Cancer Services Performance Indicators (CSPI) Audit Report for the Loddon Mallee Region, 2017

V	Date	Author	Distribution	Comment
01	14/09/2018	ML	IS, YS, MK, MLo, RC and RB	First draft

1   Introduction

The Victorian State Government Department of Health and Human Services (DHHS) utilise the Integrated Cancer Services (ICS) to conduct audits of medical records to monitor the progress of multidisciplinary cancer care across the state. These audits, known as Cancer Services Performance Indicators (CSPI) audits, focus on key performance indicators (KPIs) pertaining to multidisciplinary team (MDT) recommendations, documented cancer stage at MDTs, documented Eastern Cooperative Oncology Group (ECOG) performance status at MDTs, communication of treatment plans to general practitioners (GPs), and supportive care screening (SCS). This report summarises the data obtained at health service across the Loddon Mallee region (LMR) for the calendar year 2017.

2   Method

The method used to conduct the CSPI Audit 2017 across the LMR is described in Appendix A. The sampling of potentially eligible patients and collection of audit data have previously been conducted by either LMICS or the North Eastern Melbourne Integrated Cancer Service (NEMICS). In this round of the audit in the LMR, however, DHHS performed central sampling while LMICS collected the audit data.

2.1   Eligibility criteria

Patients eligible for the LMR audit are Victorian residents diagnosed with cancer over the period 1/01/2017-31/12/2017 who received their initial treatment for the particular cancer at one of the following eight health services: Bendigo Health (BH), Echuca Regional Health (ERH), Mildura Base Hospital (MBH), Mildura Private Hospital (MPH), Saint John of God (SJOG) Hospital Bendigo, Swan Hill District Health (SHDH), Kerang District Health (KDH), and Kyabram District Health Service (KDHS). All of these health services have previously participated in the CSPI Audit in the LMR except for KDH and KDHS. The main host site was BH.

2.2   Patient sampling

Staff at DHHS sampled potentially eligible patients for LMICS using data from the Victorian Admitted Episodes Dataset (VAED), before providing a Microsoft Excel spreadsheet for data collection across the LMR. As LMR is a non-metropolitan region, there was an expectation to

include at least 250 patients from across the region in the audit and at least 70% across the two highest-volume sites (BH and SJOG).

DHHS identified quotas of patients to be audited at each health service and within each tumour stream in proportion to the actual numbers of patients at each site and within each tumour stream. The pre-defined quotas for each health service are provided in Appendix B. The patients to be audited to meet these quotas were identified through random centralised sampling, with a list of spares also provided in case patients met at least one exclusion criterion during auditing. Due to the potential for ineligibility, the auditors were expected to audit patients in the given order until the pre-defined quota for each tumour stream had been met or there were no patients left in the spares list. Please note that the patient sampling methodology employed in the 2017 CSPI Audit differs to the methodologies used previously and, thus, may not be directly comparable. This is why results from the current audit have not been compared with previous results.

2.3   Data collection

Across LMR, three LMICS staff members undertook data collection for the CSPI audit. Further auditing was conducted at KDHS by two local hospital staff. At the beginning of the auditing process, the eligibility of each patient was confirmed using pertinent information from the central medical record. Ineligible patients were excluded from the audit. Subsequently, the central medical records of each patient eligible for inclusion at a particular health service were checked against the following five KPIs:

> **1.** Documented evidence of MDT recommendations. The target set by DHHS was 80%.
>
> **2.** Documented evidence of cancer staging in the MDT recommendations. The target set by DHHS was 100%.
>
> **3.** Documented evidence of patient ECOG performance status in the MDT recommendations. The target set by DHHS was 100%.
>
> **4.** Documented evidence of communication of initial treatment plan to the patient's GP within two weeks of treatment initiation or MDT discussion (whichever came first). The target set by DHHS was 100%.
>
> **5.** Documented evidence of SCS in the central medical record. The target set by DHHS was 80%. Please note that this target has been increased from 50% in previous

CSPI audits, based on findings from the recent statewide Supportive Care Screening Point Prevalence Study.

For each eligible patient, either a 'yes', 'no', or 'N/A' was recorded against each of the five KPIs based on documentation in the central medical record. As MDT recommendations may be present in the CANMAP MDM software used at BH but not in the central medical record, a further post-hoc audit of KPIs 1-3 was conducted using CANMAP. The auditors input data directly into a password-protected version of the Excel template provided by DHHS before securely transferring the dataset to the Data and Quality Specialist at LMICS.

2.4   Data analysis

The proportion of LMR patients who met each KPI was calculated and expressed as a percentage (p). Five formulae were utilised:

$$1.\ p(MDT\ Recommendations) = \frac{\sum New\ cancer\ patients\ with\ documented\ MDT\ recommendations}{\sum New\ cancer\ patients\ audited} * 100$$

$$2.\ p(Disease\ Staging) = \frac{\sum New\ cancer\ patients\ with\ documented\ disease\ staging\ in\ MDT\ recommendations}{\sum New\ cancer\ patients\ with\ documentation\ of\ MDT\ recommendations} * 100$$

$$3.\ p(ECOG) = \frac{\sum New\ cancer\ patients\ with\ documented\ ECOG\ performance\ in\ MDT\ recommendations}{\sum New\ cancer\ patients\ with\ documentation\ of\ MDT\ recommendations} * 100$$

$$4.\ p(GP\ Communication) = \frac{\sum New\ cancer\ patients\ with\ documented\ communication\ of\ treatment\ plan\ to\ GP}{\sum New\ cancer\ patients\ audited} * 100$$

$$5.\ p(SCS) = \frac{\sum New\ cancer\ patients\ with\ documented\ SCS}{\sum New\ cancer\ patients\ audited} * 100$$

where $\sum$ denotes the summation.

The proportion of patients who met each KPI was also broken down by tumour stream. The results were presented graphically using bar charts. All data analysis was performed using Microsoft Excel 2013.

2   Results

2.1   Quotas of patients

The pre-defined quotas at LMR health services were met for each of the health services except ERH, where one fewer patient than originally intended was audited (Appendix B). However, this shortfall of one patient at ERH was more than made up for by some additional

auditing conducted at other sites. Overall, across all LMR health services, the minimum number of 262 (including pancreatic cancer patients) was met. The minimum proportion of 70% of patients from the two largest LMR health services (BH and SJOGB) was also met, with the actual proportion being 71% overall (Appendix B).

2.2 Proportions of LMR patients who met CSPI audit KPIs based on an audit of the central medical record

2.2.1 Overall proportions of LMR patients who met CSPI audit KPIs based on an audit of the central medical record

The proportions of LMR patients who met each of the five KPIs based on an audit of the central medical record, along with the corresponding targets, are shown in Figure 1. The KPI that was closest to the DHHS target was documented evidence of MDT recommendations, at 39% compared with a target of 80%. Of the 109 patients who had documented evidence of MDT recommendations, 50% had staging documented while 46% had ECOG performance status documented. These results are less than the staging and ECOG targets of 100% set by DHHS. The proportion of new cancer patients who had documented evidence of communication of treatment plan to GP was 53%, below the DHHS target of 100%. SCS was documented in 35% of audited LMR patients. The result for SCS is closer to the DHHS target of 50% used in previous years of the CSPI audit, but well below the new DHHS target of 80%.

