

Service Line Reporting Versus Patient-Level Information and Costing Systems: Which is the Most Useful Approach?

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Context of the Debate

The Department of Health’s introduction of a new operating framework heralds a rapid move towards locally negotiated tariffs for a growing range of clinical activity. No longer will national cost averages decide what a primary care trust (PCT) will pay. This development, coupled with new performance-related funding, has made having precise, granular information an essential requirement for foundation trust providers and those aspiring to become one.

This is not a simple accounting exercise of rolling financial data out to the divisions by individual service line with some allocations attached to the non-direct costs.

Future success is not based on the data itself, but how effectively one can engage clinicians and managers to accept and act on it to effect real improvements in the efficiency and value of patient care. If real change at this fundamental level is accomplished, the collective impact is exponential when aggregated to the regional or national level.

To achieve these big gains, trusts need to arm their clinical teams with the right information supported by actionable analytics, and there lies the rub. Many are being seduced by the attractions of service line reporting (SLR) because of the ease at which they believe it can be implemented. Others prefer the patient-level information and costing systems (PLICS) route because they feel the granularity it provides is better. But who is right?

To answer that question, we need to revisit the point of the exercise which in simplistic terms is to engage clinicians to own and act on their data to improve the efficiency and effectiveness of patient care. The acid test will be which approach is most effective in achieving this result.

SLR Versus PLICS: Is there a Difference?

In general, trusts believe the two approaches are actually different labels for the same thing and often interchange these labels when speaking amongst themselves and their staff. However, the two approaches differ significantly.

From a methodological perspective, SLR is simply a top-down apportionment exercise consisting of assigning known direct costs to individual service lines topped up with a centrally decided portion of general overhead as illustrated in Figure 1.

Service Line Reporting by Metrics									
Metrics	NONE	100 – General Surgery	101 – Urology Outpatients	103 – Breast Surgery	104 – Colorectal Surgery	107 – Vascular Surgery	110 – Trauma and Orthopaedics	120 – ENT	130 – Ophthalmology Outpatients
Total Income									
Tariff Income	£14,808,332.00	£16,631,456.00	£4,264,272.00	£835,330.00	£274,369.00	£274,861.00	£25,111,815.00	£1,143,741.00	£4,709,575.00
Other Income	-£240,074.67	-£601,052.47	-£97,870.00	-£179.70	-£5,364.37	-£3,806.09	-£528,805.75	£0.00	-£193,732.66
Total: Total Income	£15,057,406.67	£17,322,508.47	£4,362,151.00	£835,509.70	£279,733.37	£278,667.09	£25,640,710.78	£1,143,741.00	£4,903,307.66
Total Direct and Indirect Cost									
Total Direct Pay	£9,416,792.36	£8,183,302.73	£1,650,943.73	£580,427.67	£86,811.39	£80,380.14	£7,775,145.31	£454,713.00	£1,865,480.53
Total Direct Non-Pay	£78,475.96	£343,638.64	£127,769.40	£5,612.92	£3,878.63	£6,245.56	£298,688.25	£20,619.55	£493,282.07
Total Indirect	£3,328,841.36	£6,577,310.51	£1,684,693.44	£187,980.87	£34,908.13	£35,858.88	£10,776,917.67	£108,267.48	£1,714,878.27
Total: Total Direct and Indirect Cost	£12,824,109.67	£15,104,251.88	£3,463,406.57	£775,021.45	£125,598.16	£122,484.58	£18,850,751.24	£583,600.04	£4,073,640.92
Contribution	£2,233,297.00	£2,218,256.59	£898,744.43	£60,488.25	£154,135.21	£156,182.51	£6,789,959.54	£560,140.96	£829,666.74
Overhead Cost	£6,081,974.51	£4,474,272.98	£729,425.82	£260,200.90	£51,784.77	£49,246.60	£4,213,191.77	£204,907.02	£623,252.92
Total: EBITDA	-£3,848,677.51	-£2,256,016.40	£169,318.62	-£199,712.65	£102,350.44	£106,935.92	£2,576,767.77	£355,233.95	£206,413.82

Figure 1. Service Line Reporting assigns known direct costs to individual service lines.

