

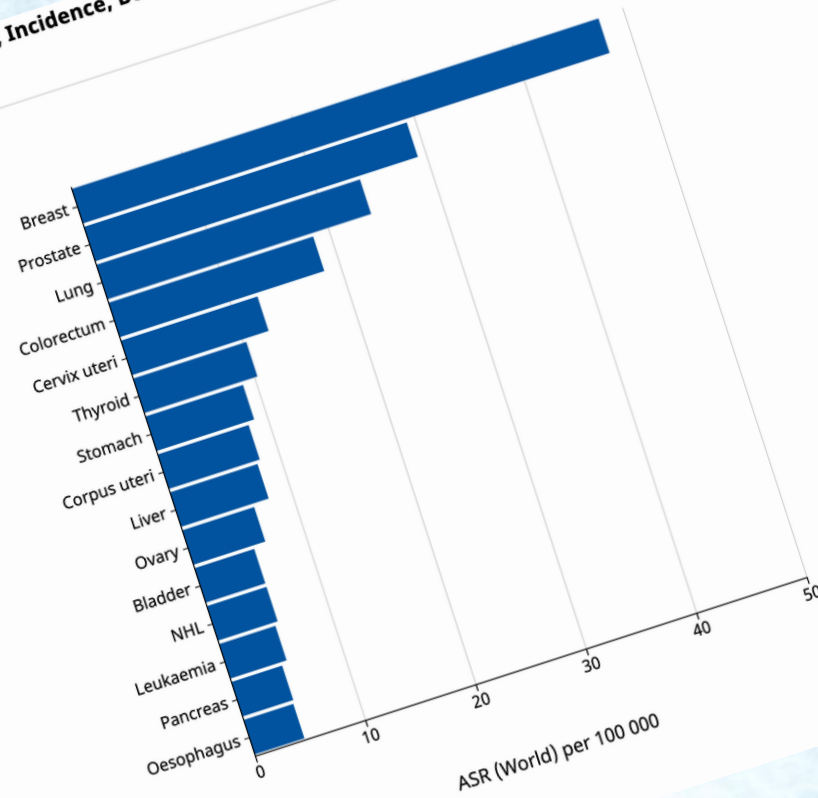
Breast cancer radiotherapy addressing inequalities and bridging the care gap: Why innovation may not be reaching everyone.

Professor Heidi Probst
and Dr Janet Ulman

Introduction



Age-Standardized Rate (World) per 100 000, Incidence, Both sexes, in 2024
UN Regions
(Top 15 cancer sites)



Cancer TODAY | IARC - <https://gco.iarc.who.int/today>
Data version: GLOBOCAN 2024
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- Radiotherapy to the breast is known to increase the risk of developing Ischaemic heart disease⁽¹⁾ and is closely linked with mean radiation dose received by the heart⁽¹⁾.
- Ethnic disparities in cardiac toxicity following breast irradiation have been highlighted⁽²⁾. A US study identified women of African American heritage to be at a higher risk of Ischaemic heart disease following breast irradiation(HR=1.3)⁽²⁾.
- A second US study (n=8750) identified black heritage women had larger mean breast volume (1359.5cc vs 1104.1cc) were less likely to be treated in breath hold (7.8% vs 17.3%) and had higher mean heart dose than white women(p<0.049)⁽³⁾.
- There are other concerns about dignity during radiotherapy especially for women from specific religious groups where the need to be naked in front of male staff can be deeply distressing⁽⁴⁾.

Introduction



FORCE FIELD ANALYSIS



chronic pain 33%
higher risk in
patients with a
BMI > 30

- The odds of developing chronic breast pain is significantly higher for those with higher BMI, lower age (<50-55 years), radiotherapy (compared with those treated without radiotherapy), those with lymphoedema and lower educational attainment ⁽⁵⁾.
- The risk of developing Acute Radiation dermatitis following breast cancer radiotherapy is greater in patients with a higher BMI, larger breast volume, smoking status, and those with diabetes ⁽⁶⁾.



Odds of developing
chronic pain was 2.58
times higher in patients
with lymphoedema.

