

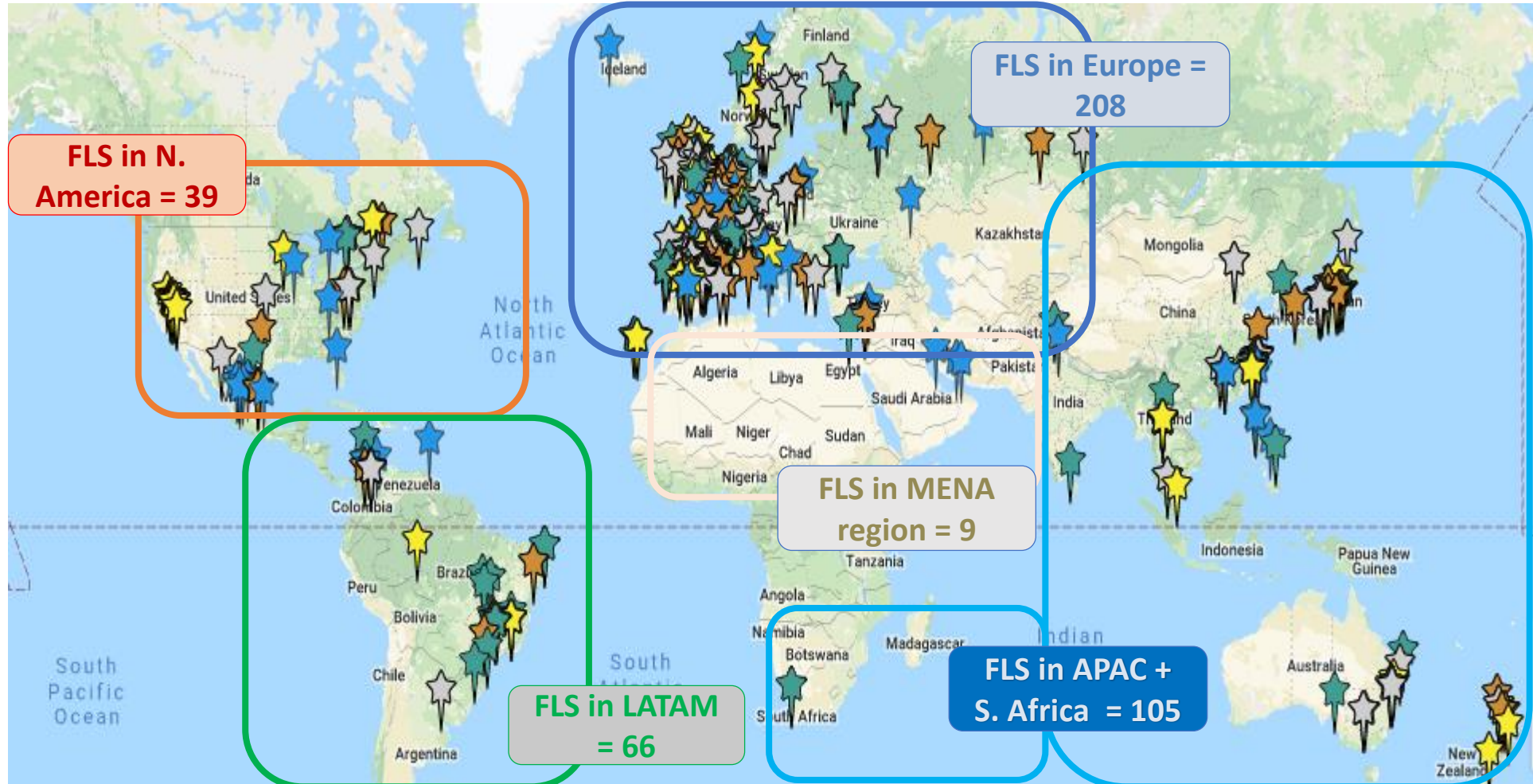
Development of patient level outcomes: KPIs for FLSs for the IOF

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Serge Ferrari – Professor of Medicine Geneva University Hospital



427 FLS, 46 countries, 6 continents



June 15, 2020

How to get mapped - The Process

Step 1

FLS submits online application



Step 2

FLS marked in green on the map while being reviewed



Step 3

BPF achievement level assigned

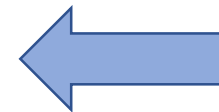


Step 4

FLS is scored and recognized on the map



<https://youtu.be/gpAAvvukjQw>



VIDEO!

BEST PRACTICE FRAMEWORK

HEALTH CARE QUALITY

AIM:

1. **Set the standard for FLS (13 criteria)**
2. **Guidance**
3. **Benchmarking and Quality improvement**

➤ Available in 11 different languages

DOWNLOAD THE BPF

Download the Capture the Fracture Best Practice Framework in the following languages:

- Chinese (traditional)
- Chinese (simplified)
- English
- French
- German
- Italian
- Japanese
- Russian
- Slovak
- Spanish
- Polish



IOF
CAPTURE *the*
FRACTURE

PROTOCOLO ASISTENCIAL DE EXCELENCIA
para UNIDADES DE FRACTURA

Establecimiento de un estándar

Diversos estudios han demostrado que el modelo de Unidades de Coordinación de Fracturas (Fracture Liason Services) es el más coste-efectivo para la prevención secundaria de fracturas. Este abordaje sistemático, centrado en la figura de un coordinador de fracturas, puede resultar en un menor número de las mismas, ahorro en costes para el sistema sanitario y mejoras en la calidad de vida de los pacientes.

