1. Evidence that use of GSF improves early identification of patients in different settings.

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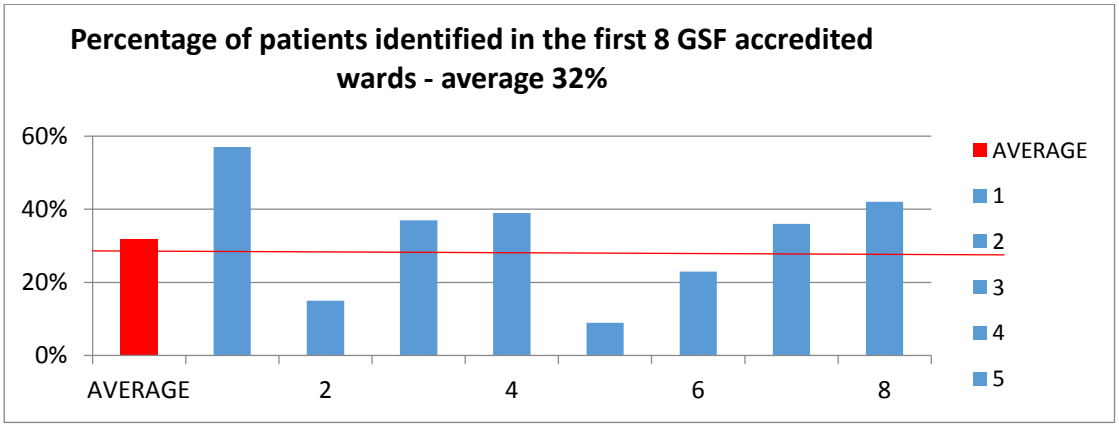
There is good evidence that use of the GSF Prognostic Indicator Guidance improves early recognition or identification of patients considered to be in their last year of life. However, this is only the first key step in the full GSF Quality Improvement Programme used in different settings (primary care, care homes, hospitals, domiciliary care, prisons hospices etc). Intrinsic comparative evaluations of teams progressing with the GSF programme demonstrates significant change towards current population-based estimates (eg 1%,30%,80%), and that high levels of early identification in line with can be achieved. The further steps of GSF, including use of Needs-based Coding, MDT discussions ,assessment and planning, all then work together to ensure more proactive care for patients in line with preferences.

1. Evidence from Intrinsic GSF Evaluation Audit

Early identification is GSF's first key step. The GSF training and coaching enables staff to increase their identification rate over time, supported by use of the GSF Prognostic Indicator Guidance and abbreviated forms of it (eg Mini-PIG, PIGLET) through teaching, , coaching , use of run-charts, workshop feedback ,peer-support etc. Over the course of the full GSF Programme (6-24 months), teams demonstrate increased identification rates for all patients, assessed regularly in a variety of ways. Before and after evaluations are assessed, plus Accreditation portfolio submissions includes clarification of consistency and sustainability, examined further at the Visit.

a) **Acute Hospital wards -**Cumulated data from 8 GSF Accredited Hospital wards in different hospitals ie wards that have undertaken GSF training and were successfully accredited.

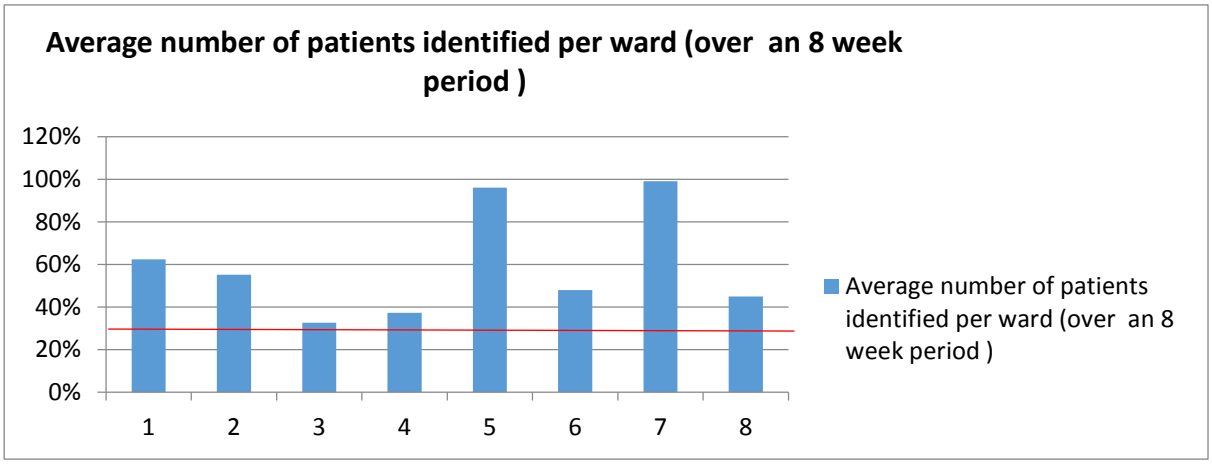
Conclusion for these GSF wards – an average identification rate 32% of all patients (in line with Clarke study) **–** snapshot survey at one specific time cumulated



