PREVENTING PRESSURE ULCERS: IS ZERO TOLERANCE REALISTIC?

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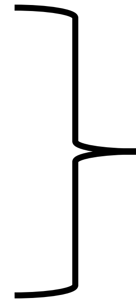
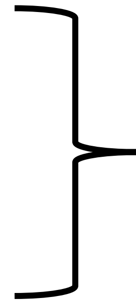
Terminology

- "Pressure sores"
- "Bed sores"
- "Decubitus ulcers"



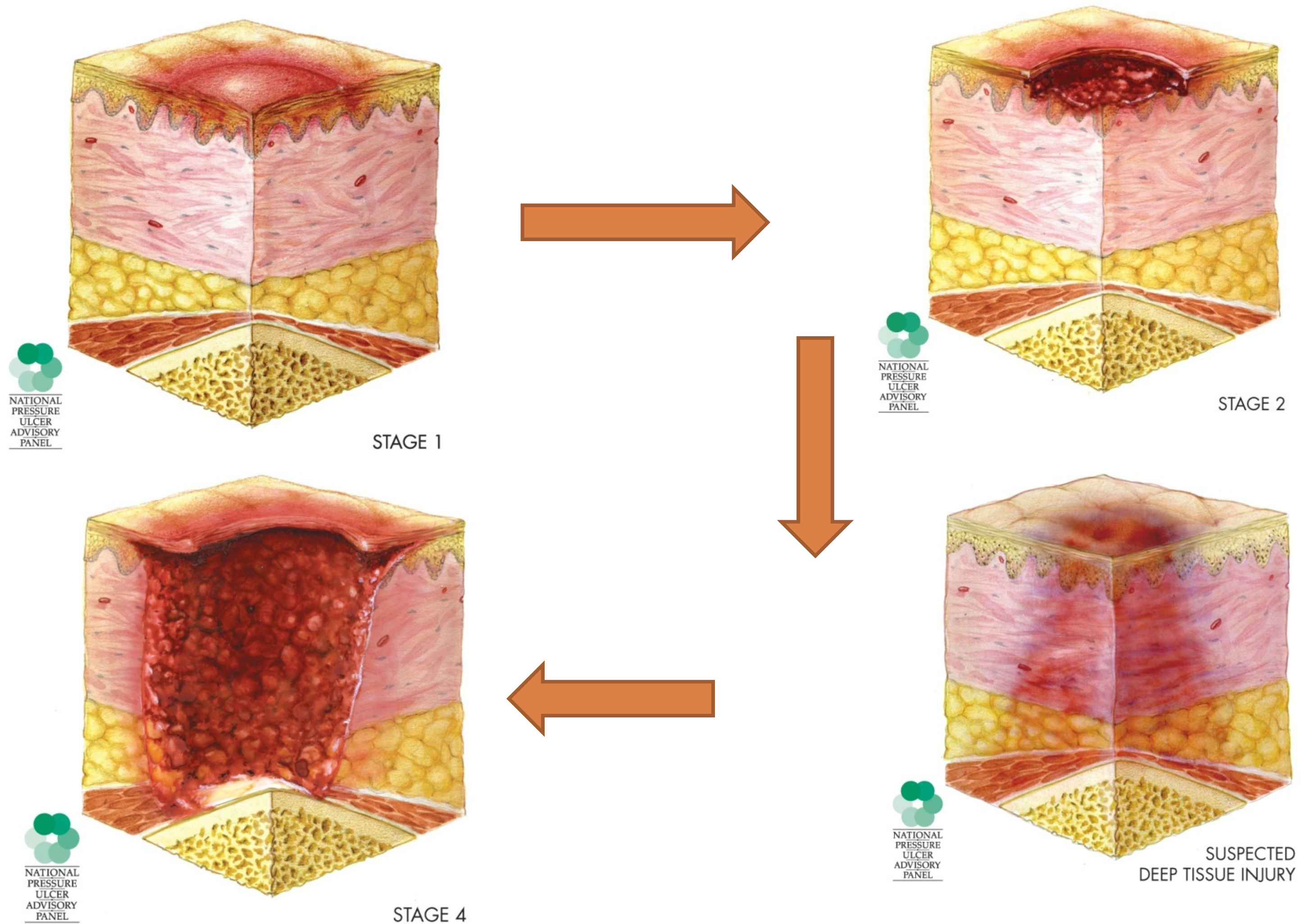
Pressure ulcers

- Care homes
- Residential homes
- Private homes



Primary care

Definitions



Is there a problem?

Pressure Ulcer Prevention – Zero Tolerance

Pressure ulcers in hospitals

- Typical UK Hospital 5 years ago:10-15% incidence of Pressure Ulcers (grade2-4)
- Our four main Hospitals have 2500 beds
- We were seeing around **500** pressure ulcers every month! (grade 2-4)

- Landspitali Hospital, prevalence around 19% (grade 1-4): a typical performance

Pressure ulcers in primary care (UK)

- Pressure ulcers are a problem
- Pressure ulcers are probably not well reported
- It is hard to be certain where they were acquired
- When you start to record them, they are more common than you thought!
- As frailty increases and as more care is delivered in primary care, so the risks will increase