2.2.2 Proportions of LMR patients who met CSPI audit KPIs by tumour stream, based on an audit of the central medical record

Across all tumour streams assessed, only endocrine-thyroid (ET) met the DHHS target of 80% for documented evidence of MDT recommendations, although the result is only for 1 patient (Figure 2). The worst MDT recommendation result was observed for the gynaecological tumour stream, with 0% of 14 patients having documented evidence. While no tumour streams met the DHHS target of 100% documentation of staging in MDT recommendations (Figure 3), the ET tumour stream met the DHHS target of 100% documentation of ECOG performance status in MDT recommendations (Figure 4). It should again be noted, however, that there was only one patient with ET cancer. Aside from low-volume tumour streams, the best staging and ECOG documentation were observed for breast and CRC MDM (Figures 3 and 4). The DHHS target of 100% GP communication was met

for the low-volume (n of 1) CNS tumour stream (Figure 5). The next best GP communication result was observed for the gynaecological tumour stream (71% of 14 patients). Aside from the low-volume ET tumour stream, the worst GP communication result was observed for those with skin cancer (38% of 39 patients). In terms of the fifth CSPI KPI, the DHHS target of 80% documented evidence of SCS was not met for any of the tumour streams (Figure 6). It should be noted, however, that the proportion of CNS, gynaecological and lung cancer patients with documented evidence of SCS exceeded the DHHS target of 50% that was used in previous years of the CSPI audit.

