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The impact of changes in local CCG guidelines on the provision of NHS funded POLCE; an 11 year retrospective analysis

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COVER LETTER

Growing financial restraints on the NHS have led to increased restrictions on access to cosmetic surgeries by tighter regulations though care commissioning guidelines. A lot of these patients are being deprived of genuine treatment which is having a negative impact on their quality of life. This study is the first of its type which reviews a large central database assessing the trends observed in recent years in terms of the proportions of patients selected. It highlights an important and overlooked issue in NHS England and one that needs to be addressed nationally.

Dr Shafiq Rahman

TITLE PAGE

The impact of changes in local CCG guidelines on the provision of NHS funded POLCE; an 11 year retrospective analysis

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ABSTRACT

Objectives: The main objective of this study was to assess the impact of changes in care commissioning policies on NHS funded cosmetic procedures over an 11 year period at our centre.

Setting: The setting was a tertiary care hospital in London regulated by the North Central London Hospitals NHS Trust care commissioning group

Participants: We included all patients logged on to our database at the time of the study which was 2,087 but later excluded 61 from analysis due to insufficient information.

Primary and secondary outcome measures: The main outcome measures were the results of tribunal assessment for surgery which was either accepted, rejected or inconclusive based on the panel meeting.

Results: There were a total of 2,087 patient requests considered between 2004 and 2015 of which 715 (34%) were accepted, 1,311(63%) were declined and 61(3%) had inconclusive results. The implementation of local CCG guidelines has reduced access to cosmetic surgeries. Within this period the proportion of procedures accepted has fallen from 36% in 2004 to 21% in 2015.

Conclusion: Local POLCE guidance is an effective, though not evidence-based selection process to reduce access to cosmetic surgery in line with increasing financial constraints. However, patients with a physical impairment may not receive treatment in comparison to previous years and this can have a negative impact on their quality of life.

Key words: POLCE(procedures of limited clinical effectiveness) , care commissioning group, plastic surgery, guidelines

STRENGTHS AND LIMITATIONS

- Large patient cohort assessed over an 11 year period
- First study of its nature observing a trend in POLCE due to guideline changes at a single centre
- Limitation was that there were some inconclusive results that could not be traced

INTRODUCTION

Attitudes towards beauty are culture-bound and have varied across our history, with modern media heavily shaping the emphasis on a particular image. Inherently, there is an increasing pressure on people to correct aberrations of their appearance, which, in the UK has been observed by greater demand for aesthetic surgeries[1]. Cosmetic procedures can have psychological and functional benefits[2,3]. The implications of growing financial pressures however on the NHS have led to care commissioning groups restricting access[4,5] through the introduction of local guidelines[4,6]. This has also been influenced by national guidelines issued through BAPRAS[7] which emphasize the need for functional symptoms. However, their

application has often been arbitrary and clinicians have criticised them for being impractical and not evidence based[6].

In this study, we review the effects of changes to local guidelines on selection practices for NHS funded cosmetic procedures. In our centre, any POLCE (Procedure of Limited Clinical Effectiveness) request is discussed at a multi-disciplinary exceptional treatment panel. The panel uses a homogenous assessment criteria with information from surgical assessments, clinical photography, psychological assessment and standardised psychometric questionnaires to consider the suitability of surgery on both aesthetic and psychosocial grounds, alongside risks. All of the applicants are reviewed by this criteria prior to selection. Psychological assessment is vital to filter out patients who should access psychological treatment as opposed to surgery, which in these cases would be associated with undesirable outcomes[8]. Our assessment was based on the guidelines issued by the North Central London care commissioning group. They have issued general criteria including being a non-smoker, having a minimum age of 18, having a significant impairment of activities of daily living as well as not suffering from depression, anxiety, obsessive compulsive disorder or body dysmorphic disorder. There has also been procedure specific guidelines set out for each different clinical condition. Our panel collated information through both psychological and physical assessment in view of the general as well as procedure specific criteria set out by the CCG. The selection panel was set up locally and consisted of a plastic surgeon as well as a clinical psychologist. Both of which had equal input into deciding whether or not patients would be approved.

The objective of this retrospective analysis was to analyse a large patient cohort in a single centre over a significant time period. It allowed for assessment of the impact of changes in POLCE guidance on the provision of cosmetic surgeries within the NHS.