Primary care: data hard to collect

- In one region of Wales (population 130,000)
  - 85 in care and residential homes
  - 218 pressure ulcers in peoples homes per annum
  - 88 under community nursing care
- In another region (pop 138,000: 987 care beds)
  - 45 pressure ulcers in 22 care homes (*prevalence audit*)
  - 75 under community nursing care per annum
- In a third (pop 140,000: 1100 beds)
  - 60 pressure ulcers care homes per annum
  - 24 in peoples homes

Pressure ulcers in primary care (UK)

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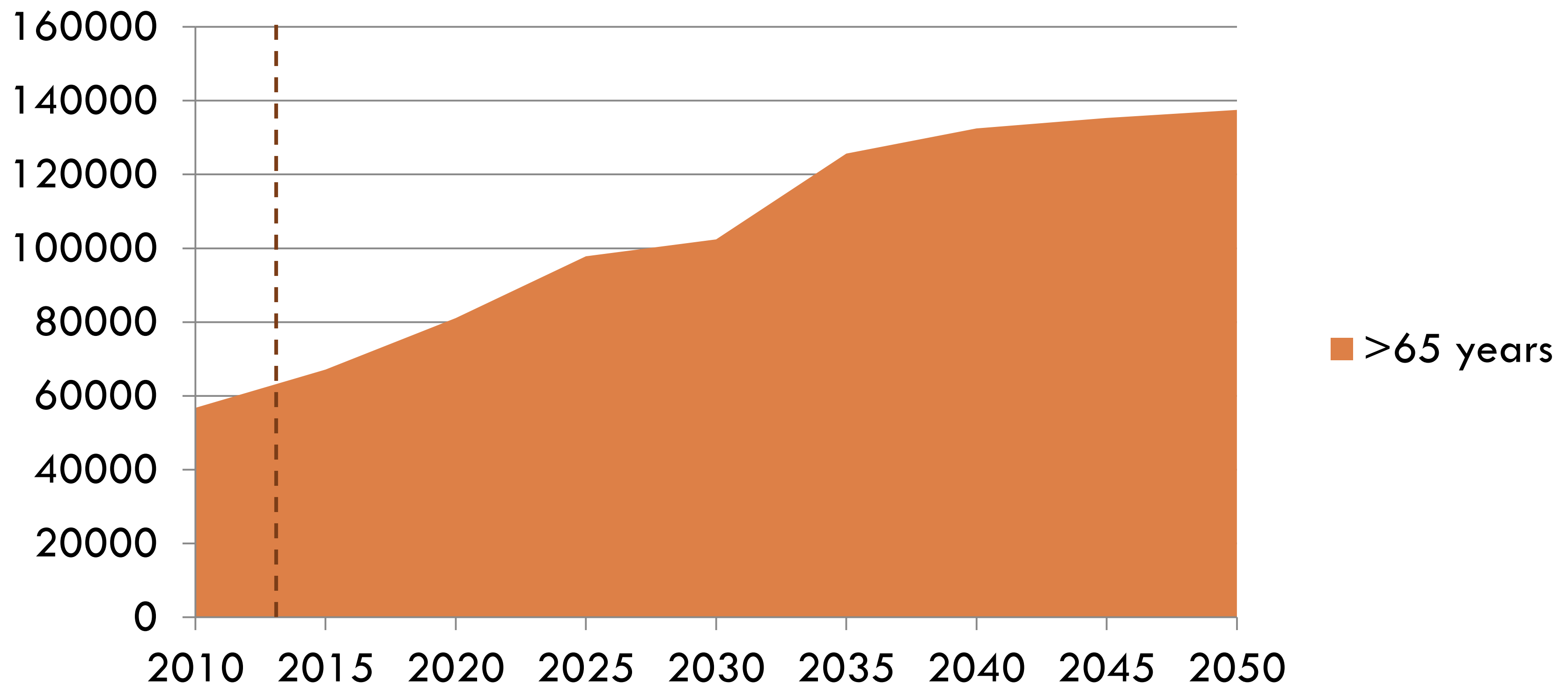
Demographic changes: Iceland



Source: Eurostat, European Commission

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Why is it important?