13 Criteria and Standards

1. Patient Identification

2. Patient Evaluation

3. Post Fracture Assessment Timing

4. Vertebral Fracture (VF) ID

5. Assessment Guidelines

6. Secondary Causes of OP

7. Falls Prevention Services

8. Multifaceted Assessment

9. Medication Initiation

10. Medication Review

11. Communication Strategy

12. Long-term Management

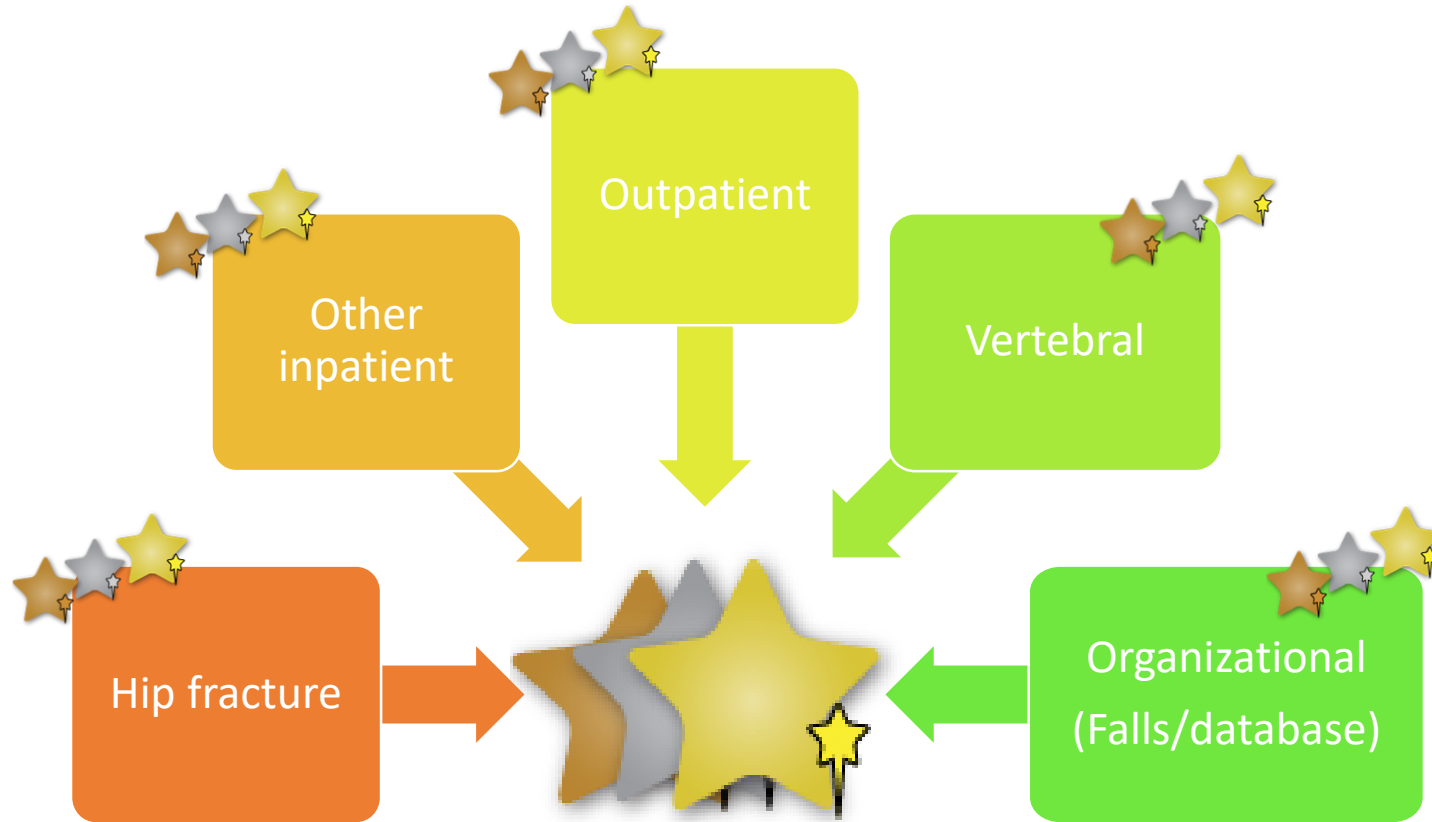
13. Database

Standard 1 definition:

Fracture patients are identified to enable delivery of secondary fracture prevention

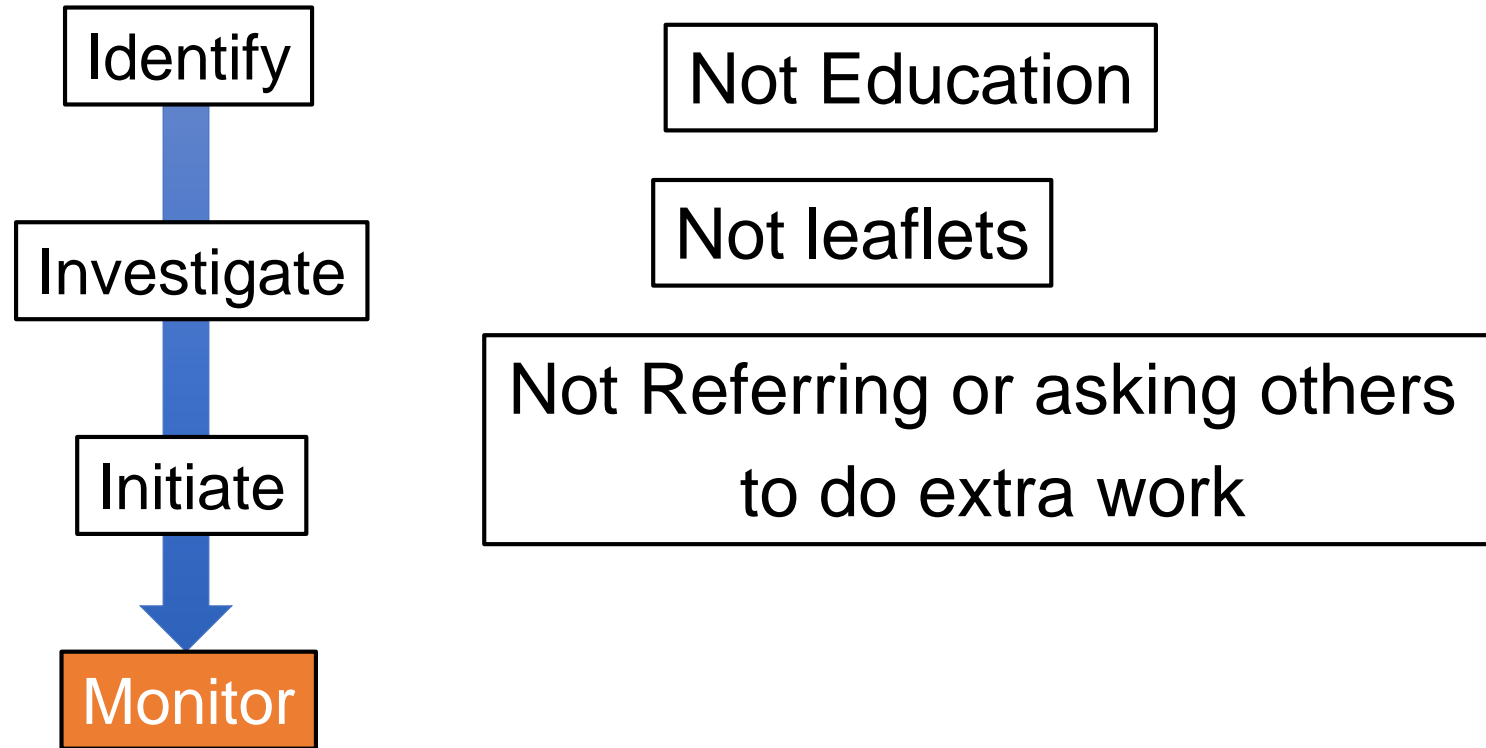
Standard	Bronze	Silver	Gold
Patient Identification	Patients identified, <i>not</i> tracked	Patients identified, <i>are</i> tracked	Patients identified, tracked & <i>independently reviewed</i>

SCORING: 5 domains



The FLS should be effective at organisational level

Fracture Liaison Services



Not every FLS is automatically effective



Berwick: triple aim

1. Be Effective
2. Be Efficient
3. Deliver Patient Experience

The FLS should be effective at organisational level (BPF)

Is it effective at patient level? (KPI)

Key performance indicators at patient level

- Show the current performance for key FLS steps
- Prioritise what to improve
- Understand how to improve

Question:

- The obvious KPI for an FLS is re-fracture rates is it ?