METHODOLOGY

Data collection was retrospective involving analysis of a central database that recorded POLCE requests between 2004 and 2015. Data collected included the date of the panel meeting, the surgery requested and the outcome of the meeting (i.e. provisionally accepted, accepted declined or inconclusive). Patients who were provisionally accepted were further followed up to determine the eventual outcome so our data represented those who had surgery, those who were rejected for surgery and cases which were inconclusive. We included all patients who were logged on to our database(2,087 cases). This aided to eliminate bias and obtain a fair representation but we later had to exclude those from analysis who had insufficient details on our system and whose outcomes could not be traced. This was the inconclusive group.

RESULTS

There were a total of 2,087 cases between the year 2004 to 2015 of which 715(34%) were accepted, 1,311(63%) were declined and 61(3%) had inconclusive results. The proportion of tribunal cases accepted per year are demonstrated in the graph below:

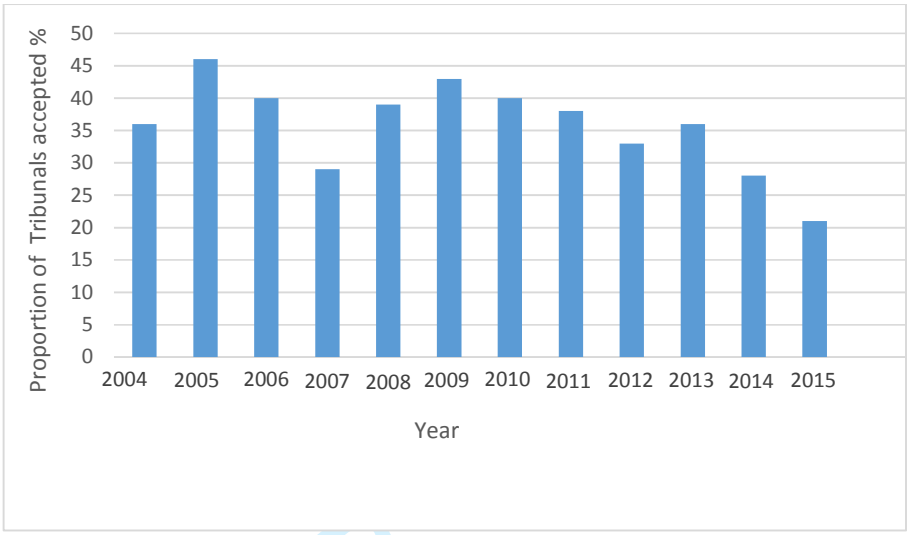

Figure 1: Proportion of tribunal cases accepted for surgery annually between 2004-2015

There were a total of 225 tribunals concerning breast augmentation of which 158 (70%) were declined, 59 (26%) were accepted and 8 (4%) were inconclusive. The percentage proportion of breast augmentations accepted and rejected annually is demonstrated in table 1 as follows:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
% Accepted	0	27	17	23	19	12	15	50	20	31	50	18
% Rejected	100	73	83	77	81	88	85	47	80	38	37	82
Inconclusive%								3		31	13	

Table 1: Percentage of breast augmentations accepted annually between 2004 to 2015

In total there were 565 tribunals concerning abdominoplasties, of these 325 were declined, 217 were accepted, 23 had inconclusive results. The annual percentages of those rejected and approved at tribunals are given below in table 2:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
% Accepted	80	36	52	26	49	30	40	47	48	37	42	21
% Rejected	20	64	48	74	51	70	58	53	50	62	50	74
Inconclusive%							2		2	1	8	5

Table 2: Percentage of abdominoplasties accepted annually between 2004 to 2015

There were 249 tribunal cases regarding breast reduction surgeries overall, of these 132(53%) were rejected, 111(45%) were accepted and the remainder had inconclusive results. The following three years had the highest proportion of breast reduction surgeries rejected: 2015 (80% declined), 2014 (60% declined) and 2013 (50% declined).

The majority of mastopexies were declined totalling to 107 cases overall. Across the sampling period 20 were approved. Six liposuctions were approved between 2004 and 2015.

There was a 36% acceptance rate for breast augmentation surgery between January to July of 2015 which decreased to 25% from August to December of 2015. The acceptance rate for breast reduction surgeries decreased from 55% to 18% in the same time period.