Figure 1: 2017 CSPI KPIs for LMR patients based on an audit of the central medical record
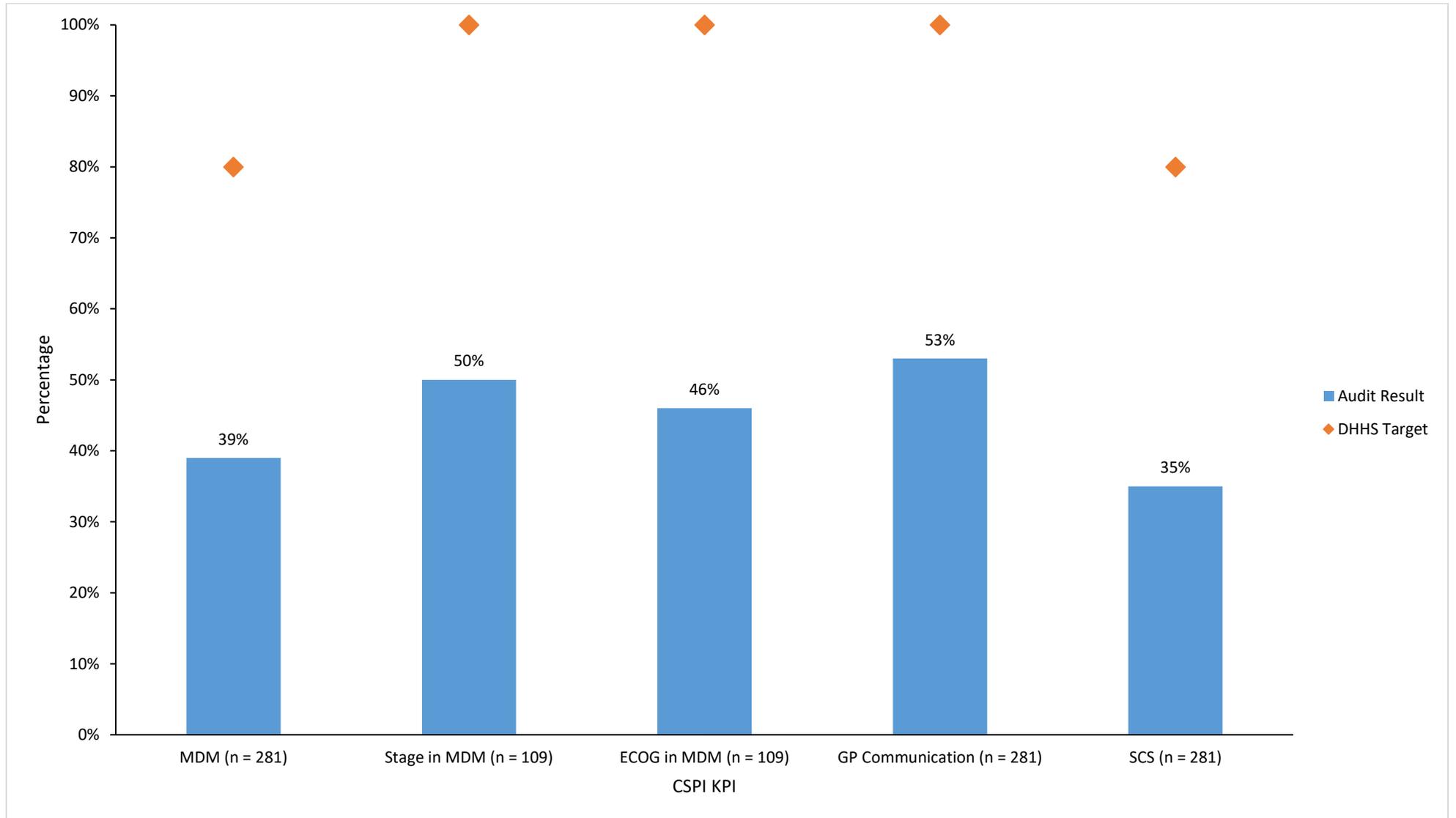
Figure 2: Documented evidence of communication of MDT recommendations for LMR patients by tumour stream, based on an audit of the central medical record
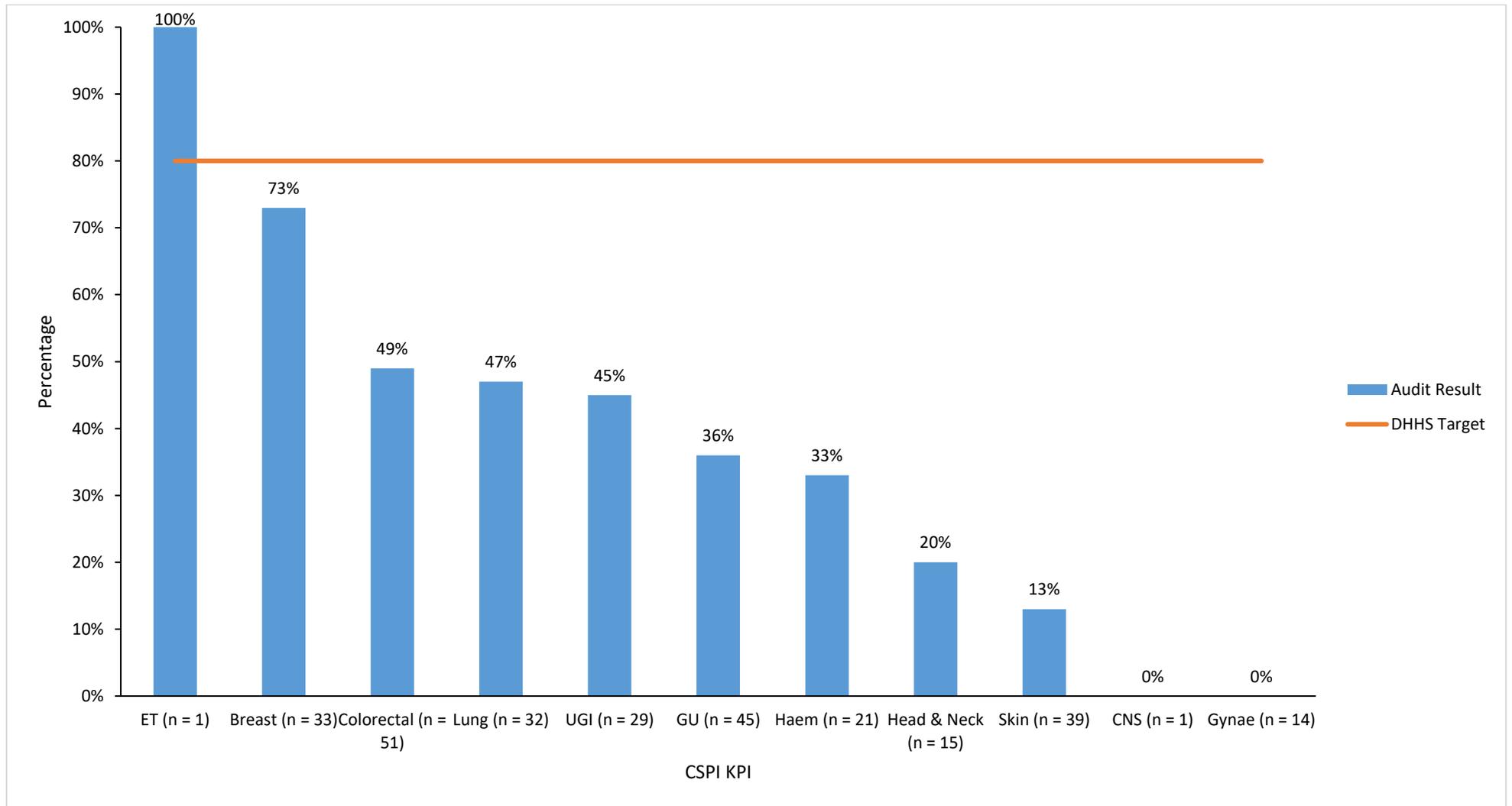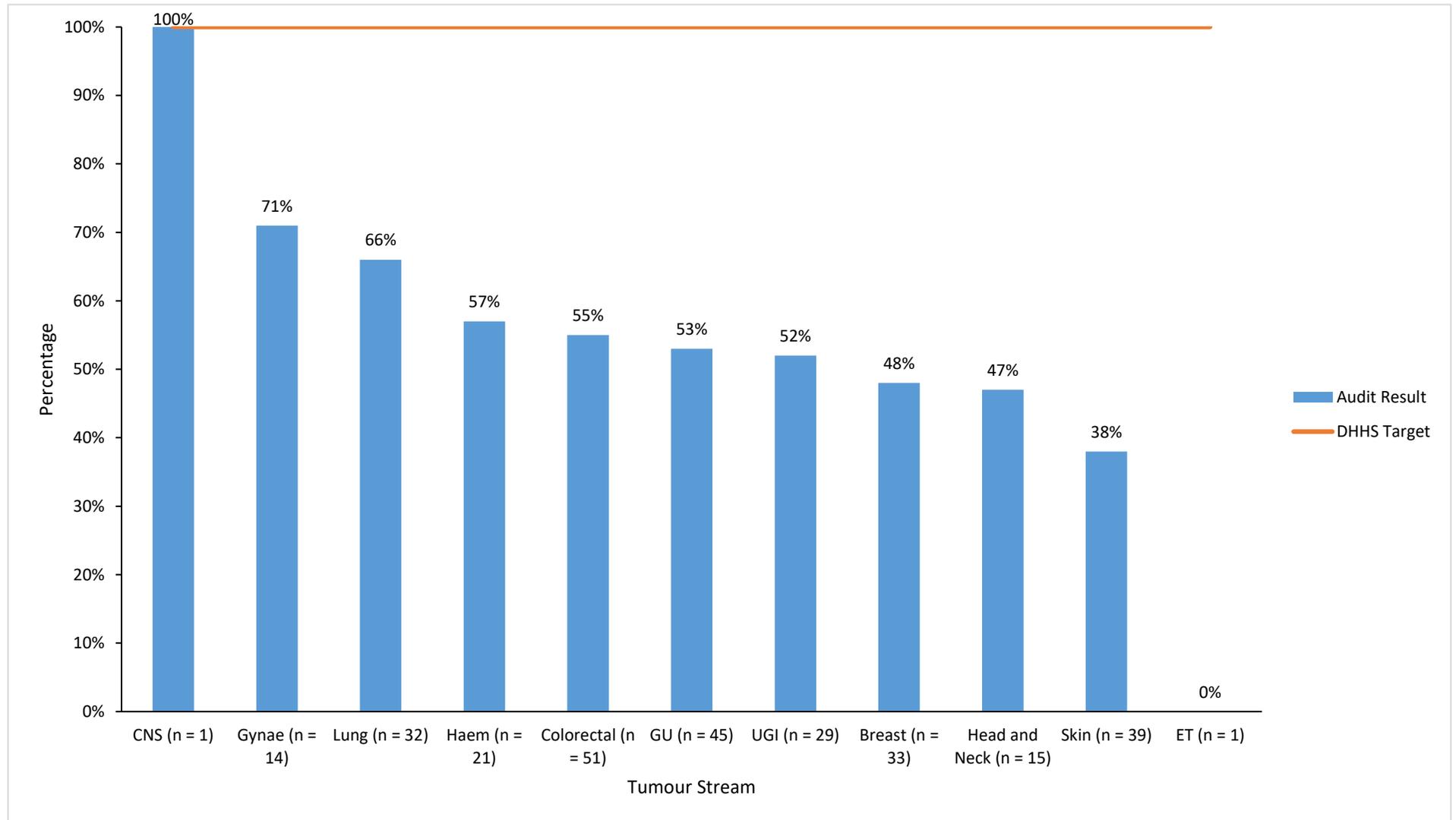
Figure 3: Documented evidence of staging in MDT recommendations for LM R patients by tumour stream, based on an audit of the central medical record
