability – age comparisons

Authority	No of Participants indicating an age	Mean Age
AVDC 2013	48	38.25
AVDC 2010	62	39.42
AWCS	49	42.22
CDC	60	39.42
GBC	31	41.74
SNC	21	31.76
TOTAL	271	39.16



Sustainability Rio Declaration

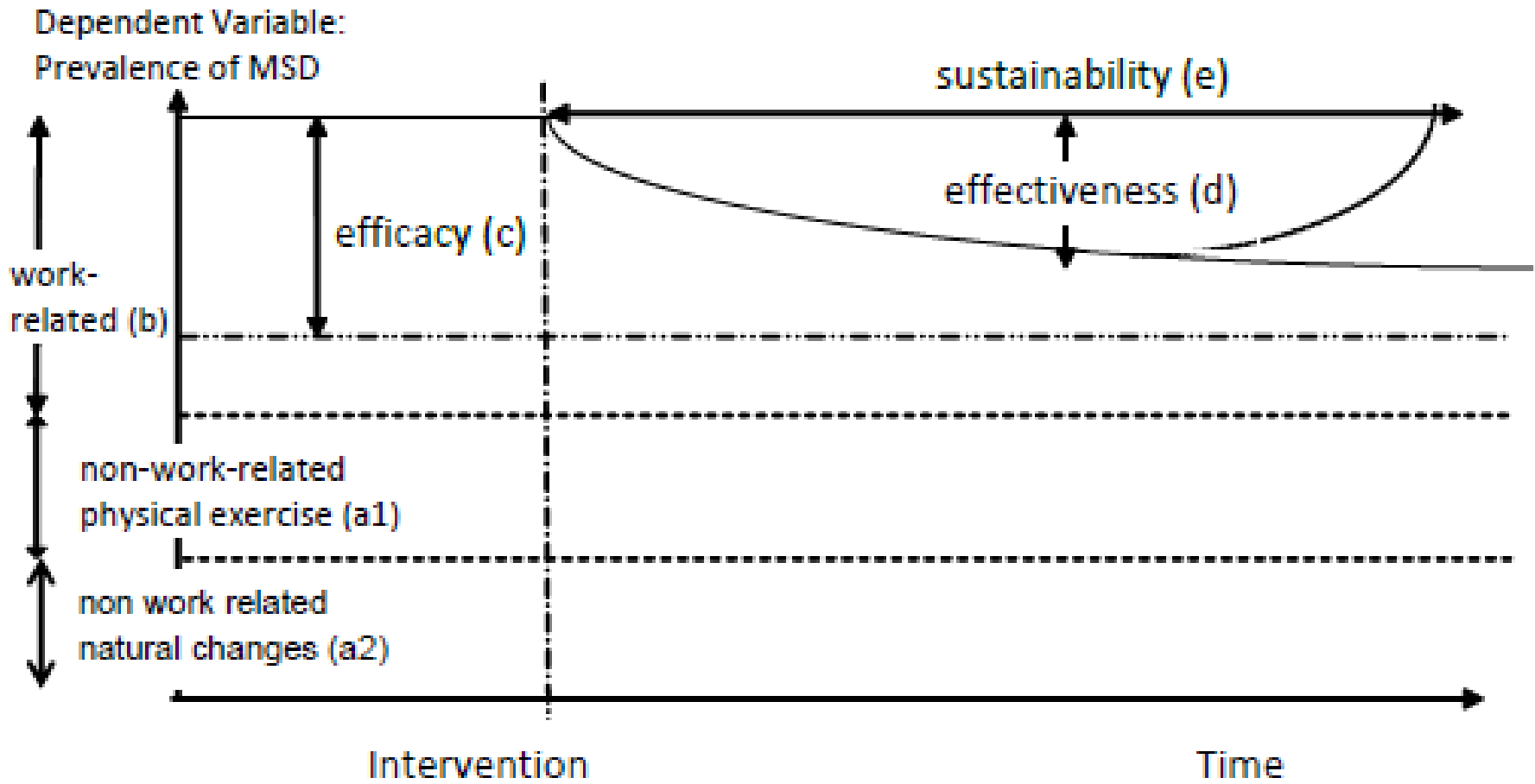
The 1992 Rio Declaration on Environment and Development