Pressure Ulcer Prevention – Zero Tolerance

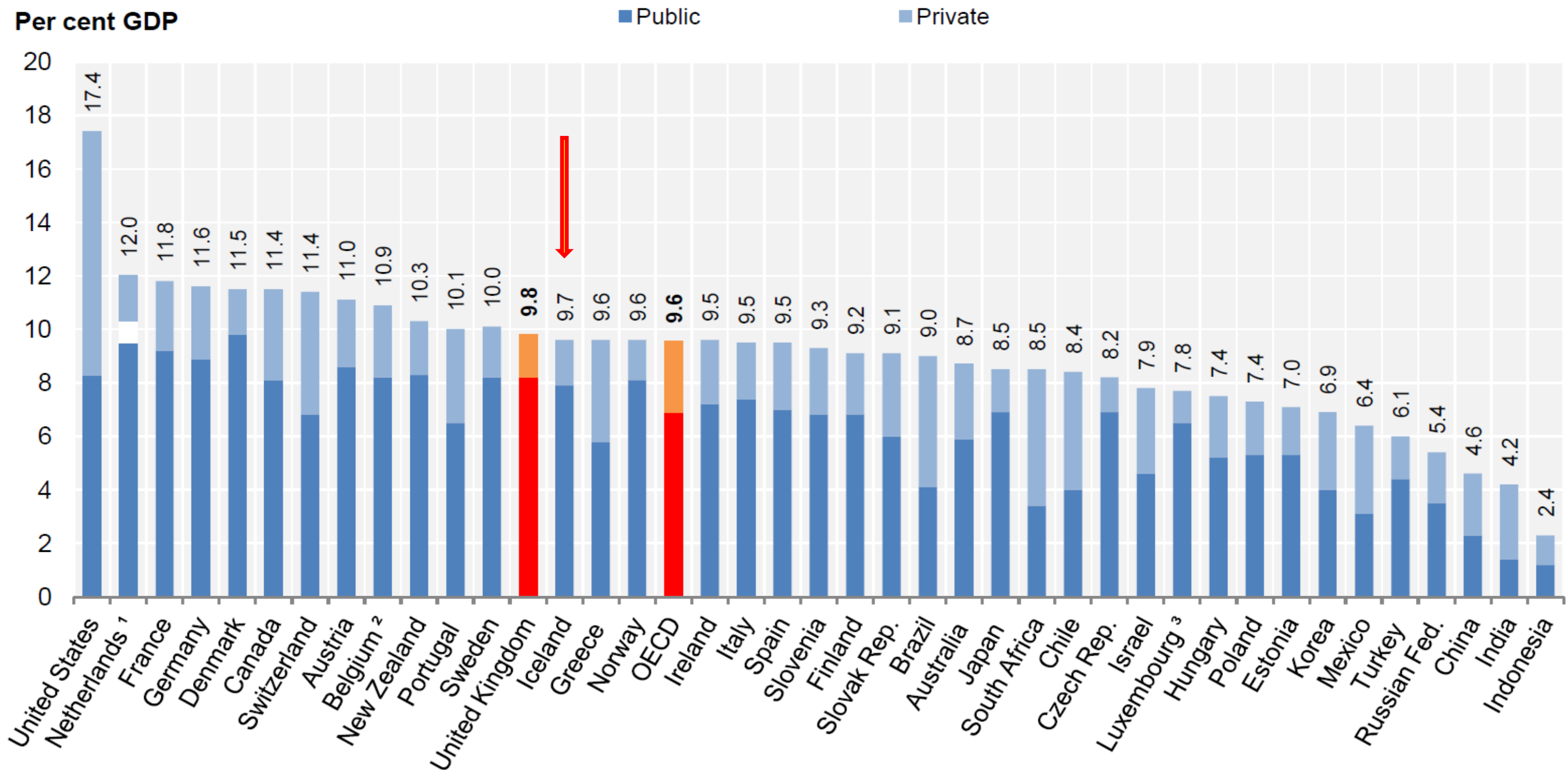
Pressure Ulcers

- Pressure ulcers are devastating
- Pressure ulcers can be life-threatening
- Pressure ulcers can be painful
- Pressure ulcers are expensive
- Pressure ulcers are (mostly) avoidable!

Pressure ulcers are life-threatening

Christopher Reeve (paraplegic actor) is thought to have died from sepsis following a pressure ulcer developing

Healthcare budgets are under pressure



Source: OECD http://www.oecd.org/health/healthataglance

Pressure Ulcers are expensive

Estimated cost of treatment

UK Department of Health Pressure Ulcer Productivity Tool

Grade	Median Cost (£)	Cost (ISK)
Grade 1	1,000	195,000
Grade 2	6,000	1,170,000
Grade 3	10,000	1,950,000
Grade 4	14,000	2,730,000

It is estimated that the UK spends £2.4 Billion (ISK 468 Billion) treating pressure ulcers each year!

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_116669

Pressure Ulcers: Avoidable expense

Audit of 1464 hospital in-patients in 2005

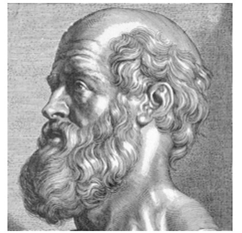
Audits of whole Health Board (2500 beds) in 2009 showed around 500 pressure ulcers a month

Category	Number of ulcers	Estimated cost of treatment (ISK)
1	184	35,880,000
2	60	70,200,000
3	44	85,800,000
4	35	95,550,000
Total	**329**	**287,430,000**

Recent prevalence audit in Landspitali Hospital estimated cost **49,920,000 ISK** to treat:

Cost estimated using Department of Health productivity tool
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_116669

Hippocratic Oath



"… I will keep them from harm and injustice…."

Every time a patient acquires a pressure ulcer whilst under our care we have failed to protect them from harm.
Prevention is a moral imperative

Citizens now expect this….. and lawyers too!

Why does it still happen?

Why does it still happen?

Do we know which patients are at risk of pressure ulceration?

Do we know how pressure ulcers develop?

Do we know how to prevent pressure ulcers?

Why does it still happen?

- Pressure ulcers have become so common that they are seen as an inevitable consequence of frailty, hospitalisation and institutional care
- Prevention is not thought possible with the rising number of older patients and reduced resources

Quality Improvement (QI)

- There is never a wrong time for Quality Improvement
- But… it is really important at the moment!

The First Law of Healthcare QI

- Every system is perfectly designed to get exactly the results that it gets …

- therefore, although not all change is improvement, all improvement is change

Don Berwick - Institute for Healthcare Improvement [www.ihi.org]

We need to do something different

We need to change the culture!

How to make sustainable change

The Model for Improvement (Deming)

The model for Improvement

Three key questions -

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

Associates for process Improvement [API] www.apiweb.org

Langley GJ *et al*. The improvement Guide- A practical guide to enhancing organisational performance, Jossey-Bass 1996

How will we know that a change is an improvement?