There have been a number of inconclusive results in our study and they represent patients which were lost to follow up or who's records could not be traced. For this reason they were not considered as part of the main data set as their outcomes were unknown.

Our results have also included a large variety of other surgery types ranging from rhinoplasty, otoplasty, body contouring and mastectomies which have constituted the remainder of the tribunal figures. Their discussion however would be beyond the scope of this article and we have primarily focused on those surgeries which have been more common as well as having been affected by guideline changes at our centre.

DISCUSSION

The implementation of local CCG guidelines has restricted access to cosmetic surgeries. Overall, it has reduced the proportion of procedures accepted at tribunals from 36% in 2004 to 21% in 2015. In 2011 the acceptance rate was 38%, this figure fell after the implementation of the 2012 guidelines to 33% and continued to fall after the introduction of new guidelines in 2013 to 21% by the year 2015. Overall there has been an increase in the proportion of procedures rejected from 64% in 2004 to 71% in 2015. The trends observed suggest stricter regulation by care commissioning groups over time with less surgeries accepted and more declined. Our results have been measured against a number of guidelines issued by the North Central London care commissioning group. These have been subject to numerous changes over time and are amalgamated in figure 2. Three sets of modifications were introduced to policies in the years 2012, 2013 and 2015.

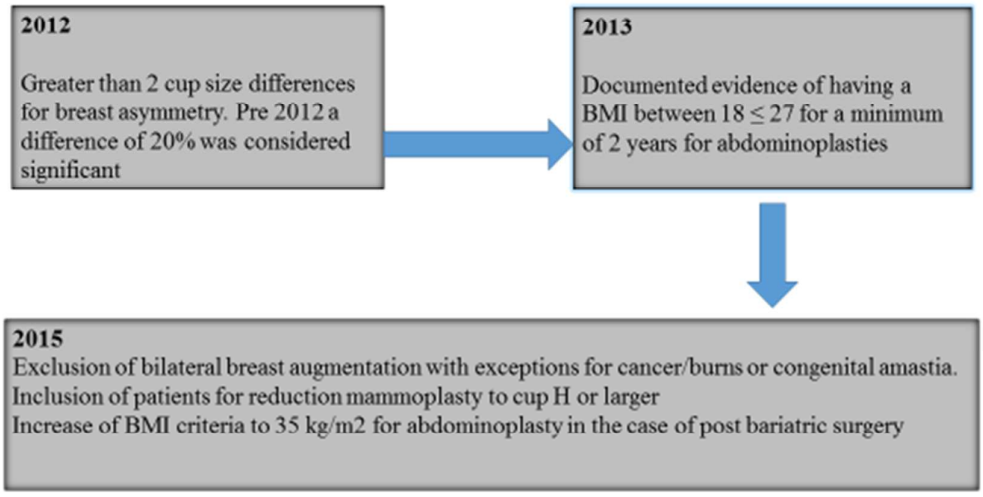

Figure 2: Changes in guidelines over the years issued by the North Central London Hospitals NHS Trust care commissioning group

Effects of changing policies

Guidelines issued by the Central North London CCG have changed. Prior to 2012, breast augmentation surgery were accepted as long as there was a minimum of a 20% percent difference in breast sizes however this increased to a difference of more than 2 cup sizes by 2012. This has decreased the proportion of these surgeries accepted from 50% in 2011 to 18% by the year 2015.

In 2013 the North Central London Care Commissioning group altered their selection criteria for abdominoplasties by setting the BMI standard at between 18 to ≤ 27 with documented evidence for a minimum of 2 years. This reduced the proportion of abdominoplasties accepted from 37% in 2013 to 21% in 2015 and reflects that the new guideline has decreased the ratio of successful applicants in getting abdominoplasties approved.

As of July 2015, new changes were implemented. These included exclusion of bilateral breast augmentation with exceptions being cancer/burns or congenital amastia. Reduction mammoplasty criteria was changed to having a breast size to cup H or larger. Abdominoplasty for post bariatric surgery patients who have lost at least 50% of original excess weight must have a BMI limit equal or less than 35 kg/m2 which marks an increase to the previous limit of 27 kg/m2. The short impact of these new guidelines were assessed over 6 month periods both before and after implementation. There was a 36% acceptance rate for breast augmentation surgeries between January to July of 2015 which decreased to 25% from August to December of 2015 after the new policy came into practise. The acceptance rate for breast reduction surgeries decreased from 55% to 18% in the same time period after introduction of the new guidelines.