The above graph demonstrates what is achievable on an acute hospital ward. The wards identified covered a range of specialities including oncology, haematology, stroke rehabilitation, renal unit, general medicine, orthopaedic and elderly care. The range of identification rates was between 9% and 57%, the average was **32%.**

b) Community Hospital wards

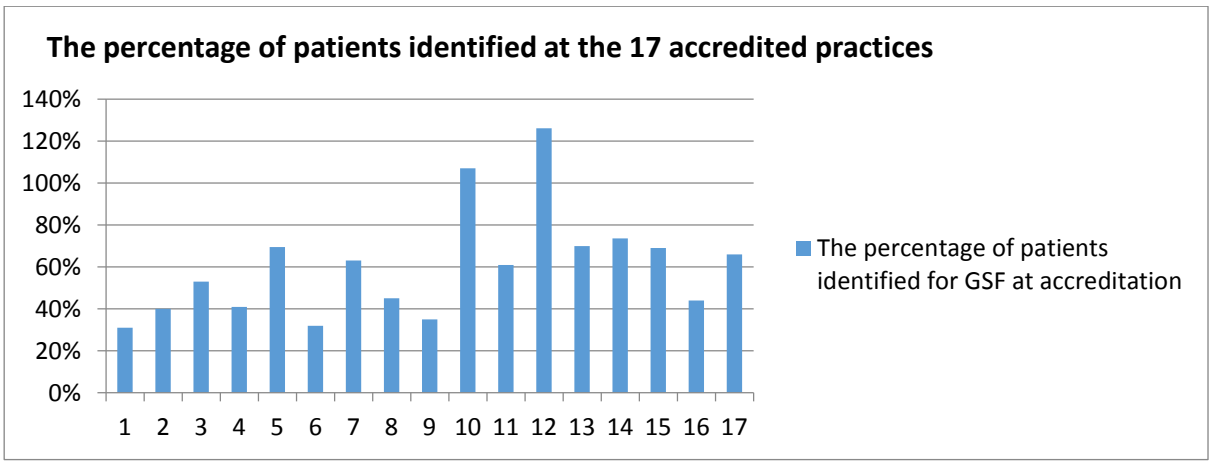
Findings from the last 8 accredited community hospital wards 2015-16 (numbered 1-8), taking an average over 8 week period of their identification rates. This demonstrates an average identification rate for all 8 hospitals of 59% (range 31-100%)and confirms that all Accredited wards identify over 30% of their patients , in line with evidence from the Clarke paper(though this refers to Acute hospitals).



c) Primary care

Cumulated data from 17 GSF Accredited GP Practices (more details available).