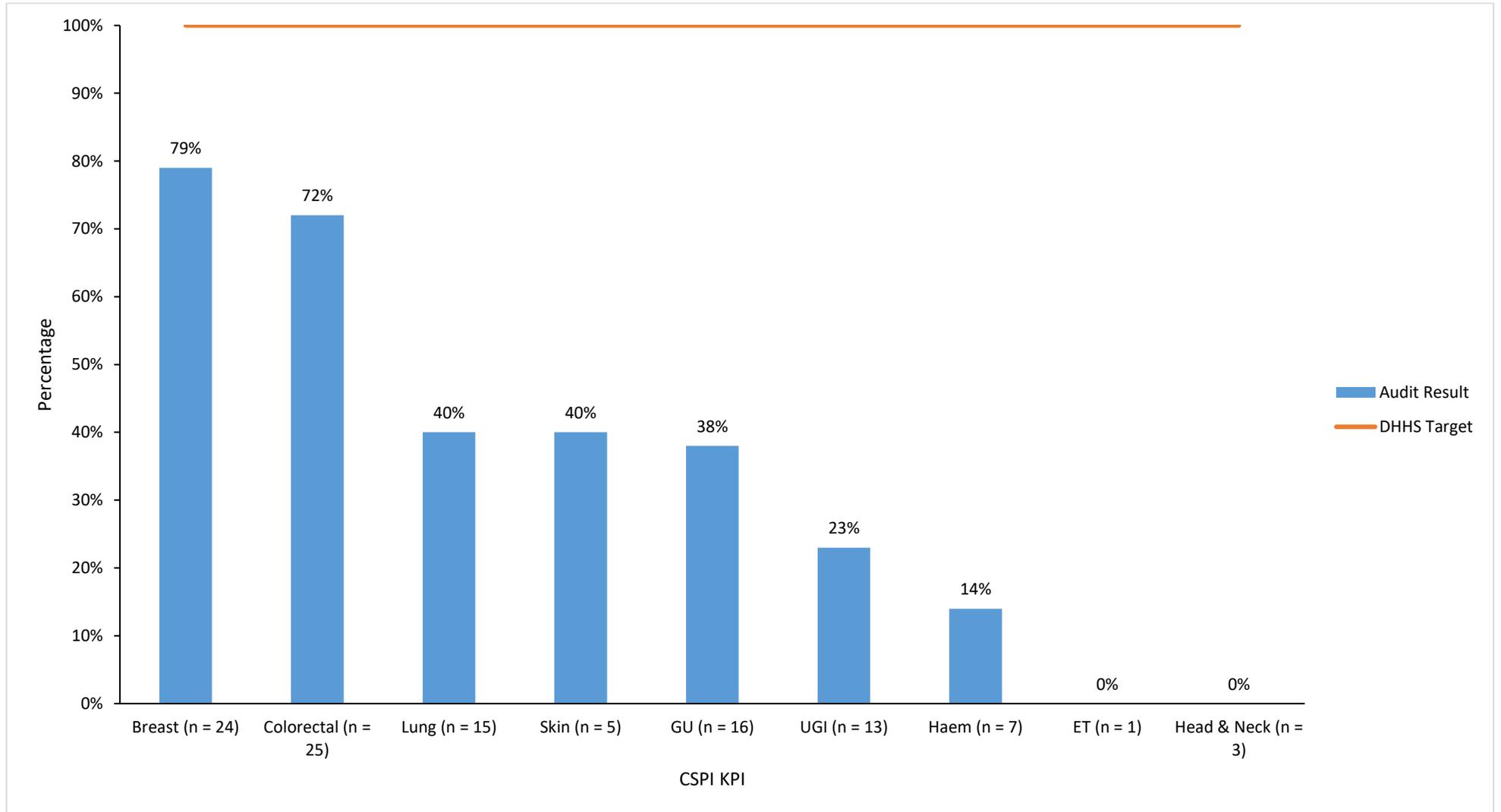
Figure 4: Documented evidence of ECOG performance status in MDT recommendations for LMR patients by tumour stream, based on an audit of the central medical record
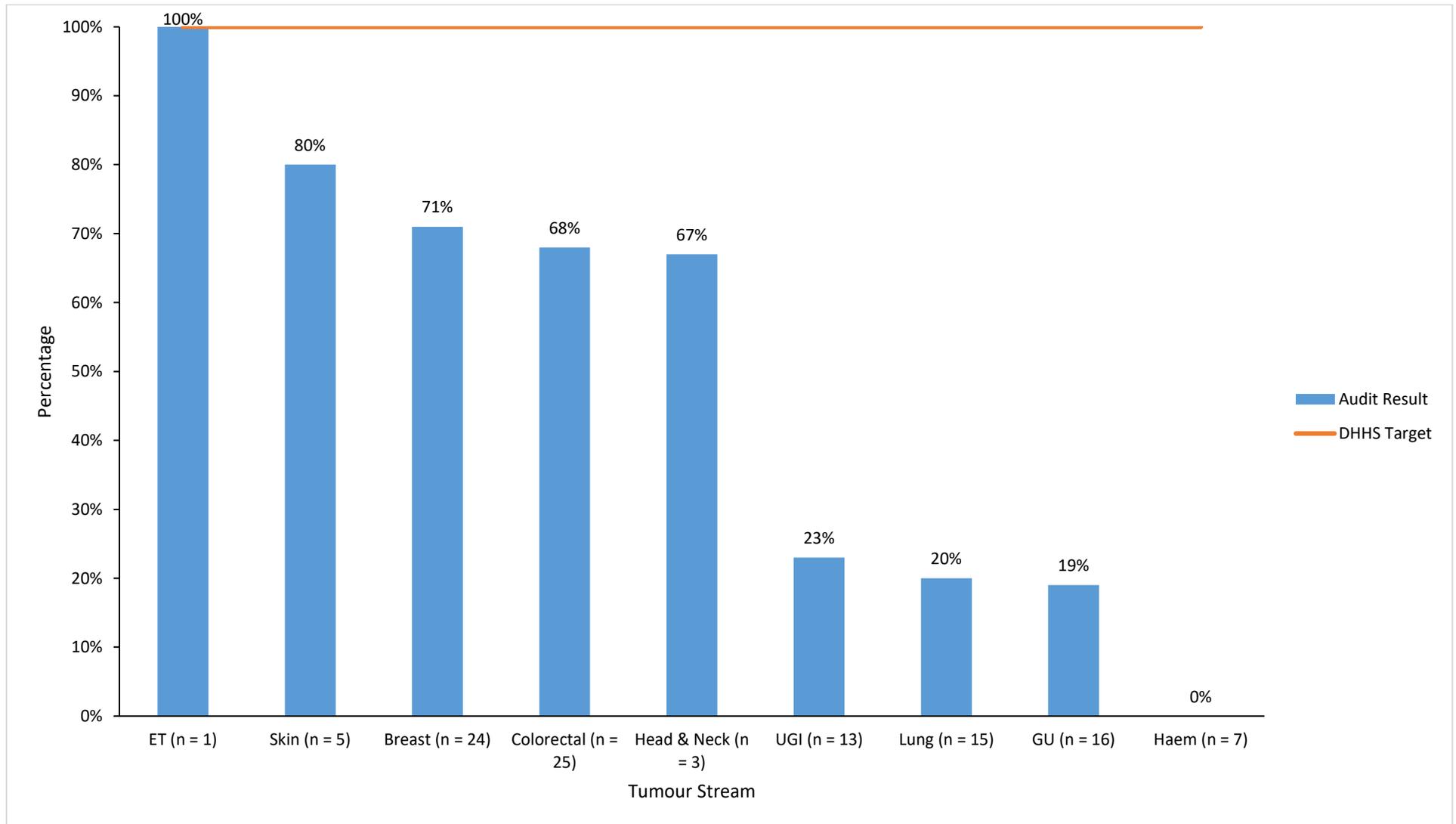
Figure 5: Documented evidence of communication of initial treatment plan to GP for LMR patients by tumour stream, based on an audit of the central medical record