Key performance indicators

- Meaningful
- Measurable

- ~~Fracture rates~~
- ~~Re-fracture rates~~

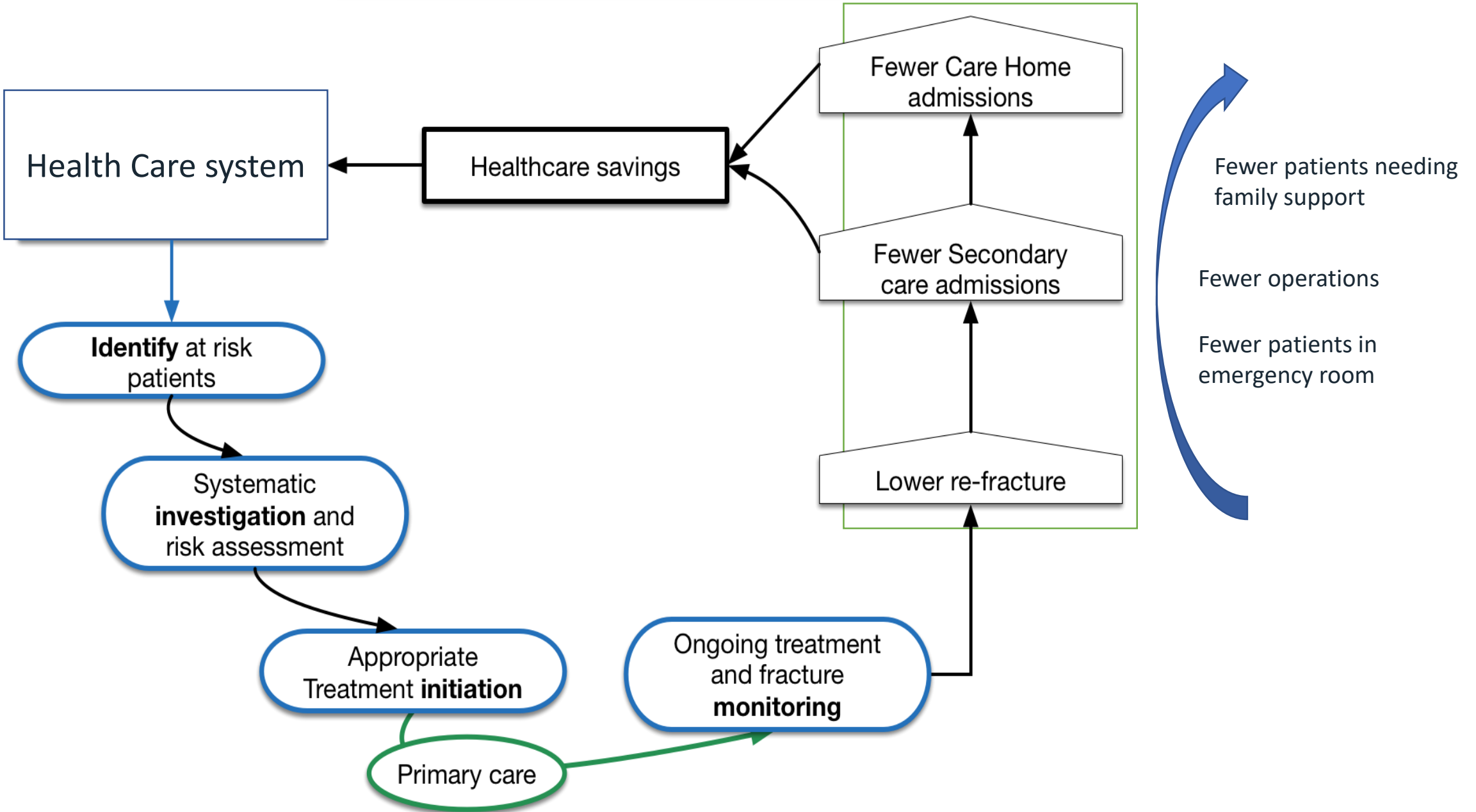
- Number and % on anti-osteoporosis medication at 4 and 12 months

.....from date fracture diagnosed in healthcare system

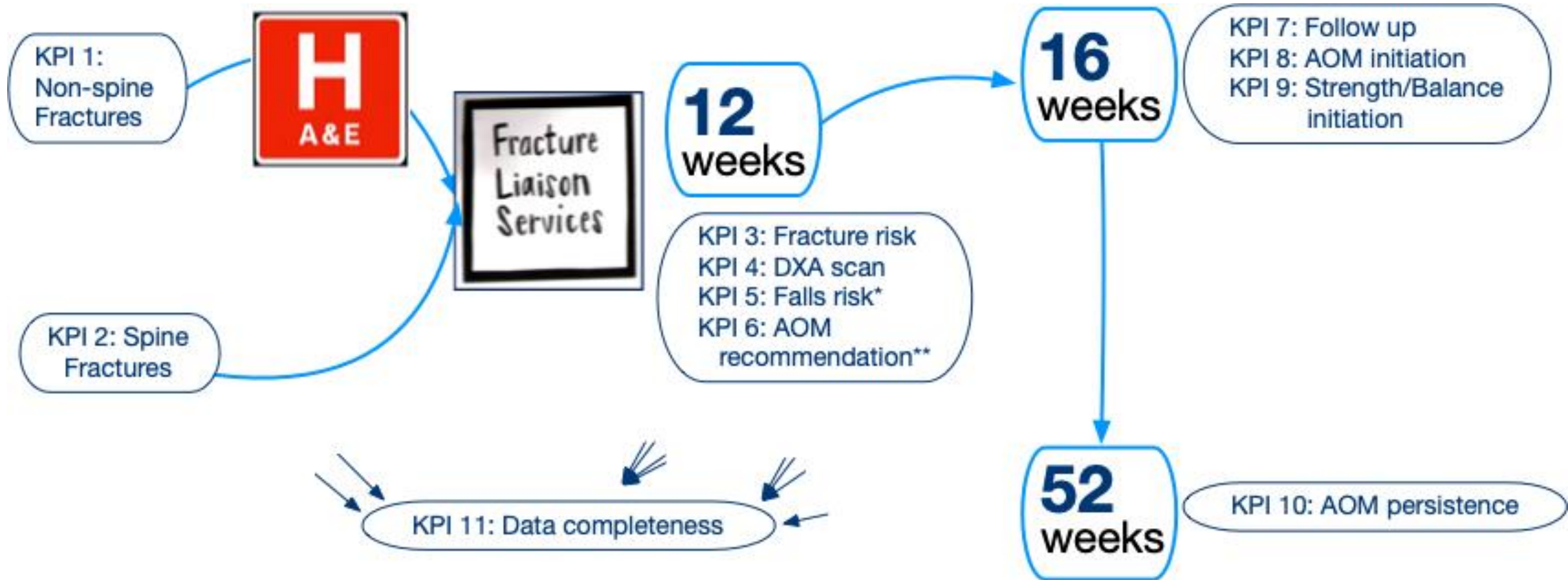
KPI

- WHY we need KPI
- HOW the KPI work
- What is the next step

FLS = Complex clinical pathway



How to measure if an FLS is working?