- Use a **measure** which is:
  - Well defined
  - Allows comparison between sites and over time
  - Already in use, if possible
- It may not be perfect and it may be difficult to collect. It needs to be **specific** enough and **sensitive** enough
- Try and find a measure which can be applied to a whole community, population or system

What change can we make that will result in improvement?

- Study the system
  - What is wrong now?
  - What will deliver the biggest benefit?
- Avoid making change for changes sake
- Focus on things which regularly cause problems
- Do not confuse "information on performance" (targets) with "information on improvement"(how the system is working)

How to introduce change

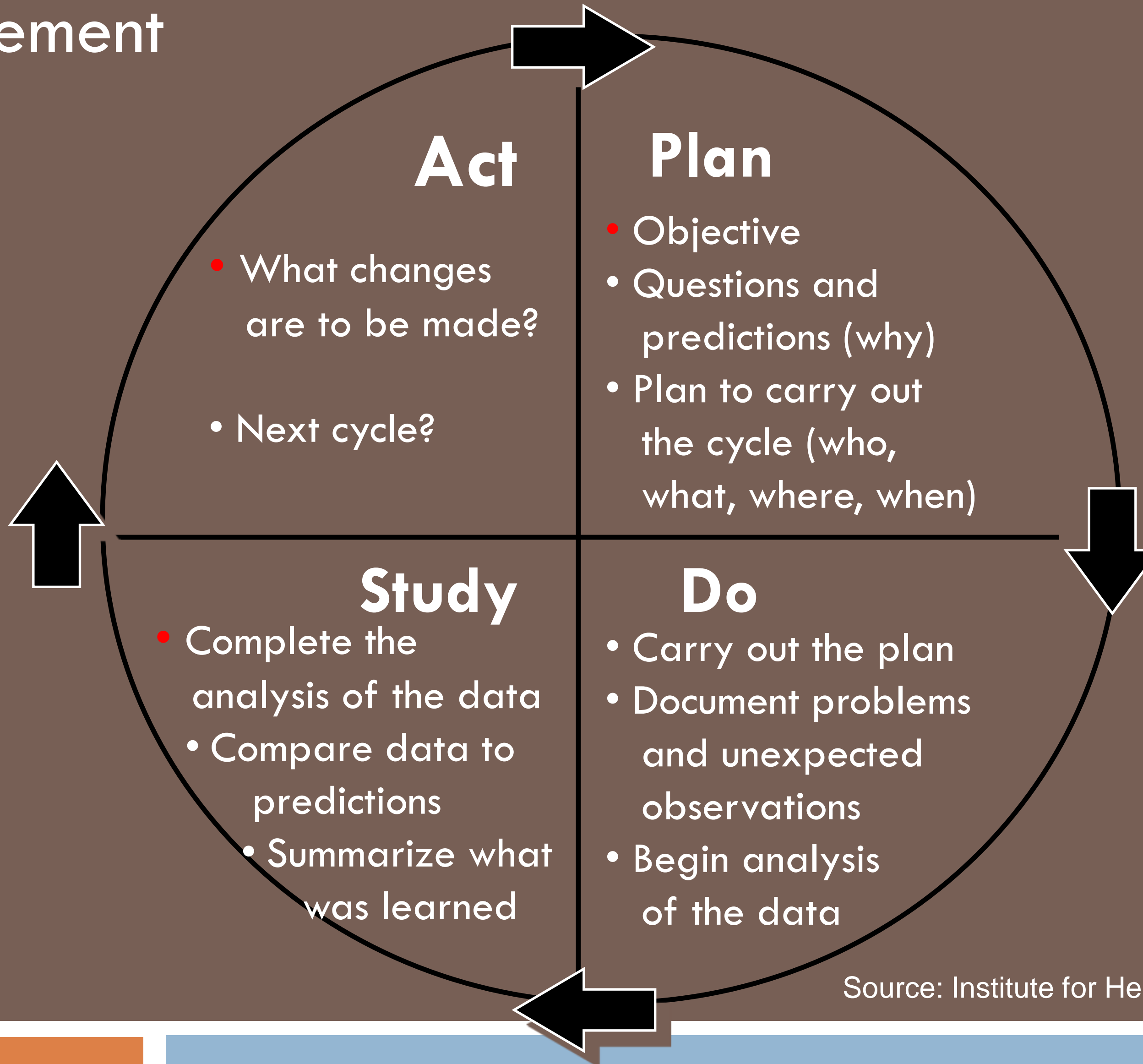
- Start small
  - One patient, one setting, one service provider
- Take time to do a small scale trial
- Test and retest using Plan, Do, Study, Act cycles [PDSA]
- Only when the change has been reliable for 90-95% of patients, consider **spread** to more sites

Use the PDSA Cycle to:

Answer the first two questions of the Model for Improvement

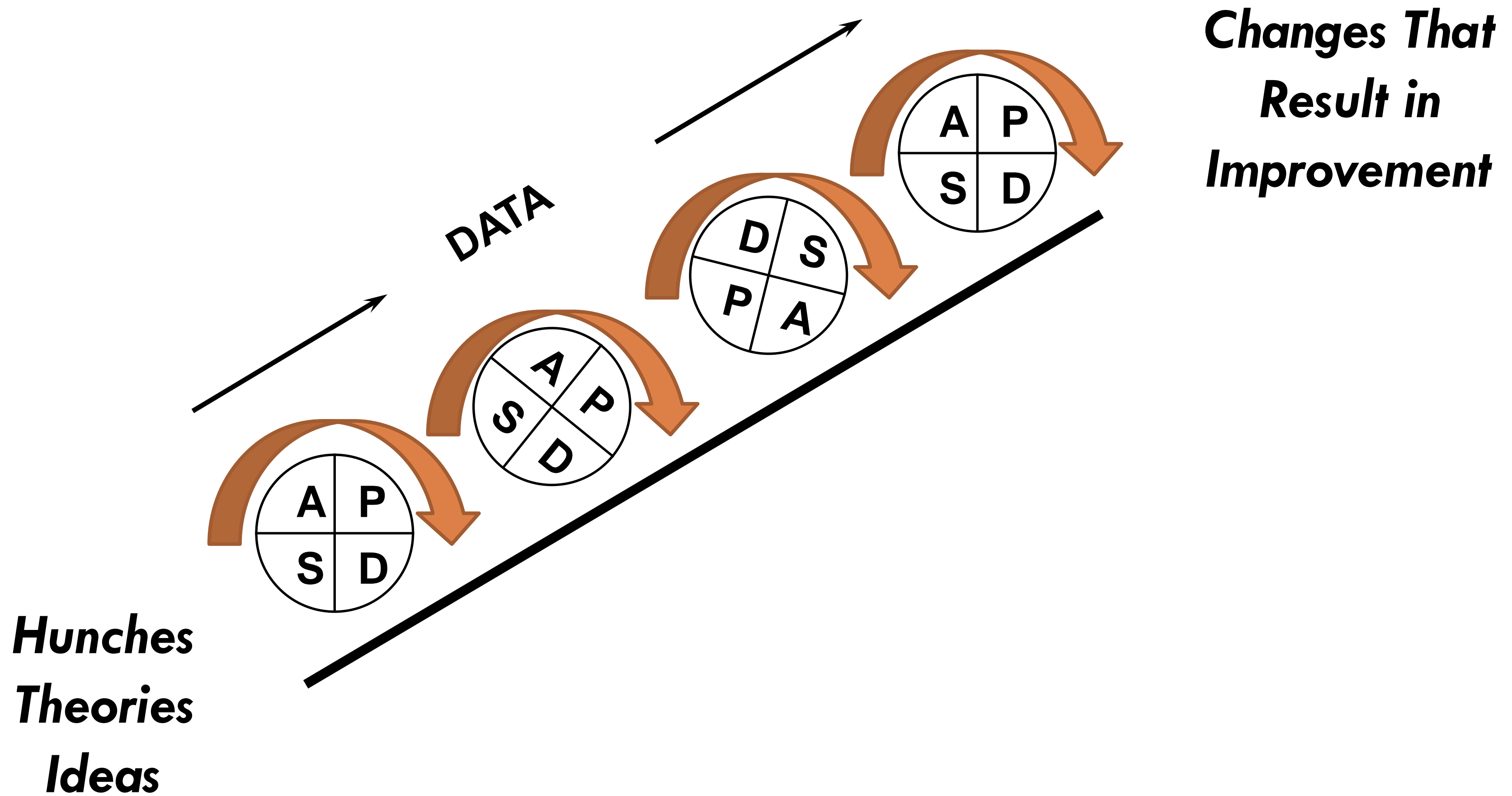
- Develop a change
- Test a change
- Implement a change

Testing using the PDSA Cycle for Learning and Improvement



Source: Institute for Healthcare Improvement

This is different! The Cycles Build on Each Other…



Care Bundles

- Groupings of best practices with respect to a disease process that individually improve care, but when applied together may result in substantially greater improvement.

- The science supporting each bundle component is sufficiently established to be considered the standard of care.

- The bundle approach to a small group of interventions promotes teamwork and collaboration.

Summary

- Pressure ulcers remain a problem in healthcare
- The way we have approached them has not been effective in preventing them
- We need a different way and we need to change the thinking
- The **model for improvement** is a proven tool: start with the aim, choose measures, run rapid PDSA cycles. Get people ENGAGED!

After lunch …

- Using the model for improvement to achieve “zero tolerance” of pressure ulcers in hospitals
- The SKIN bundle – explained
- Sustaining the improvement
- Transferring the learning to primary care
- Managing high risk patients/citizens

Leadership

***House** et al.* *(1999)*

" The ability of an individual to influence, motivate and enable others to contribute to the effectiveness and success of the organisation"