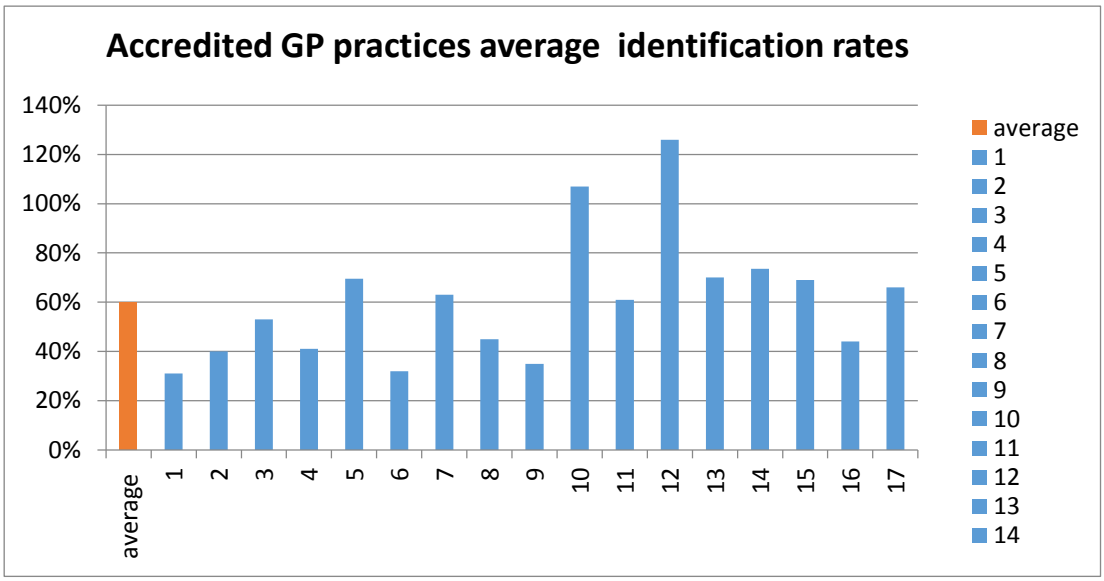
Conclusion for these GSF GP Practices – an average identification rate of 60% of all patients that died were identified for their practices register (in line with population figures of estimate 1% population dying/ year).



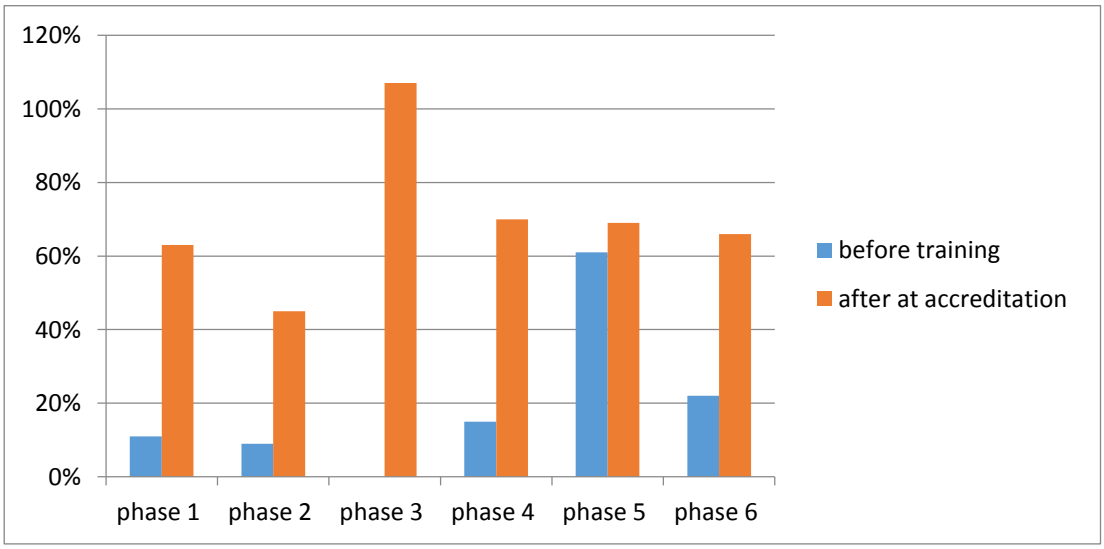
The graph above demonstrates that some GP practices, following GSF Going for Gold training and Accreditation, are attaining high rates of identification of patients for their GSF/Palliative Care Register, averaging 60%. This demonstrates what is possible to achieve by a few and could be an encouragement for others.

Attainment of GSF Accredited practices- achieving identification of an average of 60% of all patients that died. Identification rates increase in these practices following GSF Going for Gold training, from about 20% to an average **of 60% of all patients that died identified** for the palliative care register.

This includes data from the last 17 practices to be accredited. Further work has been done to demonstrate sustained improvements in following years (more data available).