Question:

- So if an FLS captures only hip fractures, KPI 1 would necessarily be 20% at best ? What is the message here ?



Number of Index spine fractures submitted

Local Hip fracture admissions

Require different pathway
Clinical vs. Reported vs. Opportunistic radiological
Local audit, Population data, Hip fracture admissions
Will be high in year 1 then reduce
75% of hip fractures

Question:

- In my hospital where there is a vertebral FLS based on systematic reviews of chest X-rays, the number of prevalent vert fractures detected after age 50 is greater than the No of hip fractures admissions, so a ratio > 1 😊 . Is that good or an artefact ?

fracture diagnosis to assessment less than 12 weeks

All submitted patients



Imminent fracture risk is high
Upto 50% of re-fractures within 2 years

fracture diagnosis to DXA less than 12 weeks

All submitted patients



Does every patient need a DXA to start therapy
Over 75 yr
Over 65 with hip or spine
FRAX

Question:

- This criteria depends more on the availability of DXA in a certain hospital / region, than on the effectiveness of the FLS itself is it ?

Falls assessment

All submitted patients



Falls risk

Falls cause

Local/ regional/ national recommendations

Question:

- Falls assessment goes from simple falls risk questionnaires to complex instrumental evaluations. What is the minimum standard evaluation here ?

Recommended Anti-osteoporosis Medication

All submitted patients

Calcium and vitamin D therapy alone is not enough



Question:

- For some patients treatment recommendation may be that treatment is NOT recommended...yet that recommendation wouldn't be taken into account here. Why ?

Recorded monitoring within 16 weeks of fracture

All patients recommended anti-osteoporosis therapy

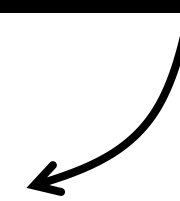
2018 Calendar Template © calendartemplates.com

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	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			
Jan 01: New Year's Day Jan 15: Martin Luther King Day						

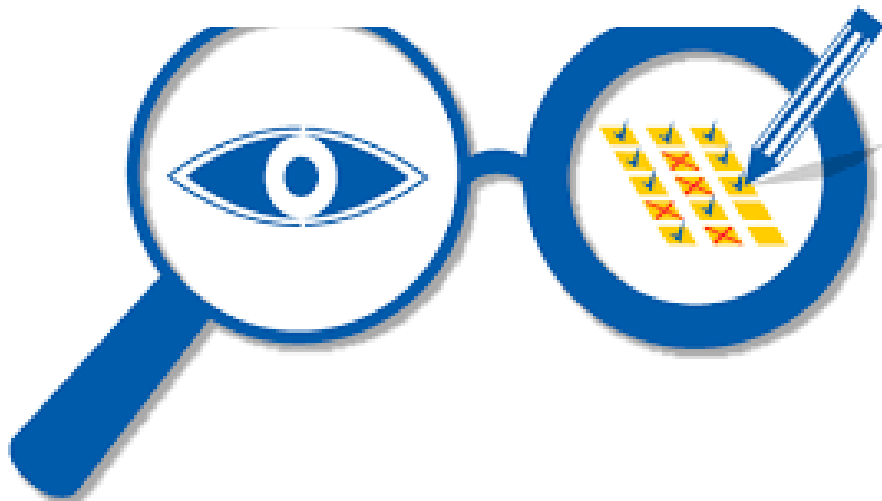
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25	26	27	28			
Feb 14: Valentine's Day Feb 18: President's Day						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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11	12	13	14	15	16	17
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Mar 30: Good Friday						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					
Apr 01: Easter Sunday						



Low adherence – initiation of recommendations
Imminent risk of fracture is high



Question:

- What do you recommend for monitoring ? Patients call ? Doctor ?
What should be monitored ?...

STRENGTH & BALANCE



Strength
Flexibility
Balance
Confidence

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12.30 - 1.30 pm
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Please call to book your place

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Strength/ balance started by 16wk post fracture

KPI 8

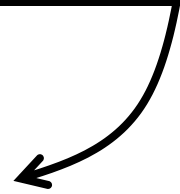
All patients recommended anti-osteoporosis therapy

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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Jan 01: New Year's Day Jan 15: M.L. King Day						

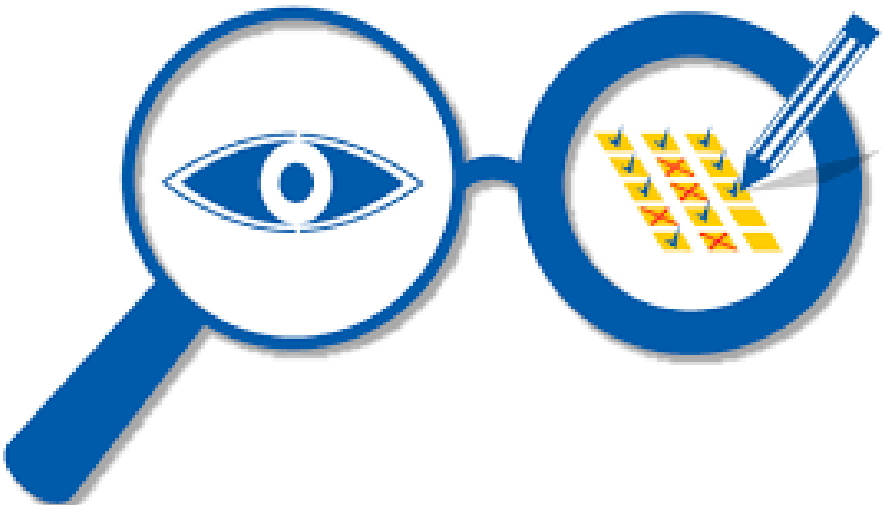
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25	26	27	28			
Feb 01: Valentine's Day Feb 15: President Day						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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Mar 30: Good Friday						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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29	30					
Apr 01: Easter Sunday						