One of the main limitations of the study was the inconclusive set of results, however, their proportion was kept low with regards to the data set overall.

Compliance with guidelines

Compliance with POLCE guidance has often been criticised for poor implementation and not being adhered to with clinical discretion having overridden policies at times[6]. At our centre there have been 20(16%) cases of mastopexies and 6(16%) cases of liposuctions approved when local CCG guidance states these procedures should not be funded. In looking at these 26 patients' medical notes, there have been important clinical and psychological grounds for these surgeries to be approved. In the case of liposuctions, the predominant indication has been lipodystrophy causing an unusual appearance (e.g. large buffalo hump) associated with significant psychological distress for which patients have genuinely had difficulty in coping with. Similarly, for mastopexies, in addition to there being psychological indications for surgery, there has also been strong clinical grounds for approval. This has included skin eczema underneath the breasts following significant weight loss as well as severe or unusual involutional changes of the breasts with ptosis. It is therefore important to note that whilst guidelines should be complied to, there should be room for clinical decision making.

National variation of guidelines

There is significant variation in policies on how to manage POLCEs. This has been seen in the case of bilateral breast reduction (BBR) where 21 primary care trusts out of 245 have

previously reported that they would not fund BBRs[9]. Variation between local and national guidelines have also existed[4]. Trusts offering BBR showed considerable discrepancy in terms of their selection criteria with 81 primary care trusts reporting that a minimum of 500g resection per breast is needed whilst 5 required more than 750g. Cup size criteria has also varied amongst trusts from DD to F and some have mandated the use of 3D body imaging to delineate breast volume[9]. National guidelines concerning reduction mammoplasty published by BAPRAS[7] in 2014 have been clearly modified locally at different trusts in the UK[9]. This is most likely due to the fact that policies from BAPRAS are clinically informed and evidence-based, whereas those issued locally are driven by financial constraints. In a study by Henderson[10], it has been identified that gross variation exists in local guidelines across many different procedures when compared to national policies. This has applied to many surgeries including removal of implants, mastopexy, abdominoplasty, facelift, blepharoplasty, rhinoplasty, pinnaplasty, body lifting, surgery for gynaecomastia as well as tattoo removal. Only 62% of Trusts within the UK have commissioned abdominoplasties[10]. Again significant variation in terms of policies have been exhibited with the BMI criteria ranging from 25 to 30 kg/m2 across different trusts whilst national guidelines set by AOPS have set an upper BMI limit of 27 kg/m2[10]. Only nine percent of primary care trusts allow funding for mastopexy if there is significant ptosis of the nipple areolar-complex. Similar discrepancies for other procedures have been noted and this has produced the notion of a "postcode lottery"[11], where, geographical differences influence whether a procedure can be approved or not.

It is fair to state that therefore certain patients who have a physical impairment may be deprived of surgical intervention based on their location as guidelines vary across the country. This can be overcome if a homogenous set of policies are adapted nationally so that all patients are given an equal opportunity. This concept has been re-iterated in the literature by Russell et al[12]. A source of the problem may arise from funding differences because historically commissioning of resources is influenced by population size as well as socioeconomic status. Areas like London have been renowned to obtain a higher percentage budget than the national average[13]. This problem can be perhaps overcome by a more even distribution of budget so that regional differences in policies are minimized. The BMA has also emphasized that care commissioning groups should work more closely across different regions and adhere to national guidelines[14]. POLCE could be used to work towards national guidance. However, policies may also appeal to clinicians if there is room for clinical decision-making and evidence-based recommendations, not just guidance on process.

One issue evident from our study is that the proportion of patients having their procedures approved over the last 11 years at tribunals has reduced significantly. This therefore raises the question whether patients are unable to access treatment that may be of benefit to their quality of life. It would be helpful to know whether the trend observed in this study is the same nationally across the UK. The authors would like to therefore encourage similar work to be conducted at other centres to see if the results are mirrored. We may be living in an NHS which is denying patients genuine treatment for physical and psychological conditions that they have.