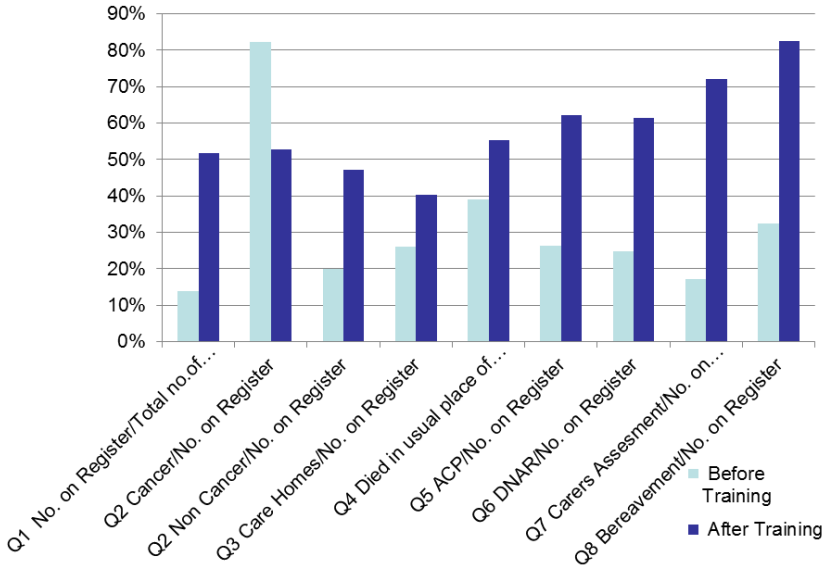


Increase in identification rates following GSF training. The graph below demonstrates that GP practices (in a sample of one practice per phase) show a significant increase in identification rates following the GSF training and in preparation for Accreditation, showing what can be achieved.



Early identification leads to more proactive planning and improved outcomes for all patients.

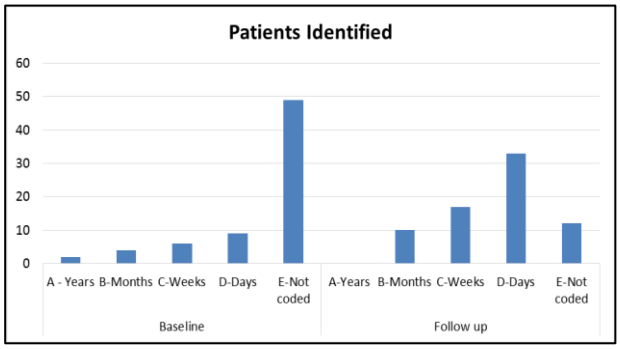
Sample of measurements cumulated from the GSF Key Outcomes Ratios for the first 7 accredited practices 2014, demonstrating improvements in outcomes in many areas.

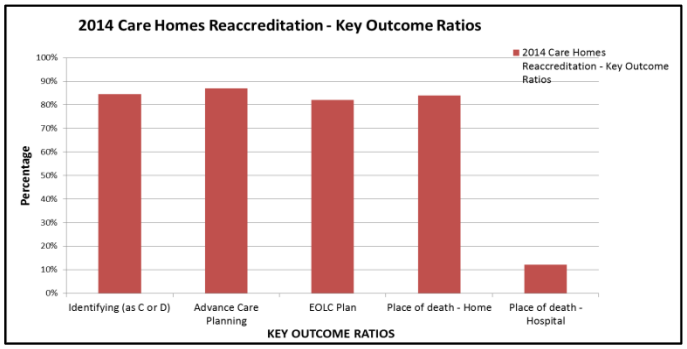


Care Homes

For Care Homes, consideration of early identification is different: all residents are considered to be approaching the end of their life and coded appropriately , with many considered to have years to live (blue code) and about 80% considered to be in their last year of life. The Needs Based Coding relates to the predicted stage of decline. An assessment at accreditation is made of the allocated coding for people when they die (red/amber) through the After Death Analysis and most care homes are found to estimate decline appropriately. See Summary of Evidence Care Homes for more details.

Patients identified to be in the final days and weeks of life when they died in GSF accredited care homes 2014.





2. Evidence from the literature that use of the GSF and GSF Prognostic Indicator Guidance supports earlier identification of patients considered to be in their last year of life.