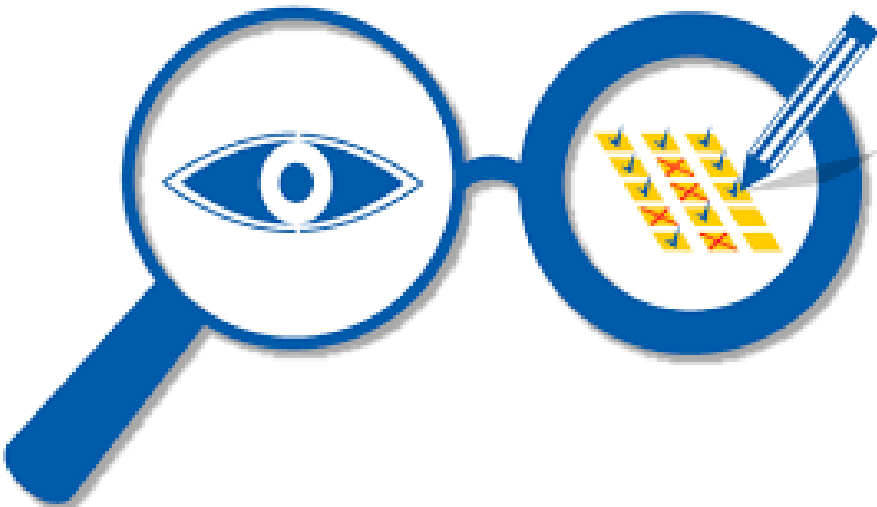
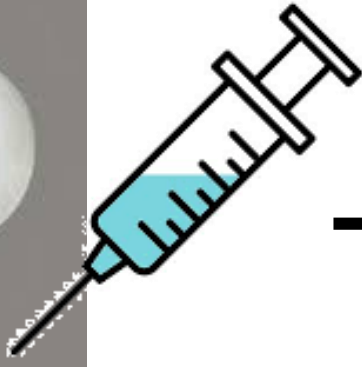
Evidence based exercise is needed
May exclude hip fracture patients
Restrict to those aged 75+ years



Anti-osteoporosis medication started by 16wk post fracture

All patients recommended anti-osteoporosis therapy

Re-fracture risk high
Oral therapy take time to reduce fracture risk



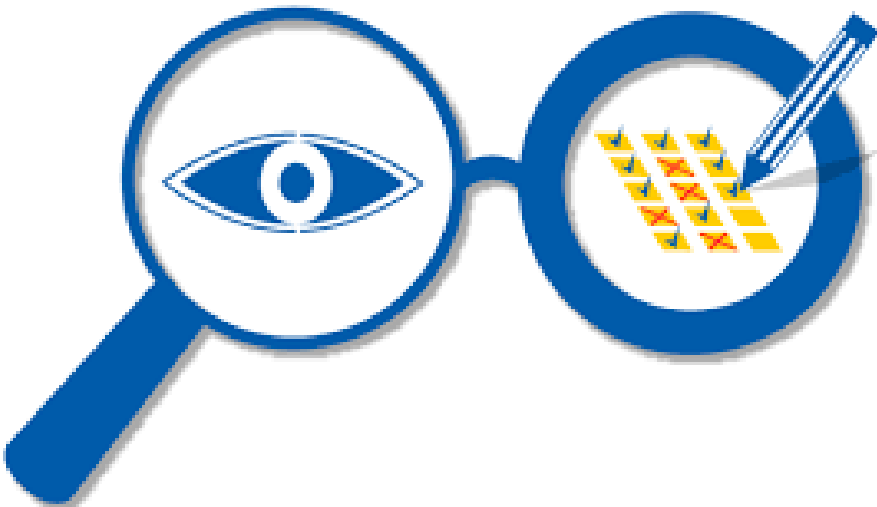
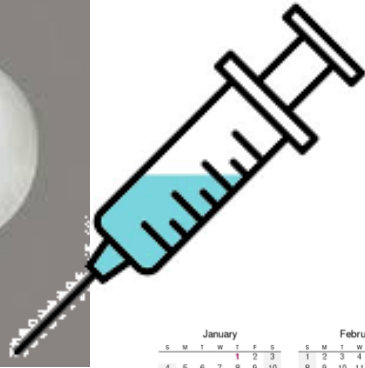
Question:

- Why not recommend medication started, at least prescribed, before discharge ? (as we know recommendations to treating physicians, GPs are not effective)

Anti-osteoporosis medication 52wk post fracture

All patients recommended
anti-osteoporosis therapy

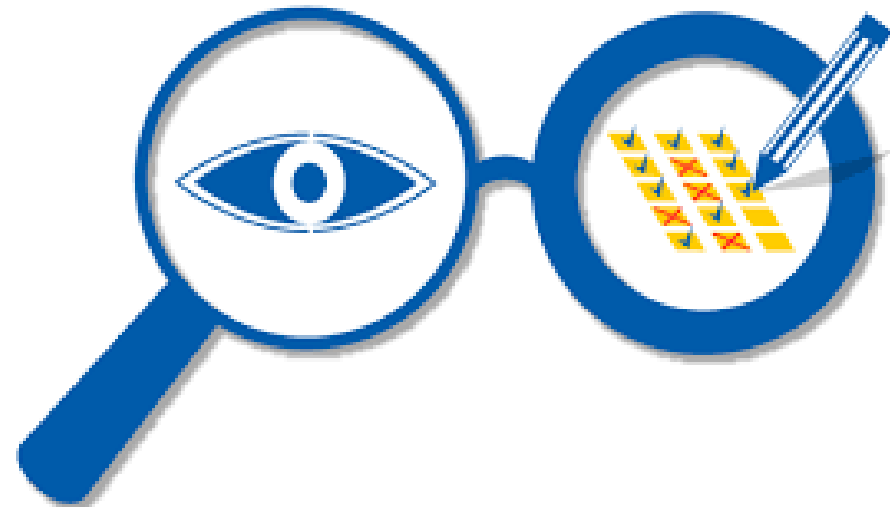
Measuring adherence is challenging in real world setting
Includes patient report, prescription, clinical review



Number of KPI with >80% complete data

10 KPI

Without good quality data, benchmarking is pointless



Indicator Standards: nothing is 100%

- < 50%



- 50-80%



- >80%



AN FLS needs to achieve
this level to be
effective

Question:

- Without an FLS the criteria of effectiveness above will reach about 0%...so why say that effective is $> 80\%$? Would 30% or 50% not be already better than nothing ?