CONCLUSION

The changes in guidelines for cosmetic surgeries at our centre have overall reduced the number of procedures approved at the exceptional treatment panel meetings between 2004 to 2015. This is perhaps reflective of growing financial pressures on the NHS in which selection criteria have been made more strict. This ultimately means that patients with a physical impairment may not receive the treatment in comparison to previous years. It would be good

to compare our data to decisions made in other localities. Compliance with guidelines at our centre in the case for both liposuction and mastopexy has not been 100% as 16% of both these procedures were approved. Non-compliance is attributable to clinical decision about the difficulties presented by the individual person and how these fit with the overall aim of the guidance in addressing disfigurement, functional problems, and to a lesser extent psychosocial distress. A wide variation in policies exists across trusts within the UK when compared to our centre. This has meant that a "postcode lottery" may dictate whether or not a patient is eligible for treatment. Differences in commissioning of funds is likely to be a key factor and perhaps policies can be made more homogenous if a more equal distribution of budget is allocated.

Contributorship statement

All authors involved in this study have played a significant role and have abided to the ICMJE guidelines. They have all had 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published.

Shafiq Rahman – manuscript write up, data collection, analysis and final approval

Benjamin Langridge - manuscript write up, data collection, analysis and final approval

Nadine Hachach-Haram – manuscript write up, design, revision and final approval

Esther Hansen - manuscript write up, data collection, analysis, revision and final approval

Anna Bootle - data collection, analysis, revision and final approval

Nicola Bystrzonowski - design, analysis, revision and final approval

Afshin Mosahebi - design, analysis, revision and final approval

Stephen Hamilton - design, revision, analysis and final approval

Competing interests

The authors have no competing interest

Data sharing statement

The authors grant access for the data in this article to be shared through open access

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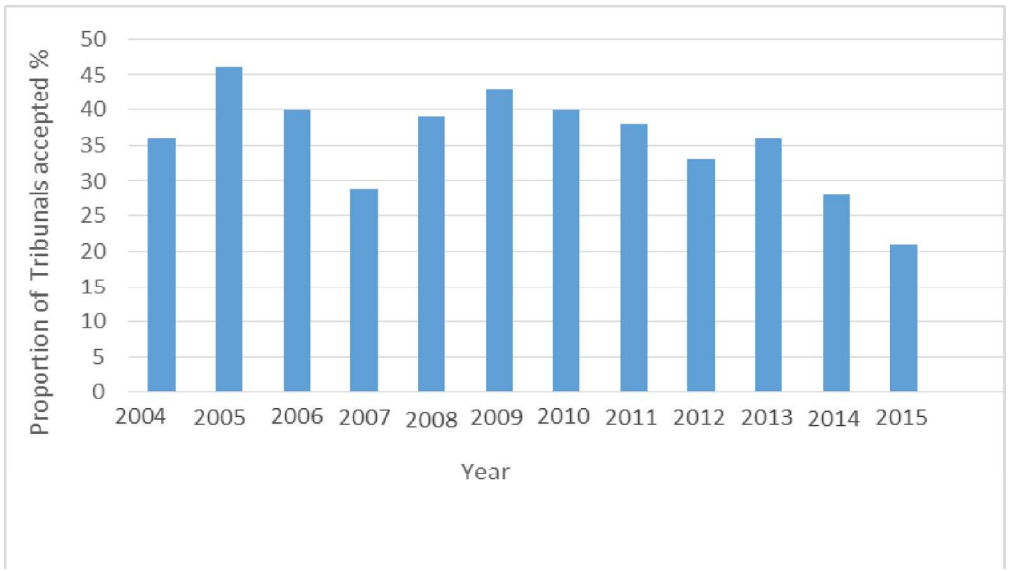

Figure 1: Proportion of tribunal cases accepted for surgery annually between 2004-2015

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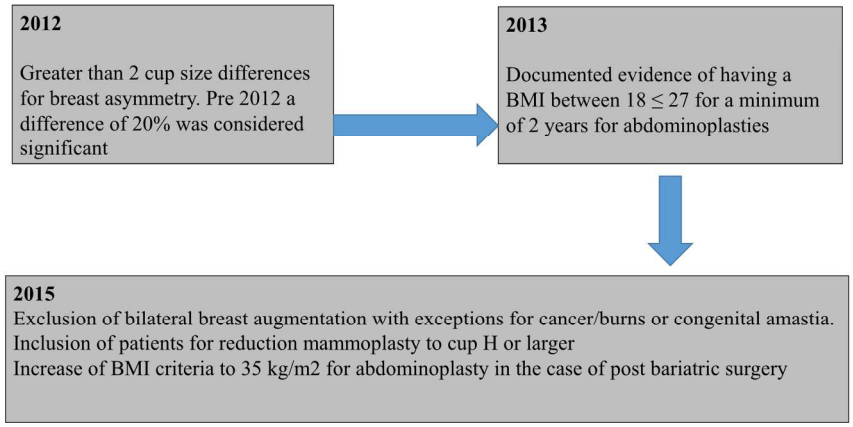