Key Issues



- Breast cancer accounts for approximately a third of the radiotherapy workload.
- Significant disparities in outcomes exist across different patient characteristics.
- Novel approaches have been developed that could ameliorate disparities in care for this patient group.
- We know it can take as long as 17 years for an innovation to make it from bench to adoption and diffusion.
- **Aim to identify the barriers and enablers to implementation of novel devices/practices to ameliorate disparities in care across ethnic groups, gender, age or body morphology.**

Method

A Consensus Development Consultation process, using Force Field Analysis⁽⁷⁾.

- A mixture of online consultations and electronically completed FFA tables.

1. Clinical radiographers
2. Industry representatives
3. Patient charities
4. Professional body representatives
5. Cancer Alliances
6. Radiotherapy managers
7. Patient advocates

- A list of suggested representatives for the consultation were validated by an independent radiographer.
- Completed FFAs were analysed independently by HP and JU.
- Strongest forces (score=5) imported into NVivo software and analysed using Framework analysis to produce a single set of combined themes.



FORCE FIELD ANALYSIS

Table 1. Force Field Analysis-Industry Stakeholders

Forces for change	Score	Forces against change	Score2
Where the innovation leads to improved accuracy and safety	5	Extremely high regulatory burden for new devices	5
Where the innovation leads to efficiency and time savings (more efficient use of equipment or improvement in patient throughput and/or reductions in staff workload)	5	Financial burden of developing a device/innovation, taking to market	5
Where the innovation leads to potential to reduce imaging dose	5	High capital cost of technologies	5
Where the innovation leads to improvement in patient experience in short and long term	5	Cost of ongoing service and support	5
Where there is change in policy/financial model (e.g. reimbursement) to support the innovation	5	Lack of resources at Institution level to maximise benefit of the innovation, ie unable to roll out across all areas.	4
Where there is high quality evidence the innovation improves outcomes	5	Costs associated with being the early adopters,	4
Where the innovation leads to standardisation of care and technology across cancer networks	4	Difficulty obtaining strong clinical evidence for devices that do not have regulatory approval	4
Where the innovation leads to extending capabilities of existing equipment or technology	3	Resources required for staff training	4
Where there is patient demand-patient demand for specific technologies or innovations is increasing	3	Staff attitudes: reluctance to deviate from current status quo	3
Where there is marketing for the innovation	3	Complexities of interoperability of <u>new innovation</u> requiring new ways of working and additional training	3
Where there is grant funding for innovation	2	Innovation space dominated by existing technologies difficult to break through.	2
		Sceptical attitudes of Professional organisations, or scientific bodies towards novel approaches or Industrial R+I	1
		Insufficient evidence to implement across all treatment sites	1
Total	45	Total	46



Results

INDUSTRY STAKEHOLDERS

Forces Against Change n=13
Total= 46

Forces For Change n=11
Total =45

PATIENT ADVOCATES

Forces Against Change n=10
Total= 43

Forces For Change n=8
Total =36

CLINICAL STAKEHOLDERS

Forces Against Change n=32
Total= 125

Forces For Change n=27
Total =116

POLICY-MAKERS & PROFESSIONAL BODIES

Forces Against Change n=20
Total= 80

Forces For Change n=24
Total =95

Total score-forces against change= 294

Total score-forces for change= 292

Result 01

Figure 1 Combined analysis of the strongest forces (scoring 5) working against change across all stakeholder groups. (where 01 was the most commonly occurring theme)