PLICS on the other hand is a bottom-up process of determining unit cost for every intervention or resource and linking the costs to individual activities to assign the value of consumption at the patient level. Although overhead apportionment is a part of the process, there is a transparency of logic for this, resulting in more accurate costs on a case-by-case basis, as can be seen in Figure 2.

Performance Metrics by Patient Type					
Metrics	AE	DC	IP	OP	All
No of Spells	169,833	22,124	60,148	325,561	557,666
Average Length of Stay	1	1	4	1	1
Total Length of Stay	169,833	22,124	231,810	212,795	636,562
Total Tariff Income	£14,808,332.00	£17,373,746.00	£95,825,808.00	£41,436,753.00	£169,144,639.00
Inpatient Income	£0.00	£17,373,746.00	£95,825,808.00	£0.00	£113,199,554.00
Outpatient/A&E Income	£14,808,332.00	£0.00	£0.00	£41,136,753.00	£55,945,085.00
Total Cost	£18,887,339.63	£14,734,111.69	£111,863,387.28	£25,696,322.86	£171,181,161.46
Average Cost per Day	£111.21	£665.98	£482.56	£120.76	£268.92
Cost as % of Total	11.03%	8.61%	65.35%	15.01%	100.00%
Total Profit	-£4,079,007.63	£2,639,634.31	-£16,037,519.28	£15,440,430.14	-£2,036,522.46
Profitability %	-27.09%	14.69%	-16.30%	37.53%	-1.18%
Total Outlier Days			32,357		32,357
Total Cost/Spell	£111.21	£665.98	£1,859.80	£78.93	£296.33
Total Income/Spell	£88.66	£812.18	£1,635.47	£126.36	£298.67
Actual Profit/Spell	-£24.02	£119.31	-£266.64	£47.43	-£3.53
Actual Profit/Day	-£24.02	£119.31	-£69.18	£72.56	-£3.20
Hospital Average Cost/Spell	£0.00	£608.35	£1,210.98	£0.00	£149.39
Cost/Spell Variance		9.47%	53.58%		98.36%
Hospital Average LOS	0	2	5	0	1
ALOS Variance		-44.85%	-28.85%		73.96%
Drugs Full Cost	£73,727.61	£684,838.84	£3,151,869.83	£2,538,881.95	£6,449,318.23
Medical Full Cost	£239,150.43	£4,198,990.77	£29,618,093.37	£3,994,952.18	£38,051,186.75
Accident and Emergency Full Cost	£12,738,787.66	£0.00	£1,232,580.31	£0.00	£13,971,367.97
Radiology Full Cost	£1,352,605.53	£249,008.94	£3,299,575.68	£5,023,390.93	£9,924,581.08
Nursing Full Cost	£1,371,418.92	£2,223,768.51	£50,087,650.88	£8,673,988.14	£62,356,826.45

Figure 2. PLICS is a bottom-up process of determining unit costs and linking them to individual activities to assign the value of consumption at the patient level.

Another significant difference is the level of detail from which remedial action can be agreed. The SLR approach aggregates activity and costs to individual service lines. PLICS works at the much more granular level of individual patients who are linked initially to a consultant team and then aggregated to service lines as illustrated in Figure 3.

Episode ID	Drugs Direct/Indirect Costs	Medical D&I Costs	Theatre D&I Costs	Radiology D&I Costs	Nursing D&I Costs	Nursing Overhead Costs
12579	£50.33	£1,266.58	£2,582.19	£32.18	£1,040.43	£616.95
15672	£36.95	£578.75	£2,272.87	£32.18	£498.13	£320.73
18483	£156.35	£2,360.38	£3,798.88	£32.18	£1,296.46	£769.38
385440	£1.49	£1,787.91	£17.48		£957.92	£585.03
391312	£4.54	£1,826.04	£3,902.07		£816.99	£499.48
399243		£1,667.16	£2,069.17	£30.10	£1,275.74	£777.66
47	£4.98	£2,351.13	£4,088.40		£631.63	£375.76
11208	£37.23	£709.78	£1,764.44	£16.09	£569.37	£319.87
15622	£71.15	£2,484.02	£4,057.92	£32.18	£643.53	£382.91
17503		£170.28	£2,342.04		£5.61	£3.43
23078	£282.76	£983.05	£1,654.13	£80.45	£770.72	£457.05
32802	£77.25	£1,806.11	£3,329.38	£32.18	£723.13	£429.51
35659	£1.55	£2,214.67	£3,464.22	£32.18	£1,058.47	£628.37
398020	£21.82	£1,375.34	£2,638.77	£30.10	£1,126.96	£571.20