No 1 -

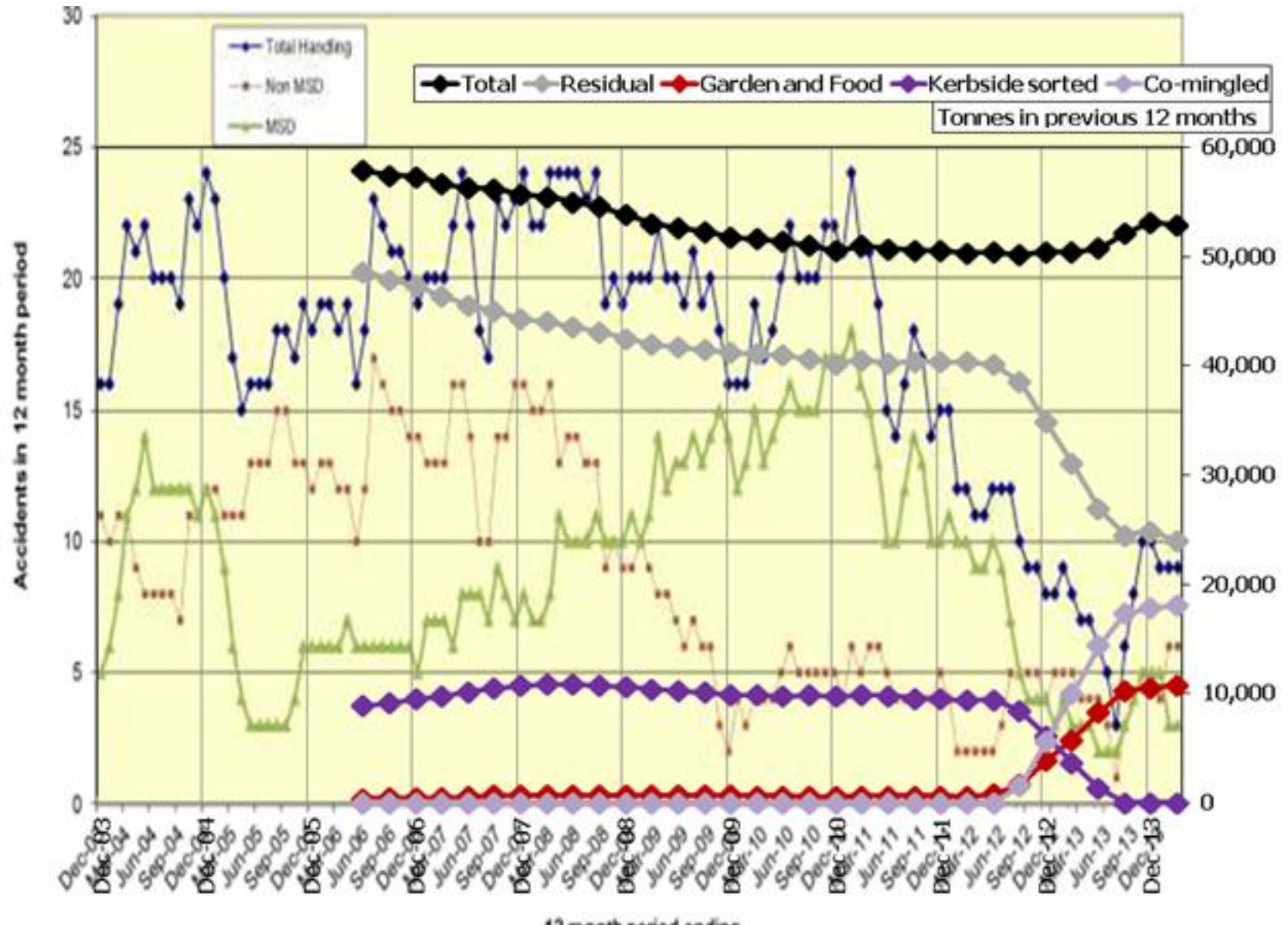
- People are entitled to a healthy and productive life in harmony with nature.
- Raising the retirement age- issues?

Recommendations

- Further Study 6
 - Waste Industry 7
 - Use of Body Mapping 5
 - Others 2
-
- Sustainability Commentary



From WYG Consultants



Follow up work

- Third study at AVDC
- Obtained more information on age and length of service
- New service nearly 2 years old
- Effects of food waste collection?