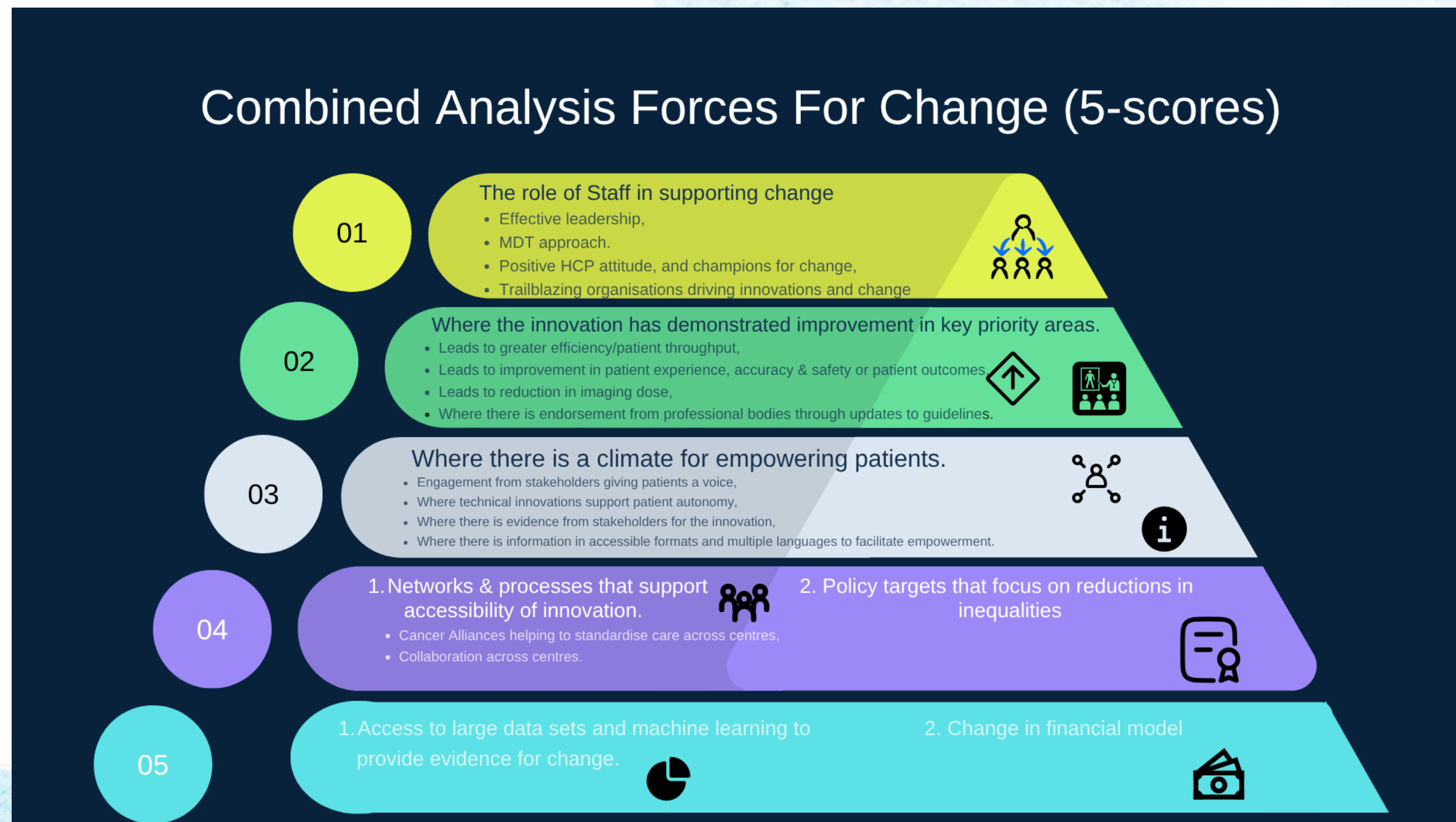
Combined Analysis Forces Against Change (5-scores)