Date	Location	Study group	Finding / Conclusion/ Message	Reference
2015	Hospital Australia	Geelong Australia - study in a general hospital admissions	The use of an objective clinical tool identifies a high prevalence of patients with palliative care needs in the acute tertiary Australian hospital setting, with a high 1 year mortality and poor return to independence in this population. The low rate of documentation of discussions about treatment limitations in this population suggests palliative care needs are not recognised and discussed in the majority of patients.	Sharyn Milnes et al A prospective observational study of prevalence and outcomes of patients with Gold Standard Framework criteria in a tertiary regional Australian Hospital BMJ Supportive & Palliative Care 2015;0:1–8. doi:10.1136/bmjspcare-2015-000864 doi:10.1136/bmjspcare-2015-
2012	Hosp. - UK	Hospital	A modified GSF PIG identified most patients in last year pf life	Mason C, Shah S, Palliative Medicine, June 2012, vol./is.26/4(469-470), 0269-2163
2012	Hospital UK	Acute Coronary Syndrome	*This study has highlighted a potentially large number of ACS patients eligible for EoL care. GSF or GRACE could be used in the hospital setting to help identify these patients. GSF identifies ACS patients with more comorbidity and at increased risk of hospital readmission* GSF PIG effective in identifying pts with ACS EOL	Fenning s Woolcock R, Haga K, Iqbal J, Fox KA, Murray SA, Denvir MA Identifying acute coronary syndrome patients approaching end-of-life. PLoS One. 2012;7(4):e35536. doi: 10.1371/journal.pone.0035536. Epub 2012 Apr 18.
2012	H UK	Eemergency admissions	Qualitative study to explore the perspectives of patients palliative care needs were received while in hospital.	Richards N., Gardiner C., Ingleton C., Gott M. Palliative Medicine, June 2012, vol./is.26/4(537-538),0269-2163
2013	Hosp UK	Hospitals-high symptom burden	The paper highlights elevated levels of burden experienced by patients with palliative care requirements. Moreover, the paper also indicates that a large proportion of such patients are not in receipt of palliative approaches to their care. Ie GSF PIG helps identify patients with a high symptom burden in hospital	Ryan T et al Symptom burden, palliative care need and predictors of physical and psychological discomfort in two UK hospitals.BMC Palliat Care. 2013 Feb 26;12:11. doi: 10.1186/1472-684X-12-11.
2013	New Zealand	Acute hospital	*One fifth of hospital inpatients met criteria for palliative care need, the majority of whom were aged >70 years.*	Gott M et al BMC Palliat Care. 2013 Mar 28;12:15. doi: 10.1186/1472-684X-12-15.Palliative care need and management in the acute hospital setting: a census of one New Zealand Hospital.
2013	Hosp. UK	Acute	**GSF helps identify a third of all patients (NB Pre**	Gardiner C et al Extent of palliative care need

		Hospital	**Clarke- paper)** *The results reveal that according to the GSF prognostic guide, over a third of hospital in-patients meet the criteria for palliative care need.*	in the acute hospital setting: a survey of two acute hospitals in the UK.Palliat Med. 2013 Jan;27(1):76-83. doi: 10.1177/0269216312447592. Epub 2012 May 22.
2014	New Zealand	Acute Hospital	*The sensitivity, specificity and predictive values of the Gold Standards Framework Prognostic Indicator Guidance in this study are comparable to, or better than, results of studies identifying patients with a limited life expectancy in particular disease states (e.g. heart failure and renal failure). Screening utilising the Gold Standards Framework Prognostic Indicator Guidance in the acute setting could be the first step towards implementing a more systematic way of addressing patient need - both current unrecognised and future anticipated - thereby improving outcomes for this population*	O'Callaghan A et al Palliat Med. 2014 May 22. pii: 0269216314536089. **Can we predict which hospitalised patients are in their last year of life? A prospective cross-sectional study of the Gold Standards Framework Prognostic Indicator Guidance as a screening tool in the acute hospital setting.**
2015		ACS	A study to find the most accurate method of identifying the last year of life in patients presenting with acute coronary syndrome: A multi-centre prospective study.	Moretti C et al, Eurointervention, May 2015(no pagination), 1774-024X
2014	Hospital UK	COPD	This study showed wide variation in survival in a patient population on LTOT. The ADO score could be used as an early trigger for referral to palliative services, thus enhancing end-of-life care, which improves quality of life in COPD. A prospective study of this application would be required to prove this hypothesis Ie GSF PIG and other tools helps predict COPD patients in the last year of life	Law S[1], Boyd S, Macdonald J, Raeside D, Anderson D Predictors of survival in patients with chronic obstructive pulmonary disease receiving long-term oxygen therapy. BMJ Support Palliat Care. 2014 Mar 25. doi: 10.1136/bmjspcare-2012-000432.
2014	H- New Zealand	General admissions	Can we predict which hospital patients are in their last year of life? A prospective cross-sectional study of the Gold Standards Framework Prognostic Indicator Guidance as a screening tool in the acute hospital setting	O Callahan A, Palliative Medicine, September 2014, vol./is.28/8(1046-1052),0269-2163;1477-030X
2015	H-UK	Liver Disease	Screening for poor prognosis can improve end of life care for patients with chronic liver disease.	Hudson B.E.., Ameneshoa K., Collinbs P., Portal A.J., Gordon F.H., Verne J., McCune A. Hepatology, October 2015, vol./is62/(490A)
2016	H-Italy	(STORM) Acute Coronary Syndrome patients	A study into risk assessment in acute coronary syndrome in patients towards the end of life.	Moretti C et al, Emergency medicine journal : EMJ, Jan 2016, vol33, no.1, p. 10-16, 1472-2013