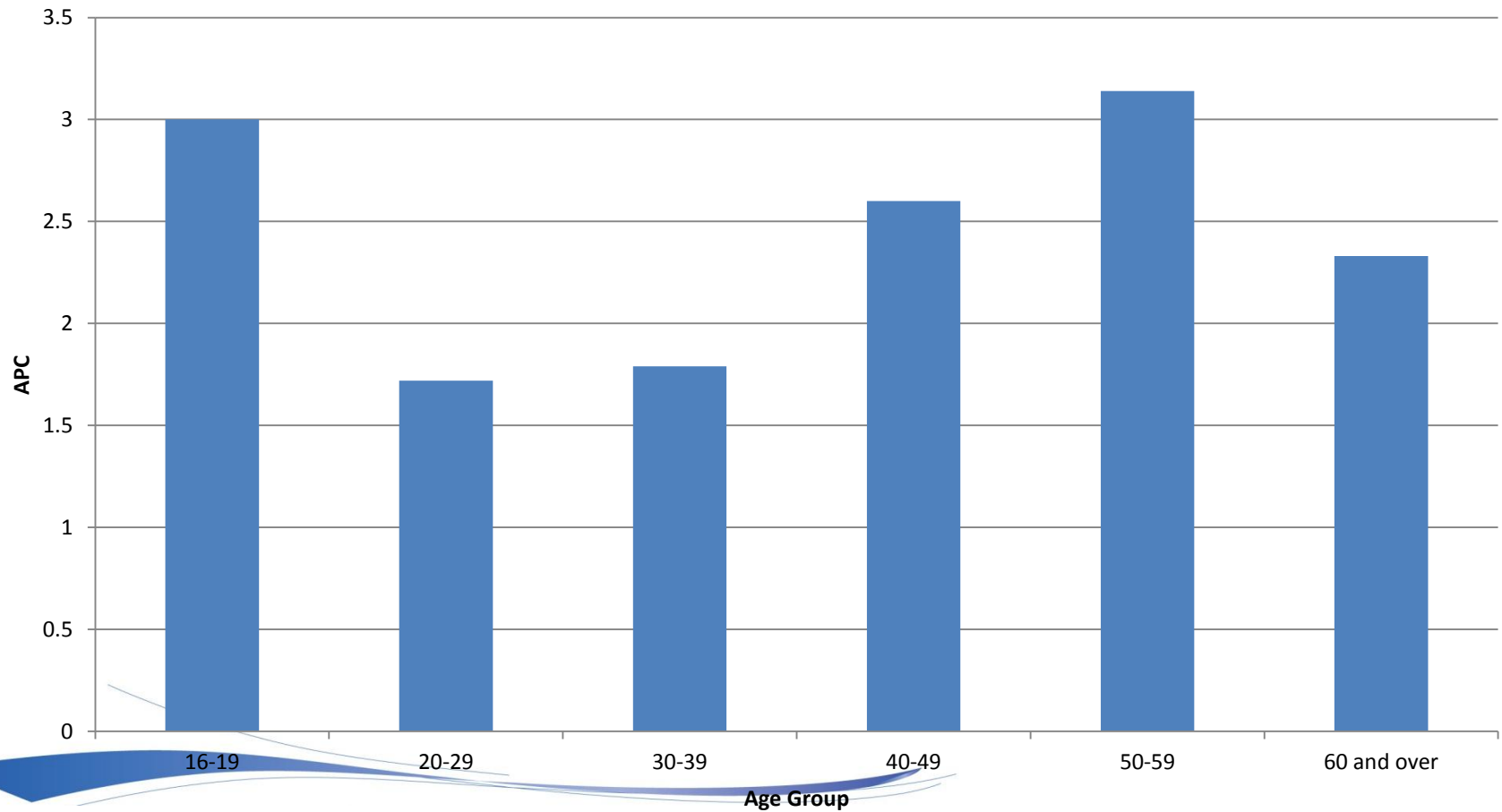
Comparison

Part of the body marked	APC 2010	APC 2013	APC 2014
Arm including elbow	0.54	0.24	0.17
Shoulder including neck	0.91	0.19	0.51
Forearm including wrist	0.14	0.26	0.12
Back (mainly lower)	0.86	0.33	0.64
Hand and Fingers	0.20	0.13	0.06
Upper Leg	0.17	0.11	0.25
Knee	0.61	0.43	0.56
Lower Leg and Ankle	0.49	0.22	0.45
Total	4.46	2.31	3.00
Total less foot, toes and head	4.02	2.07	2.35
Percentage Response Rate	96	71	95
Average Age (years) by those declaring	38.42	38.25	38.63
Average length of Service by those declaring	6.20	5.88	8.03