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Preventing Pressure ulcers

Zero tolerance: the practical steps

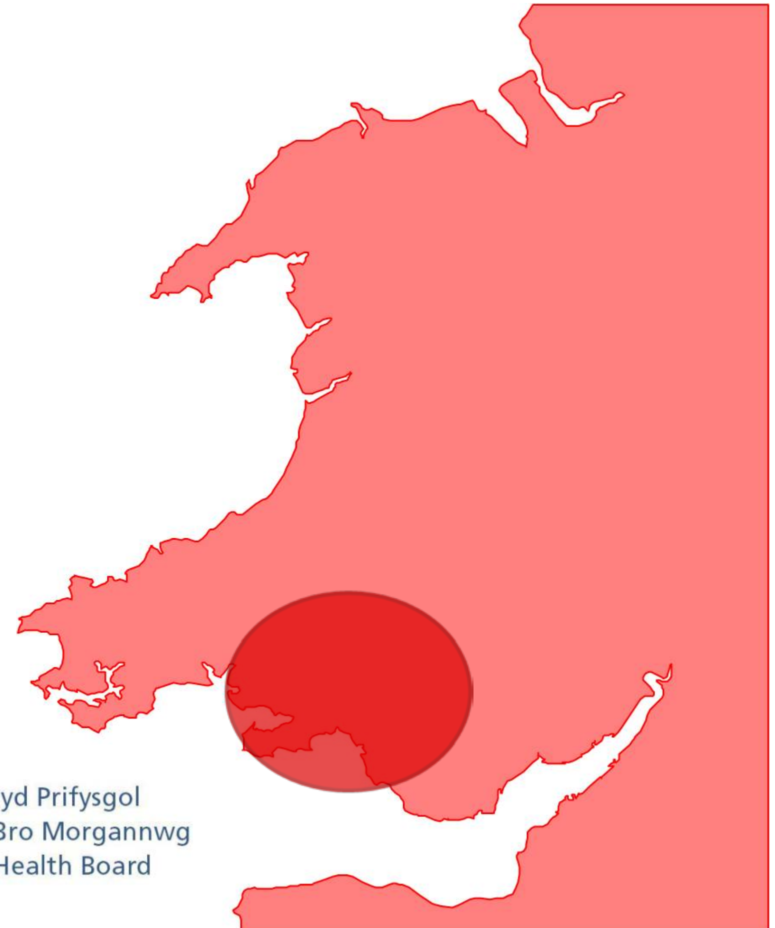
Wales UK

Wales

Population 2.9M

Capital City Cardiff

Devolved Government for Health and Social Care



GIG CYMRU NHS WALES

Bwrdd Iechyd Prifysgol Abertawe Bro Morgannwg University Health Board

ABM University Health Board, Wales

- Large organisation in South Wales, UK providing primary, community, secondary, palliative and mental healthcare for 600,000 people with 17,000 staff

- 4 acute hospitals with 92 wards and 2500 beds covering a wide range of specialities

- 77 community care and residential homes

The scale of the problem

2500 beds

500

Pressure ulcers every month (Category 1-4)

12% incidence rate

Applying this to preventing Pressure Ulcers

Pressure Ulcer Prevention – Zero Tolerance

Aim	Drivers	Interventions
Reduce the Percentage of Hospital acquired Pressure Ulcers(per 1000 patient days) By 50% by 2010	**Risk Identification**	Understand the risk factors for acquiring pressure ulcers Understand the local context & analyse local data to assess patients on ward/unit most at risk Utilise patient 'At risk' cards to quickly identify those at increased risk
	Risk Assessment	Assess pressure ulcer risk on admission for ALL patients Re-assess skin every 8 hours where necessary Initiate and maintain correct and suitable *preventative* measures
	Reliable Implementation of the "SKIN bundle" **[Ascension health 2004]**	Address these areas: **Surface** **Keep Moving** **Incontinence** **Nutrition**
	Identification, grading of pressure ulcers existing on admission /transfer & appropriate intervention	Initiate and maintain correct and suitable *treatment* measures Utilise the local Tissue Viability nursing expertise
	Education	Educate staff regarding the assessment process, identification and classification of, and treatment of pressure ulcers Educate Patients & family Develop patient information pack

"MEASURE"

Assessment

Two essential risk assessment tools:

- **Pressure ulcer risk score**
  - Waterlow™
  - Braden™
  - Professional judgement

Apply SKIN bundle if pressure ulcer risk identified (eg Waterlow score of 15 or above)

- **Nutritional status score**

The SKIN Bundle

A bundle of evidence-based interventions that are known to prevent pressure ulcers developing in patients "at risk"

- **S** The Surface the patient sits and lies upon
- **K** Keeping the patient moving (or turning)
- **I** Managing Incontinence and keeping skin dry
- **N** Ensuring the Nutritional state is assessed and managed

SKIN Bundle of care: implementation

Surface

- Mattress and Cushion
- Include safety checks
- Sheet – check for wrinkles etc.
- Reassess pressure ulcer risk score* at least daily

*: We use Waterlow™ scoring

Keep Moving

- Reposition patient
- Inspect skin
- Encourage mobility
- Written advice for patient and carers

SKIN Bundle of care: Implementation

Incontinence

- Toileting assistance
- Continence products
- Specialists
- Non oil-based creams with continence products
- Keep clean and dry

Nutrition

- Nutritional risk tool
- Follow instructions
- Ensure optimal intake
- Use of charts if required
- Keep well hydrated

© ABM UHB

Preparation phase

- Staff Briefing and brainstorm
- Develop 'SKIN Bundle' communication tool
- Agree metrics and start to measure baseline
- Educate staff with Tissue Viability Nurse [TVN] support
- Ensure Pressure Ulcer prevention is given high priority e.g. team briefing, posters, visual cues
- Develop patient information leaflets
- Patient involvement is essential

Pilot 'SKIN Bundle'

- Deming's PDSA methodology commenced with small client group: "Model for Improvement"
- Addressed risk scoring documentation
  - set 100% compliance, daily review
- Audit of SKIN bundle communication tool – daily