Note- The key paper by David Clark in 2014 confirms that 29% of all hospital patients are in their last year of life, and this provides us with the evidence on which to base our aspirations for early identification rates in all our GSF Hospital programmes. Ref Clark et al **Imminence of death among hospital inpatients: Prevalent cohort study.** Palliat Med. 2014 Mar 17;28(6):474-479

3. Evidence for conference abstracts, grey literature and qualitative research

Accredited GSF Hospitals
Earlier identification of patients considered to be in the last year of life is a recognised pre-cursor to improved end of life care. 22 Acute and Community Hospital wards that were GSF Accredited and received the GSF Quality Hallmark Award supported by the British Geriatric Society and Community Hospitals association in 2014-5 demonstrated high levels of early identification of patients (average over 30% patients acute hospitals and 45% community), and high levels of patients offered advance care planning discussions to each identified patient (75%-100%), leading to an improved systematic approach to care for patients in the last year of life with any diagnosis.

Source: Ref Thomas Armstrong Wilson National GSF Centre in End of life care GSF Accreditation flyers EAPC May 2015 Accepted Abstract **http://tinyurl.com/hz7qeob**

HW Wright Palliative Care Team Leader Barking Havering and Redbridge Hospitals- said following GSF accreditation of their first ward: *"We believe that the GSF has developed within the hospital a greater awareness for the need to have conversations about death and dying in order to plan end of life care. By raising awareness this has enabled clinicians to gain confidence in identifying patients earlier in their disease trajectory and helped to prompt effective end of life communication where needed."*

LB Practice Nurse at Grosvenor Medical Centre
"When the practice started GSF there were only 13 patients on the register. There are now 51 and the proportion of non-cancer patients has risen from 25% to 53%.
The biggest benefit of doing GSF has been the continuity of care. Whereas in the past we would tend to hand over responsibility to the district nursing team, now a named GP and the nursing team at the practice is involved throughout and the patients feel much better cared for. Now the DNs enter our team not the other way round."

HMP Norwich
Lead Nurse SR, said: "*GSF has helped us do everything that little bit better. We are certainly better at identifying people approaching the end of life because we now look more closely and have a mental checklist. It's also helped us to be better planned and more organised – things really flow now. It's really helped the team feel justifiably confident in the care they are providing. Having their work acknowledged means they can boast about it."*

Airedale General Hospital
GSF helped increase identification of patients in last year of life to 30%.Dr RM, Consultant Geriatrician at Airedale, said: "*The GSF and Gold Line provides me with the added reassurance that my patients and their family have a plan, and the added resources in place as they move from secondary care to the community."*

Saltaire Medical Practice.
Increased number of patients on the register from six to 84. **Dr IL**, said: "We only have one chance to get it right. With an ageing population, this is becoming an increasingly important part of our work as GPs and so we have to ensure consistency and equality

Ilkley Moor Medical Practice
Prior to doing the GSF Going for Gold programme, we had 27 patients on the GSF register, almost all of whom were cancer patients. Now we have 236 on the register, 70% of whom are non-cancer.