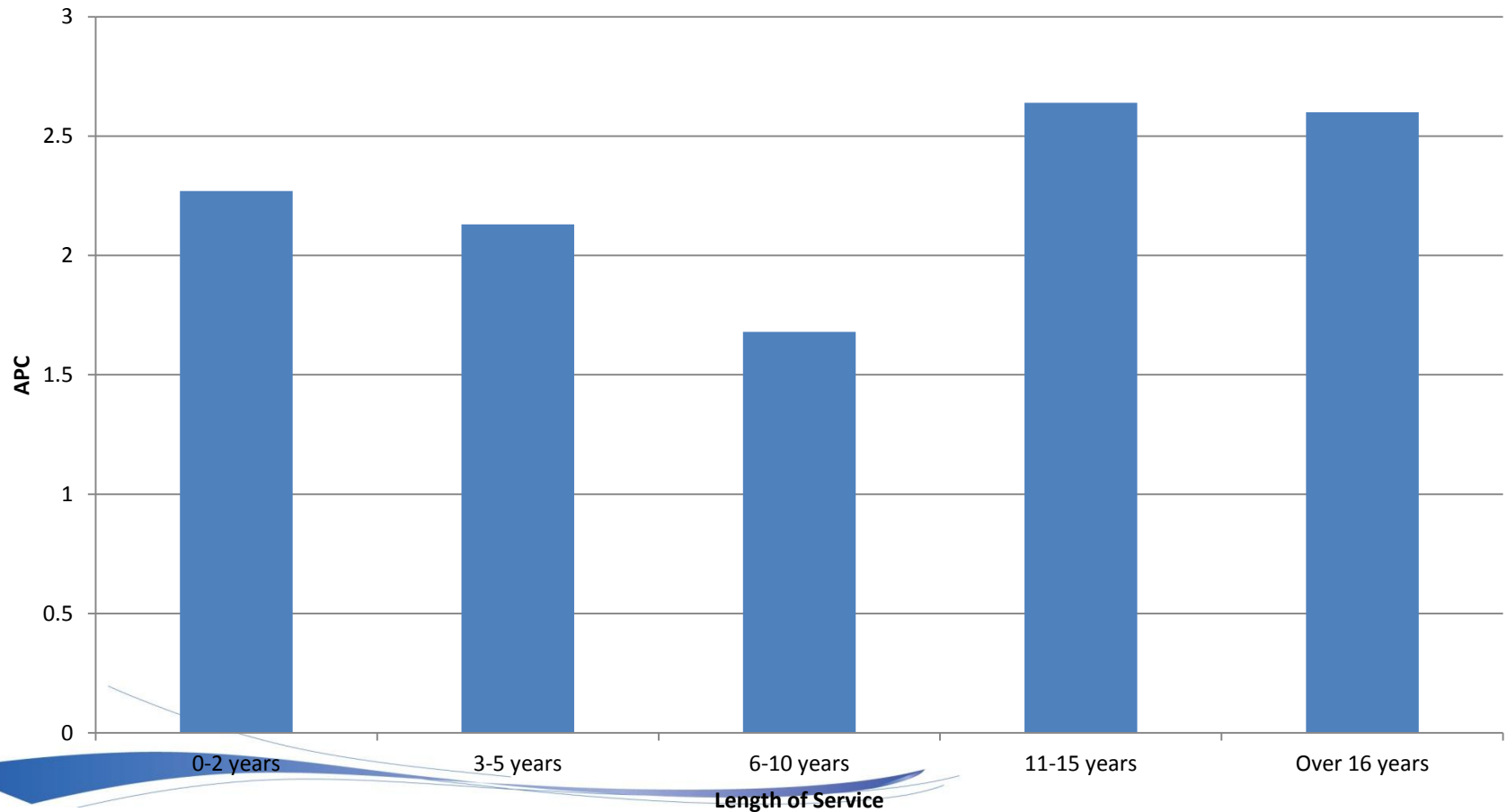
2014 APC

Activity	APC (Total less foot, lower leg toes and head)
Loader All Activity, including Wheeled Bins/Food waste - Trade Waste	1.96
Loaders- Those identifying as predominantly Food waste collectors	2.73
Loaders - Wheeled Bins Only	2.33
Mixed Activity –Loaders & Drivers	2.33
Driving all activity	2.67
Total	2.35

Comparison of APC with Age



Comparison of APC with Length of Service



On-going Challenge

Campaigner threatens councils over commingled collections

19 June 2014 | By Chiara Francavilla



Way Forward? For Scotland?



Summary

- Literature review suggests relationship
- Absence ill health data suggests a relationship but limited statistically significant data
- Body mapping shows a relationship
- RR 609 developed from literature
- Weakness in traditional H&S advice
- Co incidence???

**A world of work which is
safe, healthy and
sustainable**



FIX
ECT