Figure 6: Documented evidence of SCS for LMR patients by tumour stream, based on an audit of the central medical record
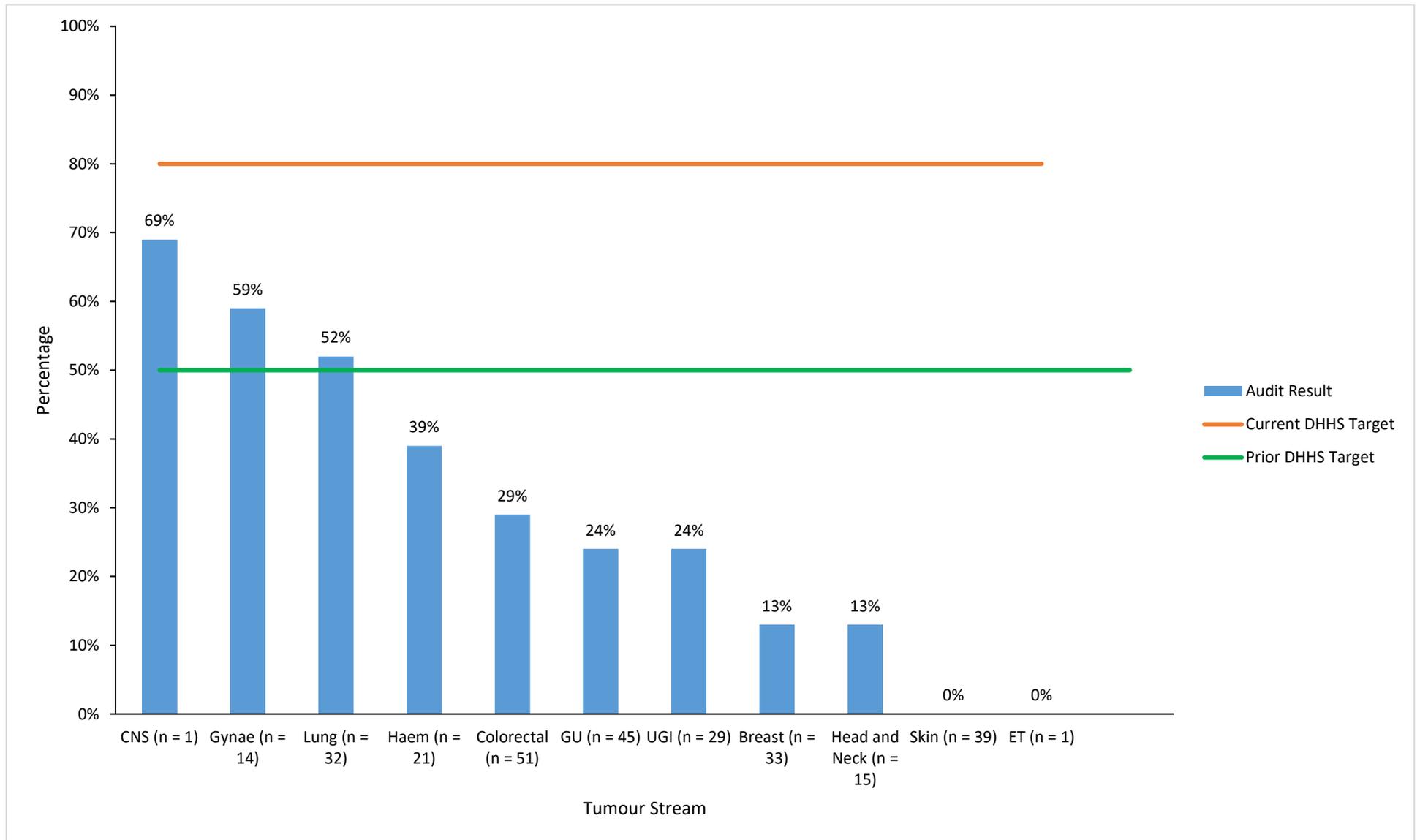
2.3   Proportions of LMR Patients who met CSPI Audit KPIs 1-3 based on additional post-hoc auditing of the CANMAP MDM software