SKIN Bundle communication tool

SKIN Bundle Communication Tool for Pressure Ulcer Prevention												
Patient Name:	Mr Dylan Thomas											
Date	25May 2010						26 May 2010					
	Mdnt	4am	8am	noon	4pm	8pm	Mdnt	4am	8am	noon	4pm	8pm
SURFACE												
1. Therapulse	✓											
2. RoHo cushion	✓											
KEEP MOVING												
1. Skin assessed												
-Right side	✓											
-Left side	✓											
INCONTINENCE												
1. Catheter patent	✓											
2. Clean and dry	✓											
NUTRITION												
1. Protein drinks	✓											
2. Fluid balance	✓											
WATERLOW	18											

SURFACE	Therapulse bed 2 minute pulse: RoHo for the chair
KEEP MOVING	Pressure areas to be assessed am, pm and night and after return to bed from chair
INCONTINENCE	Catheter patency, record bowel action and ensure patient is kept clean and dry
NUTRITION	Dietician referral, protein drinks x3 per day and maintain fluid balance chart
WATERLOW	Daily or more frequently if dependency increases

Outcome measures [Metrics]

- % Reliability of PU risk and nutritional status scoring
- Document pressure sores of all grades (1 – 4) on Safety Cross if they occur
- Count "days since last pressure ulcer developed on this ward" and display on Safety Cross
- Incident form for any sore grade 2 and above
- Calculate rate per 1000 bed-days

Safety Cross

Ward B-2
October 2013

1 2
3 4
5 6
7 8 9 10 11 12
13 14 15 16 17 18
19 20 21 22 23 24
25 26
27 28
29 30 31

No new PU	
Ward acquired PU	
Patient admitted with PU	

Days since last Pressure ulcer

192 days

Initial outcomes: Index ward

- Full compliance with risk score: 100%
- Managing the risk score consistently
- SKIN Bundle communication tool used with patient involvement
- Use of written patient information and education leaflets

Project started April 28th 2008

No new pressure ulcers of any grade developed on the ward for **638**days
= 12,760 patient bed-days

Pressure Ulcer occurred on January 25th 2010!

Incident

- Grade 2 Pressure Ulcer on heel
- Incident form completed
- Outcome – Pressure Ulcer had healed within 4 days

Root cause analysis

- Was patient assessed properly?
- Had assessment plan been maintained?
- Could something have been done differently?