FLS Name	Number of cases submitted	Number of fields (out of 29) with 0% or greater missing data - n	Hip as a certainment - %	Non-hip as a certainment - %	Within 30 days diagnosis is - %	Within 30 days diagnosis is (to XA) - %	Bone therapy missing - %	Falls assessment done or referred - %	Patients followed up at 90 days - %	Patients followed up at 180 days - %
Barnet Hospital Fracture Liaison Service	156									
Bromley Health care Falls and Fracture Prevention Service	283									
Broomfield Hospital	382									
Dorset County Hospital	536									
East Lancashire Hospitals NHS Trust	273									
East Surrey Hospital	233									
FLS West Berkshire	358									
Guys and St Thomas' NHS Foundation Trust	284									
King's College Hospital - Denmark Hill Site	79									
Medway NHS Foundation Trust	436									
Milton Keynes University Hospital Foundation Trust	134									
Musgrove Park Hospital	811									
North Bristol NHS Trust	1,111									
North Tees and Hartlepool NHS Foundation Trust	553									
Nottingham University Hospitals	1,250									
Oxfordshire Fracture Prevention Service	1,210									
Peterborough and Stamford Hospitals NHS Foundation Trust	260									
Poole General Hospital	69									
Ports mouth and South East Hampshire	936									
Queen Elizabeth Hospital, Woolwich	109									
Royal Surrey County Hospital	251									
Royal Wolverhampton Hospital NHS Trust	285									
Sandwell and West Birmingham Hospitals NHS Trust	86									
St George's Hospital	725									
Sunderland Royal Hospital	584									
The Haywood Hospital, Burslem Stoke-on-Trent	644									
The Hillingdon Hospitals NHS Foundation Trust	110									
The Ipswich Hospital NHS Trust	944									
The Rotherham NHS Foundation Trust	109									
United Lincolnshire Trust	1,218									
University Hospital Lewisham	191									
University Hospital Llandough	344									
University Hospital of North Durham and Darlington	835									
Memorial Hospital	643									
University Hospitals Birmingham NHS Foundation Trust	679									
University Hospitals Bristol NHS Foundation Trust	219									
West Suffolk Fracture Liaison Service	231									
Wye Valley NHS Trust	795									
Yeovil Hospital	18,356									
Overall (Average)	6	-	35.6	45.5	66.9	46.5	33.2	32.3	36.4	

I have an FLS commissioned and it is working well
Do we need to audit?

- > 80% > Effective/ Maintain
- > 50 - 80% > Keep Improving
- < 50 % > Priority

FLS name	Number of cases submitted	Number of fields (out of 29) with 20% or greater missing data – n	Hip case ascertainment – %	Non-hip case ascertainment – %	Within 90 days (diagnosis to assessment) – %	Within 90 days (diagnosis to DXA) – %	Bone therapy missing – %	Falls assessment done or referred – %	Patients followed up (of those prescribed bone therapy or referred for further clinical opinion/GP) – %
Barnet Hospital Fracture Liaison Service	156	3	*	17.8	93.6	77.1	20.5	91.7	83.3
Bromley Healthcare Falls and Fracture Prevention Service	283	2	6.9	38.7	100	92.4	31.1	100	78.2
Broomfield Hospital	382	9	27.5	30.9	93.7	15.9	5	1.6	0
Dorset County Hospital	536	20	81.3	59.8	90.9	63	36.2	0.9	0
East Lancashire Hospitals NHS Trust	273	3	*	26.3	96	72.5	33.3	8.4	62.5
East Surrey Hospital	233	2	*	22.6	5.2	6.1	*	99.6	0
FLS West Berkshire	358	3	5.1	43.8	96.6	81.2	*	18.2	63.1
Guys and St Thomas' NHS Foundation Trust	284	21	15.0	62.4	4.9	*	98.7	9.5	0
King's College Hospital – Denmark Hill site	79	7	*	24.3	98.7	*	100	2.5	0
Medway NHS Foundation Trust	436	12	59.0	53.2	0	*	70.9	0.9	2.2
Milton Keynes University Hospital Foundation Trust	134	12	6.0	22.2	95.5	34.1	44	47	60
Musgrove Park Hospital	811	0	106.5	74.8	77.2	80.5	3.3	65.8	73.7
North Bristol NHS Trust	1,111	9	94.3	81.5	74.9	57.9	2.3	55.1	49.3
North Tees and Hartlepool NHS Foundation Trust	553	9	52.9	53.4	99.8	53.3	14.5	53.9	0
Nottingham University Hospitals	1,250	11	77.2	63.6	99.4	0	82.2	33	0
Oxfordshire Fracture Prevention Service	1,210	7	54.7	70.7	73.8	53.7	0.8	24.9	26.9
Peterborough and Stamford Hospitals NHS Foundation Trust	260	2	5.6	28.5	92.3	67.8	100	95.8	0
Poole General Hospital	69	15	*	3.5	0	0	95.8	40.6	0
Portsmouth and Southeast Hampshire	936	16	11.9	57.0	91.1	72.5	1.6	0.2	0
Queen Elizabeth Hospital, Woolwich	109	7	7.1	13.8	*	0	0	1.8	5.3
Royal Surrey County Hospital	251	1	7.9	38.7	92.8	74.3	13.9	93.2	59.6
Royal Wolverhampton Hospital NHS Trust	285	16	7.8	26.9	96.1	*	60.7	1.1	0
Sandwell and West Birmingham Hospitals NHS Trust	86	11	2.6	1.2	51.2	18.5	69.8	90.7	0
St George's Hospital	725	15	127.0	131.3	43.7	68.7	51.6	46.9	15.7
Sunderland Royal Hospital	584	2	63.6	49.2	99.1	56.6	90.5	67	30.2
The Haywood Hospital Burslem Stoke-on-Trent	644	0	15.8	38.8	84	83.6	15.1	2.6	45.5
The Hillingdon Hospitals NHS Foundation Trust	110	0	5.0	24.8	90.9	70.8	0	5.5	50
The Ipswich Hospital NHS Trust	944	14	87.2	80.7	35.2	25.9	10.9	52.1	19.3
The Rotherham NHS Foundation Trust	109	8	*	20.6	86.2	86.1	31.8	16.5	0
United Lincolnshire Trust	1,218	13	56.1	63.0	0	86.8	0	0	0
University Hospital Lewisham	191	11	43.2	52.0	74.3	74.5	27.7	31.9	36
University Hospital Llandough	344	10	2.4	32.2	86.6	*	18.9	3.5	13.2
University Hospital of North Durham and Darlington Memorial Hospital	835	14	47.4	46.4	76.2	43.1	22.2	2.2	48.1
University Hospitals Birmingham NHS Foundation Trust	643	4	45.4	58.3	72.3	21.3	20.3	57.4	68.1
University Hospitals Bristol NHS Foundation Trust	679	12	100.6	81.1	20	63.9	0.3	0.6	38.9
West Suffolk Fracture Liaison Service	219	3	29.4	22.4	63.5	74.7	6.4	57.1	76.3
Wye Valley NHS Trust	231	4	*	33.9	98.3	0	0.9	97	0.8
Yeovil Hospital	795	6	97.5	98.3	46.2	*	12.6	30.8	71.8
Overall (Average)	18,35	-	35.6	45.5	66.9	46.5	33.2	32.3	36.4