Figure 3. PLICS works at a granular level of patients who are linked to a consultant team.

What use can be made of the information generated is a final significant difference. SLR is useful for providing broad over views to feed an executive board or external regulators such as Monitor who are mainly concerned with the total picture of a trust’s position. PLC is a much more valuable tool for line managers and clinical teams because of its ability to expose the underlying variances in practice or outcomes associated with specific care pathways.

So What is the Answer?

Given the original purpose of the exercise, PLICS comes out on top for several reasons:

1. It provides more visibility into variances by eliminating aggregated views which can mask variances.
2. Its greater transparency can stimulate local understanding of the way performance directly impacts cost.
3. The granularity it provides enables clinicians to look at individual cases, thus enabling them to avoid overspends.

Having said this, it is important to understand that patient-level cost data, which is all PLICS really is, although useful, will not in itself provide actionable information needed to engage clinicians.

Why PLICS is Essential

The true value of patient-level costing is only achieved when it is linked to performance data to provide a full picture. This is the core rationale for PLICS. It is through the additional element of other associated information around cases, pathways, volumes, variations in performance and apportionment rules that clinicians and managers will be able to understand where any problems exist and what should be done to address them.

Take EBITDA, for example, which as we all know is the mantra of Monitor. The true value of EBITDA as a metric lies in how it can be linked to operational performance; otherwise, it is just another number to alienate clinicians. A poor EBITDA may be caused by a few factors, including low volume of cases, high cost of treatment, or overloading of overhead apportionment. Using analytics to pretest these factors helps pinpoint the real root cause and the specific cases and/or clinical teams responsible for the poor result.

Issue	Probable Causes	Possible Remedies
Low volume of activity	Poor referrals from GPs	Better marketing to GPs
	Outpatient appointments	Open up sessions or if low demand, scale down department
	Poor data	Ensure all activity attracts highest tariff by improving coding and completeness
	Understaffing	Recruit or shore up through bank staff
High cost of treatment	Poor LOS management	Benchmark and set targets
	Cancellations	Improve scheduling
	Wastage	Standardise treatment protocols
Overloading of overheads	Unit cost incorrectly calculated	Ensure true costs are accurate via reconciliation over time
	Department consumption wrongly allocated	Improve recording and use data to validate monthly
	Central and direct costs too high to absorb	Improve purchasing, reduce bank staffing levels or increase volume or value of activity

Is it Achievable?

PLICS is achievable because the main data sources which feed the costing elements can also be employed to support the other needed analytics around performance and treatment variation. All that is needed is an analytical system to generate the outputs and a reporting tool to provide the information in an easy-to-access format.

The combined information and costing approach ensures clinicians are engaged because it highlights problems among their patients and within their treatment plans, as demonstrated in Figure 4. It also enables them to understand and challenge the confounding factors outside of their direct control.

Linking this reporting to a performance management framework in which the data is openly shared and poor outcomes are challenged drives the behavioural changes required. With the right system, targets can be incorporated into the reporting, with alerts generated over time when real changes (positive or negative) occur.



Figure 4. Clinicians can view problems among their patients and within their treatment plans.

What are the Real Benefits of PLICS?

Those trusts who have adopted PLICS over the more rudimentary SLR route have found that it has empowered clinicians and managers to take ownership of their performance, resulting in improvements in financial position and fostering a culture of collective participation in determining future targets, plans and actions.

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