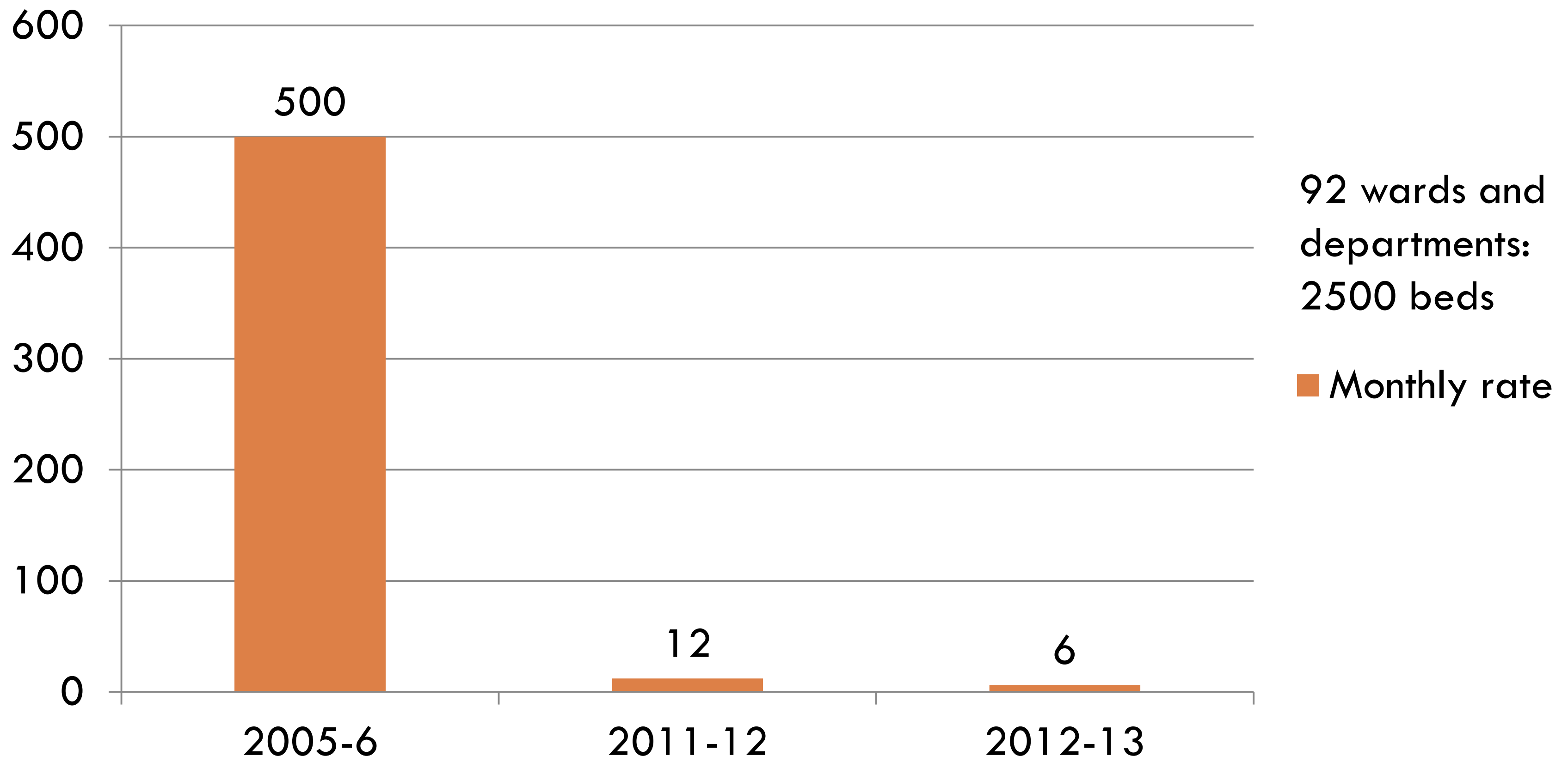
Since 26th January 2010

- No further pressure ulcers
- Just one pressure ulcer in 5 ½ years

Spreading the intervention

- Successful spread to all inpatient wards (92 wards =2500 beds) in four acute hospitals and all community hospitals across since April 2010
- Further PDSA's on each ward to encourage ownership by the staff: local modifications allowed
- We continue to monitor the ward "metrics"
- Since June 2012, spread to 77 community care homes and primary care teams
- Further spread across the whole of Wales

Hospital acquired pressure ulcers*



*category 1-4

Hospital results so far

- One ward: over five years without a pressure ulcer (female orthopaedic trauma)
- Nine wards over three years without a pressure ulcer
- Two hospices without a pressure ulcer for one year
- One hospital without a pressure ulcer for six months

Keys factors – to success

- Communication tool – patient partnership
- Staff education and engagement – all staff groups "Model for Improvement"
- Create a "Culture of Change"
- Risk scoring and managing those scores
- Tissue Viability Nursing support
- Clear executive engagement

Key challenges

- Ward management focus and staff "buy-in"
- Equipment issues
- Maintaining momentum
- Managed roll out
- Publicity / communications

Primary care

Spreading the learning to primary and community settings

Our approach

- Confirm that there is a problem with commissioners of primary care and the providers
- Agree the measures that will be used and reporting (continuous audit of compliance)
- Meet care home managers, staff and carers : introduce programme and implementation plan

Our approach

- Review all existing documentation – look for care elements that are already in place
  - Pressure ulcer risk assessment, skin assessment, repositioning charts, nutritional assessments, incontinence
- Link to any national or corporate policies
- Send copies of safety cross, risk triggers, SKIN bundle as well as posters and information sheets
- Develop training materials and arrange training sessions

Training

- 2 hour sessions (2 per home) to cover:
  - Assessing risk
  - Skin assessment
  - Minimising pressure through repositioning
  - Equipment choice and postural management
  - Managing moisture (incontinence and skin care)
  - Importance of nutrition and hydration
  - Overview of pressure ulcer programme

Delivering the training

- **Direct training provided by us**
  - Community nursing teams
  - Nurse assessors (who inspect care homes)
- **"Train the trainers" (cascade training)**
  - We train nominated staff from the care homes
  - They are responsible for training their colleagues
  - Supported by online video
  - Ongoing telephone advice and support
  - Self assessment questionnaires

Challenges

- Unskilled workforce in care homes
- Educational ability
- Need to modify risk assessment ("triggers list")
- Resources to provide training
- Time to release care home and community nursing staff (1 person per 10 beds in care homes)
- Poor reporting before the programme started

Community Homes: Triggers

SKIN Bundle to be used for all residents who have:

- **Reduced mobility**
  - Unable to walk beyond approximately 5 metres even with assistance. Essentially restricted to wheelchair/armchair/bed.

SKIN bundle to be used for 2 weeks and then reviewed for any resident with:

- **Reduced appetite**
  - Poor appetite: leaves most meals and drinks offered. Unintentional weight loss of 6 kg over 6 months. Contact Primary care physician (GP) and community dietician
- **Skin assessment**
  - Skin noted to be reddening/broken. Contact District Nursing Team for advice
- **Change of health status**
  - Generally unwell for more than 24 hours with reduced mobility and/or reduced appetite.
- **Change of care setting**
  - New resident or resident returning from hospital admission.

Measures and audit

Measures

- Number and grade of pressure ulcers
- "Days since……"

Audits (utilise existing processes)

- Audit of documentation
- 4 monthly prevalence audit
- Audit of reported pressure ulcers
- Audit of training (% staff who have been trained)

Early results

- Enthusiastic involvement by primary care
- Good uptake of training and well evaluated
- 90% of care homes following the elements of pressure ulcer prevention
- Not always in a co-ordinated way
- Significant improvement in communication within and betweens sectors
- 50% reduction in pressure ulcer incidence but still some category 3-4 ulcers occurring

High risk patients

How to prevent pressure ulcers and manage them if they develop

Managing high risk patients

Wheelchair bound, neurological conditions, immobility

Prevention and treatment

- Specialised team (PUPIS)
  - Wound care specialist
  - Seating specialist (rehabilitation engineer)
- Detailed assessment in the residential setting, including a review of equipment
- Pressure mapping technology

Typical patient

- Severe rheumatoid arthritis, frail. Lived at home.

Conclusions

- It <u>is</u> possible to translate evidence-based knowledge into clinical practice in a sustained and effective way
- Zero tolerance is a realistic objective for hospital acquired pressure ulcers
- Significant reductions can be achieved in primary care: we are aiming for zero tolerance but have not got there yet

ANY QUESTIONS?

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