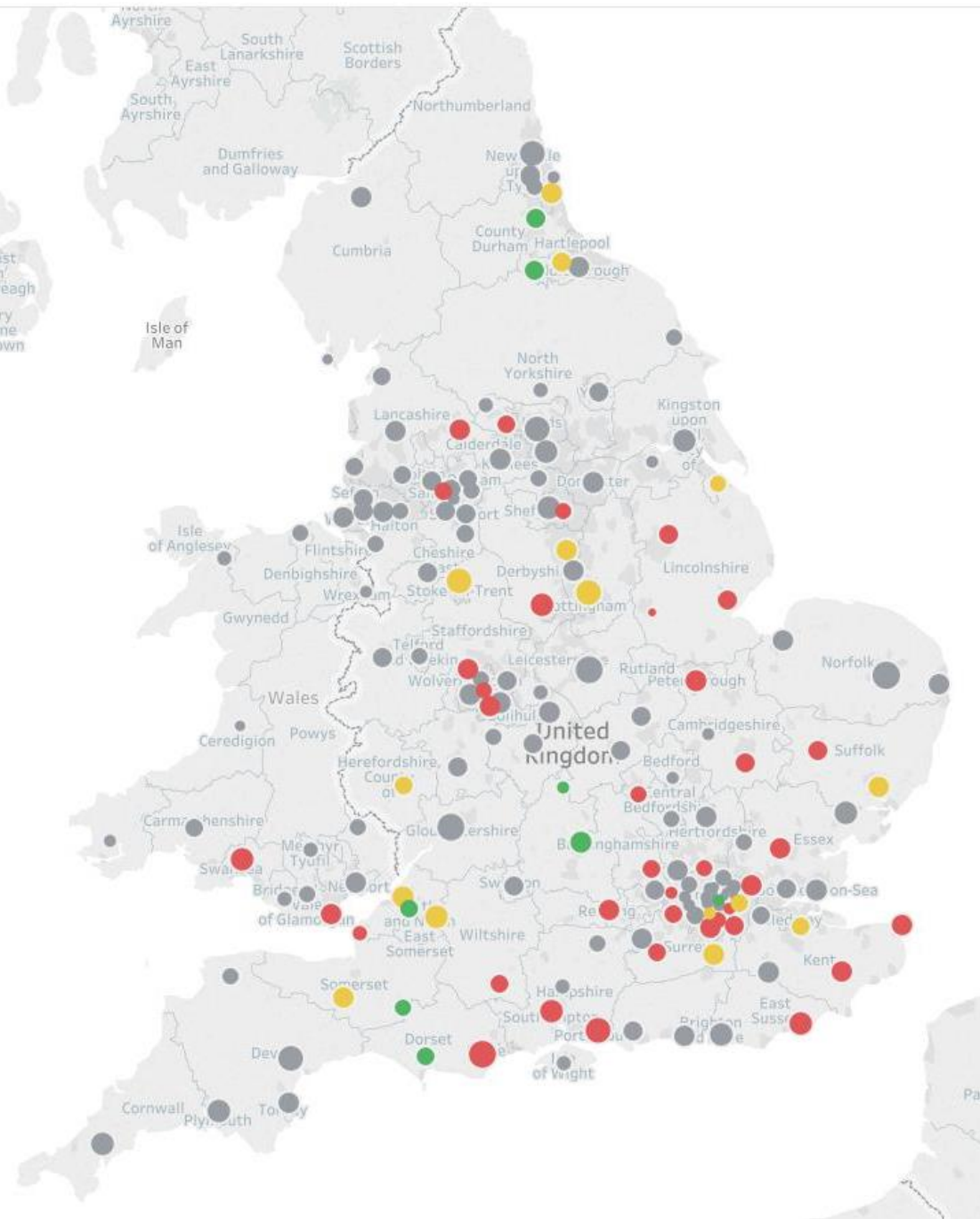
Potential patient impact over 5 years

If all patients in England received a comparable service to the highest treating FLS:

21,848 fractures would be prevented - including 9157 hip fractures.