Result 02



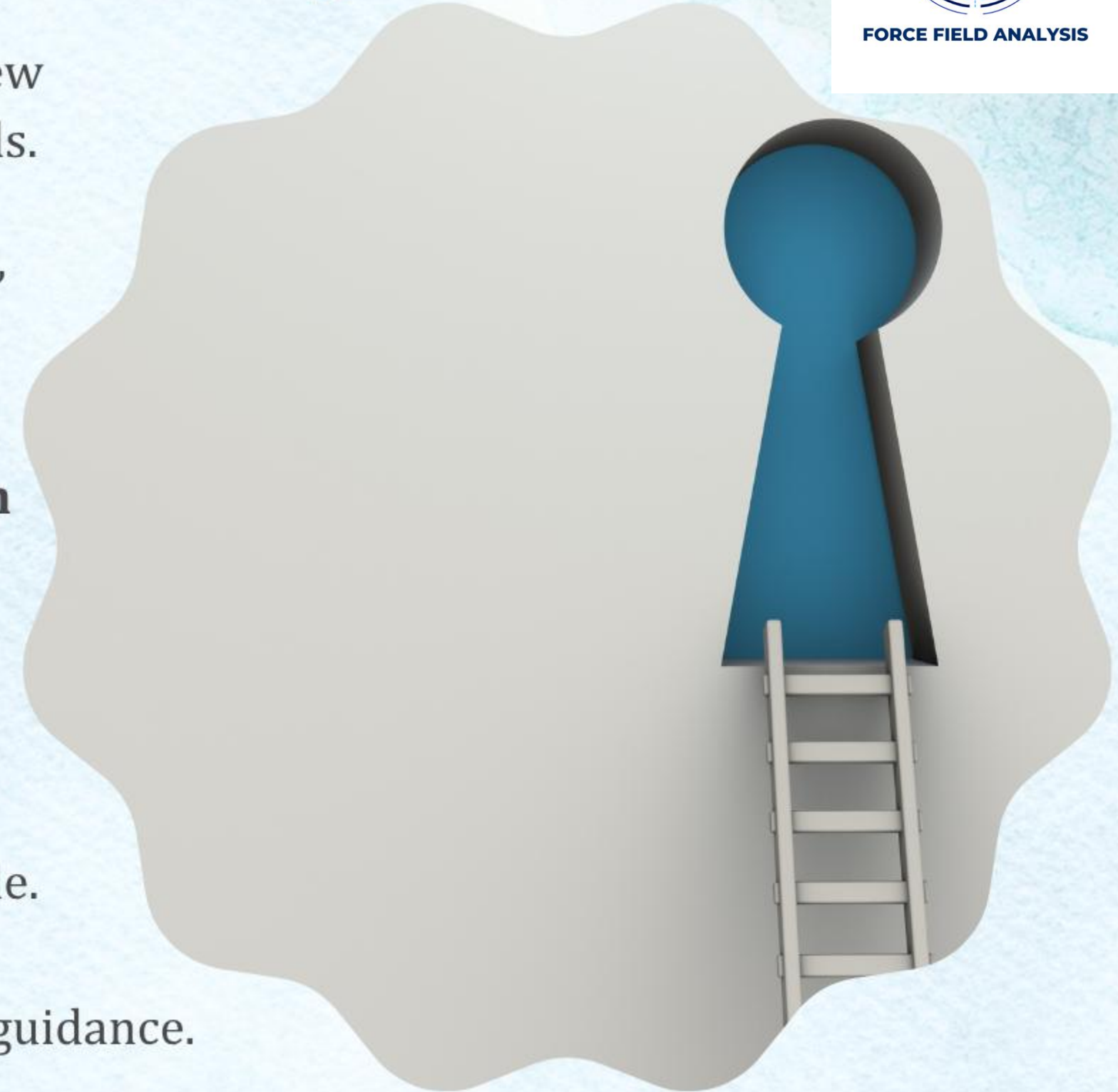
Figure 2 Combined analysis of the strongest forces (scoring 5) working for change across all stakeholder groups. (where 01 was the most commonly occurring theme)



What can we do as a community?



- 1 Address the financial constraints limiting embedding of new innovations- advocating for revised reimbursement models.
- 2 Engage Senior Leadership: Evidence-based business cases, and strategic alignment of innovation with organisational goals.
- 3 **Provide training that builds positive understanding on benefits of R+I and build an ecosystem of engagement with innovation.**
- 4 Identify and Support Innovation Champions.
- 5 Share evidence of impact of innovations-free and accessible.
- 6 Foster patient empowerment and engagement-SCoR 4P's guidance.
- 7 Promote innovations through specialist communities of practice: Sharing learning across stakeholder groups could overcome forces working against change.



Thank you for listening.



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