2.3.1   Overall proportions of LMR patients who met CSPI audit KPIs 1-3 based on additional post-hoc auditing of the CANMAP MDM software

The proportions of LMR patients who met each of KPIs 1-3 based on an audit of both the central medical record and CANMAP, along with the corresponding targets, are shown in Figure 7. Overall, 137 (49% of) patients had evidence of MDT recommendations in CANMAP. This is 10% higher than the result of 39% based on an audit of the central medical record only, coming closer to the DHHS target of 80%. Of the 137 patients with evidence of MDT recommendations, 47% and 41% had documented staging and ECOG, respectively, in their MDT recommendations. The rates of staging and ECOG documentation following additional CANMAP auditing are similar to the rates based on an audit of the central medical record only.

2.3.2   Proportions of LMR patients who met CSPI audit KPIs by tumour stream based on additional post-hoc auditing of the CANMAP MDM software

The proportions of LMR patients who met KPIs 1-3 by tumour stream, along with the corresponding targets, are shown in Figures 8, 9 and 10. The DHHS target of 80% documentation of MDT recommendations was only met by the low-volume (n of 1) tumour stream of ET cancer. The next best result, 79% documentation of MDT recommendations for breast cancer patients, was only 1% below the DHHS target. There were no tumour streams that met the DHHS target of 100% staging documentation in MDT recommendations, while only the low-volume ET tumour stream met the DHHS target of 100% ECOG documentation in MDT recommendations.
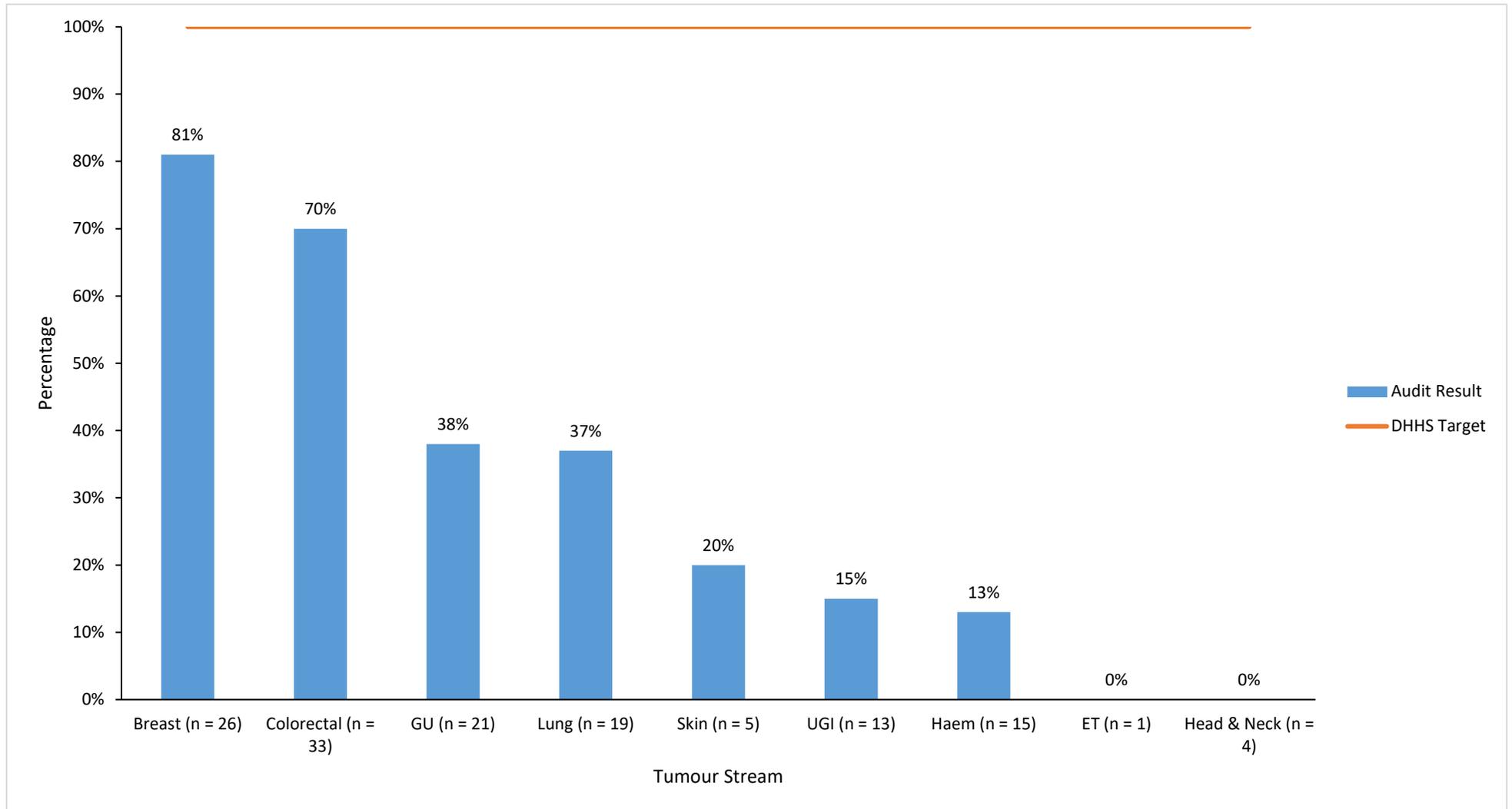
Figure 7: 2017 CSPI KPIs 1-3 for LMR patients, based on audits of both the central medical record and CANMAP MDM software
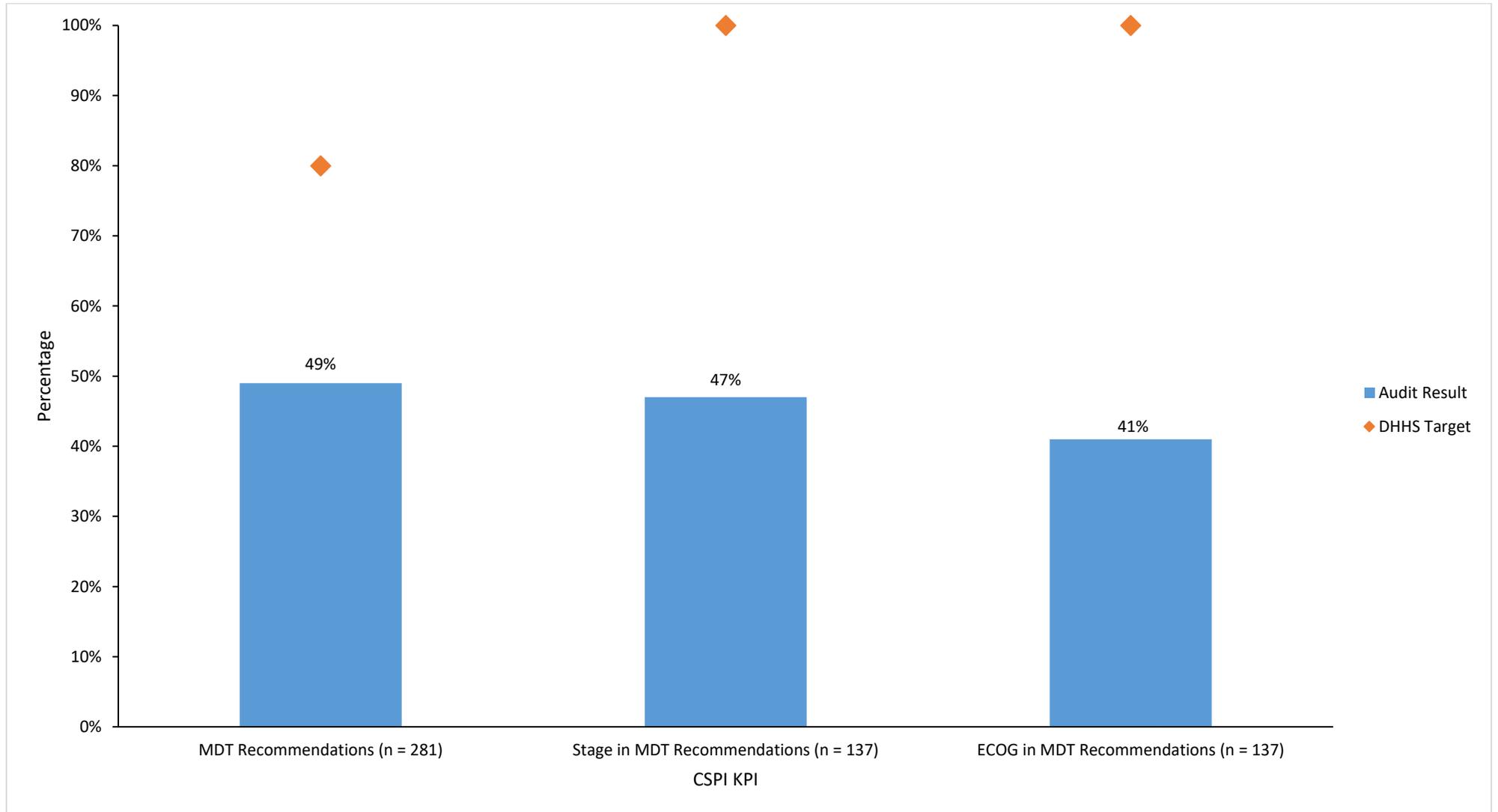
Figure 8: Documented evidence of MDT recommendations for LMR patients by tumour stream, based on audits of both the central medical record and CANMAP MDM software
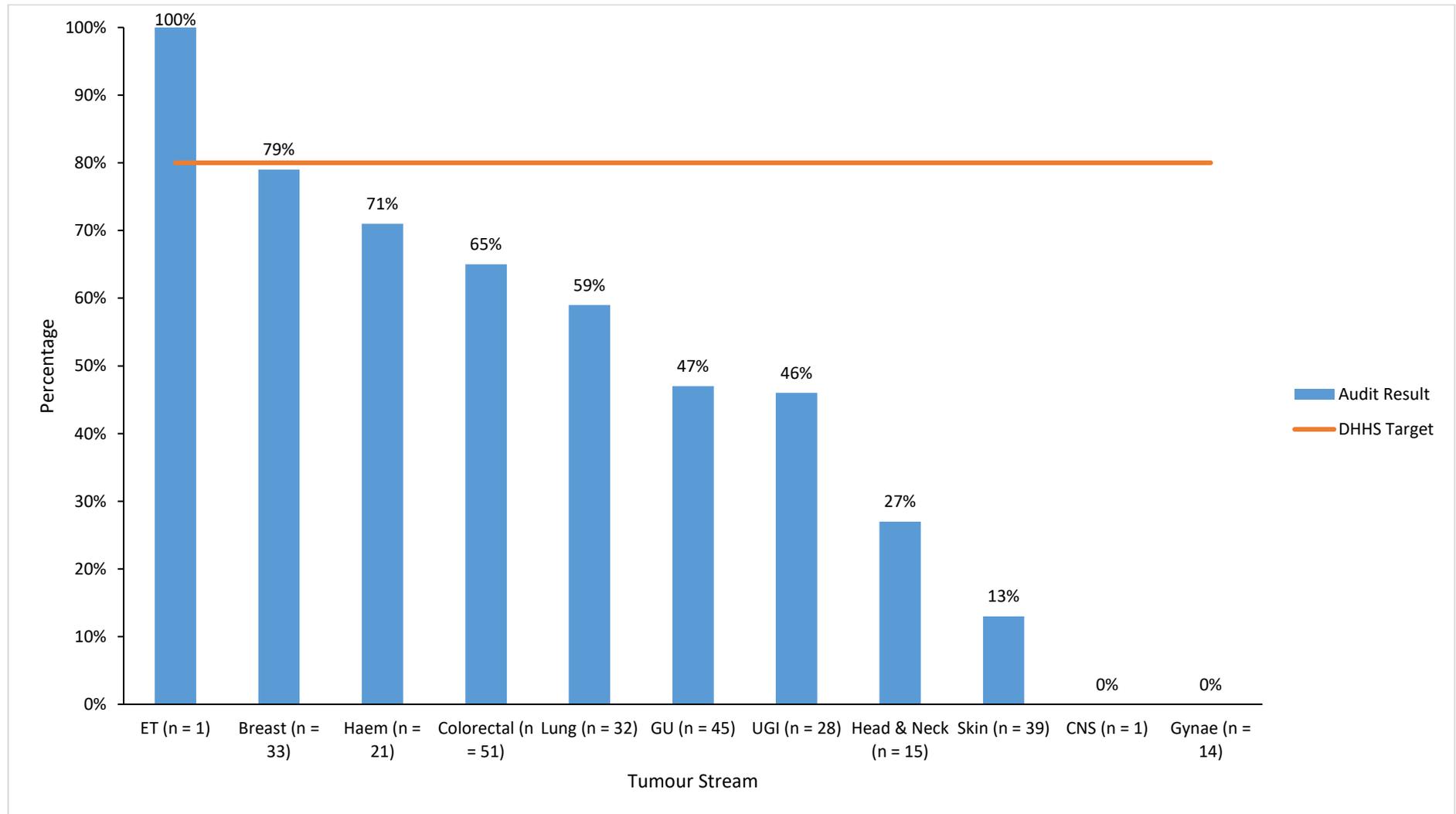
Figure 9: Documented evidence of staging in MDT recommendations for LMR patients by tumour stream, based on audits of the central medical record and CANMAP MDM software