Saving £151 million from just hip fractures

S DB and non-participating sites, 2017

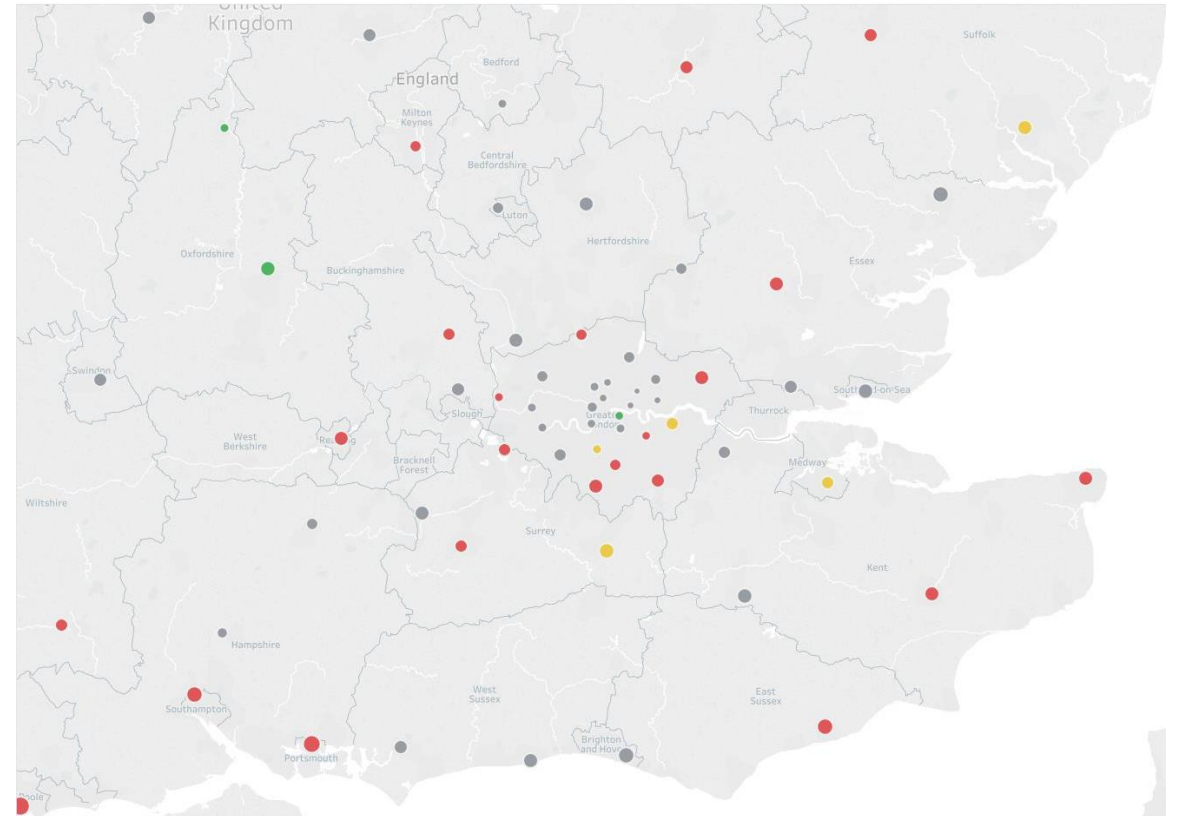


Case Load 2017

- 355
- 1,000
- 2,000
- 3,000
- 4,180

Participation

- 80+
- 50-79
- <50
- Not participating



Berwick: triple aim

1. Effective
2. Efficient
3. Patient Experience

1. Identify priority
2. Develop improvement plan
3. Deploy improvement plan
4. Re-Measure

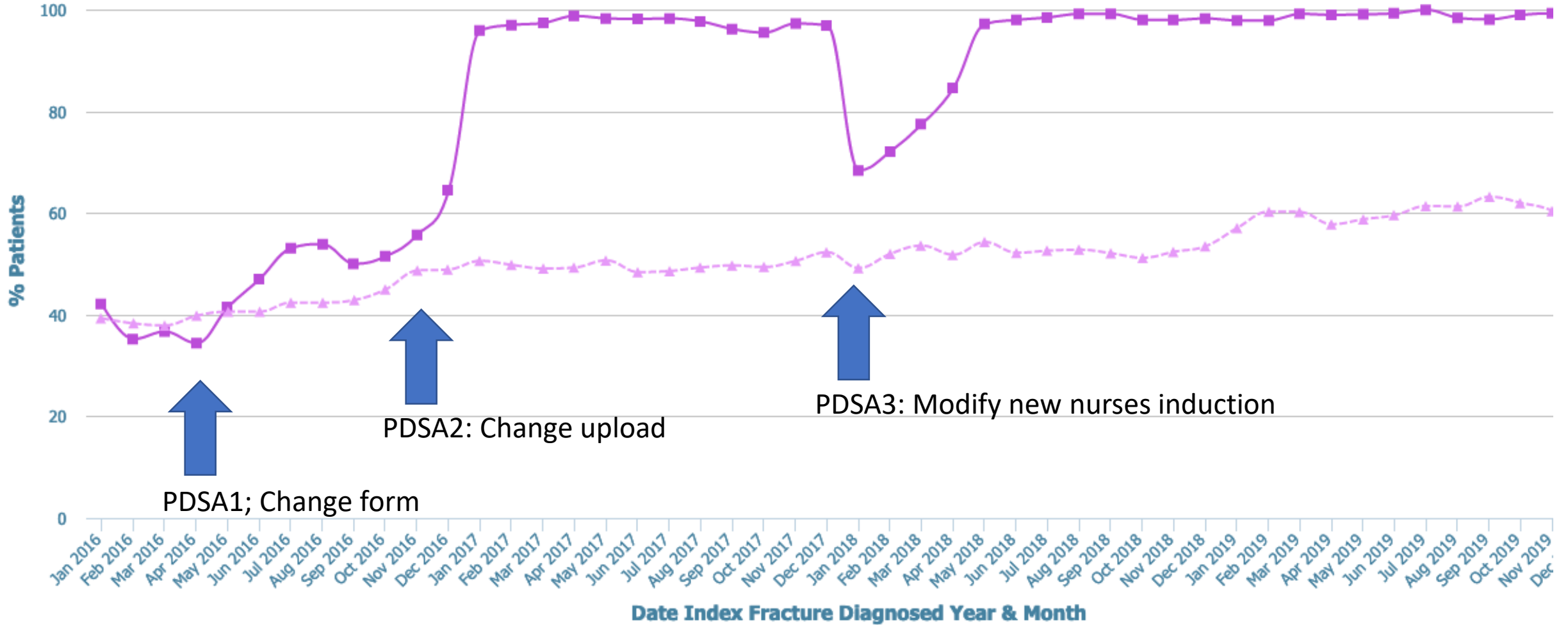
Trust name	Number of trusts in the set	Number of trusts that have improved patient experience %	Number of trusts that have improved efficiency %	Number of trusts that have improved patient experience and efficiency %	Number of trusts that have improved patient experience but not efficiency %	Number of trusts that have improved efficiency but not patient experience %	Number of trusts that have not improved patient experience or efficiency %
Barrow Hospital Trust	156	10	10	10	10	10	10
Barrow Hospital Trust	253	10	10	10	10	10	10
Barnsley Hospital	382	10	10	10	10	10	10
Donnerbrook Hospital	536	10	10	10	10	10	10
East of London Health Trust	273	10	10	10	10	10	10
East Surrey Hospital	233	10	10	10	10	10	10
East of London Health Trust	358	10	10	10	10	10	10
East of London Health Trust	284	10	10	10	10	10	10
East of London Health Trust	79	10	10	10	10	10	10
East of London Health Trust	436	10	10	10	10	10	10
East of London Health Trust	134	10	10	10	10	10	10
East of London Health Trust	811	10	10	10	10	10	10
East of London Health Trust	1,111	10	10	10	10	10	10
East of London Health Trust	553	10	10	10	10	10	10
East of London Health Trust	1,200	10	10	10	10	10	10
East of London Health Trust	1,220	10	10	10	10	10	10
East of London Health Trust	200	10	10	10	10	10	10
East of London Health Trust	59	10	10	10	10	10	10
East of London Health Trust	536	10	10	10	10	10	10
East of London Health Trust	109	10	10	10	10	10	10
East of London Health Trust	231	10	10	10	10	10	10
East of London Health Trust	285	10	10	10	10	10	10
East of London Health Trust	86	10	10	10	10	10	10
East of London Health Trust	121	10	10	10	10	10	10
East of London Health Trust	584	10	10	10	10	10	10
East of London Health Trust	644	10	10	10	10	10	10
East of London Health Trust	110	10	10	10	10	10	10
East of London Health Trust	944	10	10	10	10	10	10
East of London Health Trust	109	10	10	10	10	10	10
East of London Health Trust	1,218	10	10	10	10	10	10
East of London Health Trust	191	10	10	10	10	10	10
East of London Health Trust	344	10	10	10	10	10	10
East of London Health Trust	830	10	10	10	10	10	10
East of London Health Trust	641	10	10	10	10	10	10
East of London Health Trust	679	10	10	10	10	10	10
East of London Health Trust	223	10	10	10	10	10	10
East of London Health Trust	231	10	10	10	10	10	10
East of London Health Trust	376	10	10	10	10	10	10
Overall (average)	143.7	10	10	10	10	10	10



Most change will not result in improvements, but can not improve without change

Balancing measures

Investigation and treatment - Oxfordshire Fracture Prevention Service



● FLS assessment <=90 days % ▲ FLS assessment <=90 days National % ■ Patients offered/referred for falls risk assessment % ▲ Falls assessment National %
 ▲ Patients offered Bone Protection medication % ▲ Bone Protection Meds National % ▲ Patients <75 offered/undergone a DYA %

KPI: Ensuring FLSs deliver on their expectations

- WHY we need KPI
- HOW the KPI work
- What is the next step

Q & A

THANK YOU

On behalf of IOF, we thank you for your participation in this webinar