Figure 10: Documented evidence of ECOG performance status in MDT recommendations for LMR patients by tumour stream, based on audits of both the central medical record and CANMAP MDM software
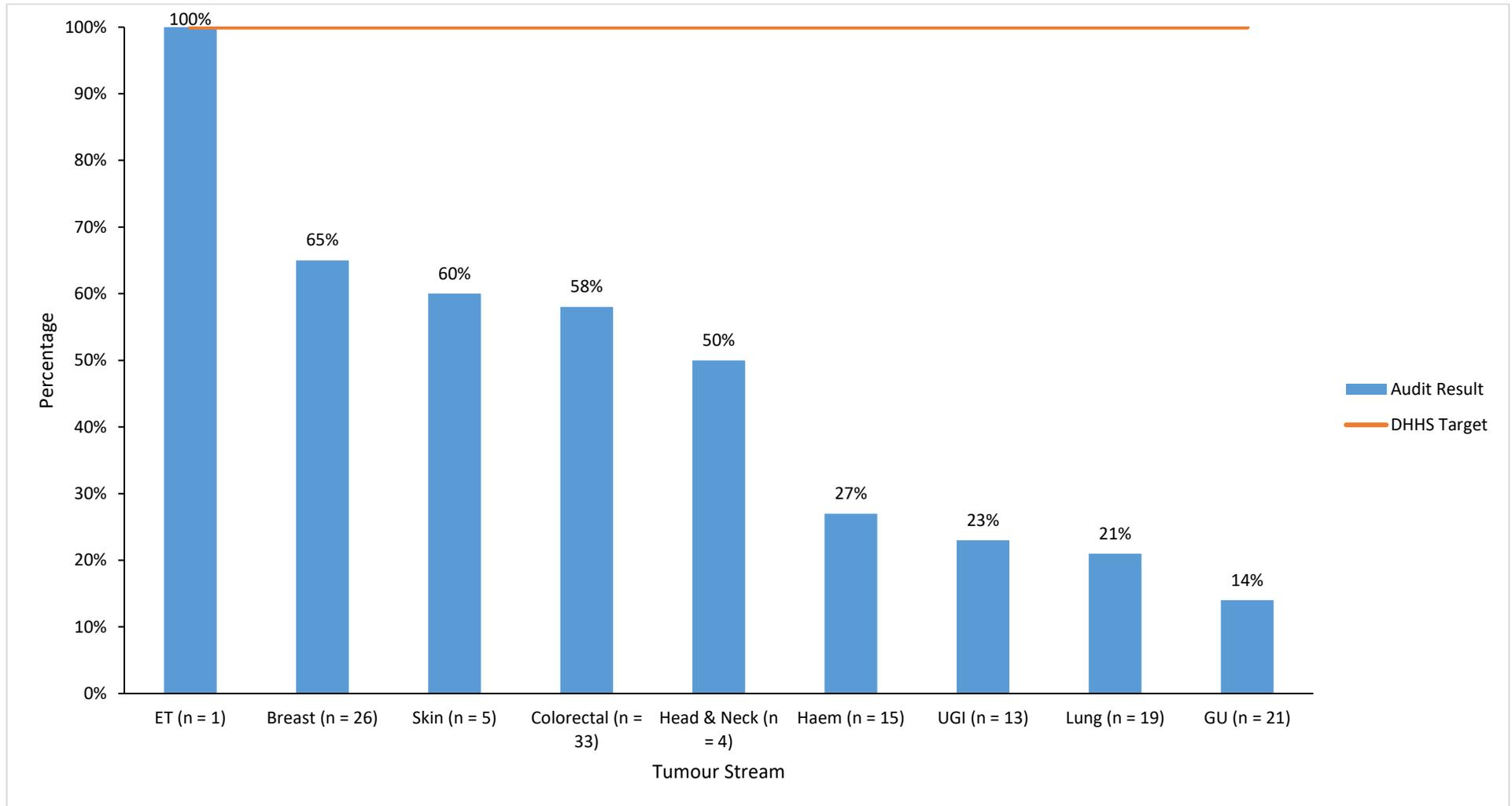
3.   Discussion

According to the results of the CSPI audit conducted among 281 cancer patients at LMR health services for the calendar year 2017, none of the performance targets set by DHHS were met. Overall, the KPI that came closest to meeting a DHHS target was 'MDT presentation', with documented evidence present in the central medical record for 39% of patients compared with a target proportion of 80%. The next best result was achieved for the SCS KPI, with a result of 35% compared with a target of 80%. The overall results for documentation of staging in MDT recommendations, documentation of ECOG in MDT recommendations, and documented communication of treatment plan to GP were all close to 50% - well below the corresponding DHHS targets of 100%. While the entry of staging and ECOG into the CANMAP system was previously optional, BH is currently implementing a new version of this system that includes mandatory fields for staging and ECOG. It is noteworthy that, although the LMR result for documented SCS is below the current DHHS target of 80%, it is closer to the DHHS target of 50% in previous years of the CSPI audit. Notably, the prior DHHS target of 50% documented SCS was met for the lung, CNS, and gynaecological tumour streams. Among all the tumour streams assessed at LMR health services, the results were consistently most favourable across the three MDT KPIs for breast cancer and CRC. This finding reflects the fact that BH runs a joint breast cancer and CRC MDM that is well attended by all specialities and non-medical staff.

Due to the potential for MDM recommendations from the CANMAP system to be missing from the central medical record, an ad-hoc audit of this MDM software was conducted. This additional auditing revealed that 10% (i.e. 28) more patients had MDT recommendations than were picked up in the central medical record alone. This result indicate the slight extent to which the lack of transfer of MDT recommendations from BH through to regional central medical records led to an underestimated proportion for KPI 1.

The results of this audit suggest room for quality improvements in the following aspects of the multidisciplinary cancer care provided to cancer patients in the LMR:
1. Continue to promote appropriate referrals to multidisciplinary team meetings (MDMs) and optimise the process of filing MDT recommendations in the central medical record.

5

2. Implement systems to send GPs letters and to file copies of these letters in the central medical record. This will be addressed through the new version of the CANMAP system.

3. Ensue supportive care screens that are conducted are done so on validated forms and placed in central medical records. Efforts should also be made to screen more patients – something that would be feasible following a recently-commenced LMICS review of the SCS process. This review has been triggered by clinicians' feedback that the current supportive care screening tool (SCST) is not fit for purpose as resources have not been allocated to meet all identified needs. Once this underlying issue has been addressed, then clinicians may be more likely to conduct SCS.

This audit has several strengths. Potentially eligible patients for the current audit were randomly sampled in proportion to subgroups of tumour stream. This means that the sample of LMR patients in the current audit is likely to be representative of the whole population of cancer patients treated at regional health services. Furthermore, the use of a Microsoft Excel spreadsheet streamlined data collection and may have improved data quality by minimising the potential for errors.

An important limitation of the current audit is incomplete information on KPIs at LMR health services. Auditing a patient's central medical record at one particular site is restrictive in that the auditors cannot account for MDT meetings, GP communication and SCSTs completed at other sites. Cancer patients who are first treated at a given hospital in LMR may also receive care at other hospitals within the region, in different regions or even interstate. This means that audit results presented here may underestimate the true results to an unknown degree. A particular example in this audit is gynaecological cancer patients, who have their MDMs and workup in Mercy Hospital in Melbourne.

A further limitation of this audit is the unclear distinction between clinical processes and administrative processes. One should note that documented evidence of KPIs provides a crude performance measure of the care provided to cancer patients in clinical practice. If a given auditor did not find documented evidence of a KPI in a central medical record, then the reason for this could be clinical or administrative. "Absence of evidence is not evidence of absence", as the maxim goes. It was shown, for instance, that 28 cancer patients who were presented at an MDM did not have the MDT recommendations filed in the central medical

record. Such a filing issue stems from the administrative process at the host site BH, where the MDMs are run. In order to improve KPIs across the LMR, one would need to focus on quality improvement in clinical services and related administrative processes.

4.   Conclusion

The current CSPI audit shows that, during 2017 at LMR health services, DHHS targets were not met for any of the five KPIs: MDT recommendations, staging in MDT recommendations, ECOG performance status in MDT recommendations, GP communication, and SCS. There is room for quality improvement in these KPIs. In the first instance, efforts should be made to improve the administrative process of filing documentation in the central medical records at regionals health services. Once documentation is optimised, then it will be possible to more accurately assess the clinical processes underlying KPIs.

5.   Acknowledgements

Appendix A: CSPI Audit 2017 Data Collection Method (Please see separate file)

Appendix B: Pre-defined and actual quotas of patients audited at Loddon Mallee health services by tumour stream

Health Service	Pre-defined no. patients (%)	Actual no. patients (%)
BH	121 (46%)	122 (43%)
SJOGB	63 (24%)	78 (28%)
MPH	23 (9%)	23 (8%)
MBH	21 (8%)	21 (7%)
ERH	17 (6%)	16 (6%)
SHDH	13 (5%)	13 (5%)
KDHS	2 (1%)	6 (2%)
KDH	2 (1%)	2 (1%)
Total	262 (100%)	281 (100%)

BH – Bendigo Health, SJOGB – Saint John of God Bendigo, MPH – Mildura Base Hospital, MPH – Mildura Private Hospital, ERH – Echuca Regional Health, SHDH – Swan Hill District Health, KDH – Kerang District Health, KDHS – Kyabram District Health Service