Figure 2: Changes in guidelines over the years issued by the North Central London Hospitals NHS Trust care commissioning group

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STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology*

Checklist for cohort, case-control, and cross-sectional studies (combined)

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	2
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3,4
Objectives	3	State specific objectives, including any pre-specified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	4
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	4
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	4
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	*4*
Bias	9	Describe any efforts to address potential sources of bias	4
Study size	10	Explain how the study size was arrived at	4
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	n/a
		(*b*) Describe any methods used to examine subgroups and interactions	n/a
		(*c*) Explain how missing data were addressed	4
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed	4

		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	
		(*e*) Describe any sensitivity analyses	n/a
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	4
		(b) Give reasons for non-participation at each stage	6
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	n/a
		(b) Indicate number of participants with missing data for each variable of interest	6
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	n/a
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	5,6
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	5,6
		Cross-sectional study—Report numbers of outcome events or summary measures	5,6
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	5,6
		(*b*) Report category boundaries when continuous variables were categorized	n/a
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	n/a
Discussion			n/a
Key results	18	Summarise key results with reference to study objectives	6,7
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	7
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	6,7,8
Generalisability	21	Discuss the generalisability (external validity) of the study results	n/a
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	n/a

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Primary Subject Heading:	Surgery
Secondary Subject Heading:	Health policy, Evidence based practice
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Article type: Original article

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Conclusion: Local POLCE guidance is an effective, though not evidence-based selection process to reduce access to cosmetic surgery in line with increasing financial constraints. However, patients with a physical impairment may not receive treatment in comparison to previous years and this can have a negative impact on their quality of life.

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- Large patient cohort assessed over an 11 year period
- First study of its nature observing a trend in POLCE due to guideline changes at a single centre
- The main limitations were that there was some inconclusive results that could not be traced as well as study being retrospective in design.

INTRODUCTION

Attitudes towards beauty are culture-bound and have varied across our history, with modern media heavily shaping the emphasis on a particular image. Inherently, there is an increasing pressure on people to correct aberrations of their appearance, which, in the UK has been observed by greater demand for aesthetic surgeries[1]. Cosmetic procedures can additionally have psychological and functional benefits[2,3]. The implications of growing financial pressures however on the NHS have led to care commissioning groups restricting access[4,5] through the introduction of local guidelines[4,6]. This has also been influenced by national guidelines issued through BAPRAS[7] which emphasize the need for functional symptoms. However, their

application has often been arbitrary and clinicians have criticised them for being impractical and not evidence based[6].

In this study, we review the effects of changes to local guidelines on selection practices for NHS funded cosmetic procedures. In our centre, any POLCE (Procedure of Limited Clinical Effectiveness) request is discussed at a multi-disciplinary exceptional treatment panel. The panel uses a homogenous assessment criteria with information from surgical assessments, clinical photography, psychological assessment and standardised psychometric questionnaires to consider the suitability of surgery on both aesthetic and psychosocial grounds, alongside risks. All of the applicants are reviewed by this criteria prior to selection. Psychological assessment is vital to filter out patients who should access psychological treatment as opposed to surgery, which in these cases would be associated with undesirable outcomes[8]. Our assessment was based on the guidelines issued by the North Central London care commissioning group. They have issued general criteria including being a non-smoker, having a minimum age of 18, having a significant impairment of activities of daily living as well as not suffering from depression, anxiety, obsessive compulsive disorder or body dysmorphic disorder. There has also been procedure specific guidelines set out for each different clinical condition. Our panel collated information through both psychological and physical assessment in view of the general as well as procedure specific criteria set out by the CCG. The selection panel was set up locally and consisted of a plastic surgeon, a clinical psychologist and an operative manager.

The objective of this retrospective analysis was to analyse a large patient cohort in a single centre over a significant time period. It allowed for assessment of the impact of changes in POLCE guidance on the provision of cosmetic surgeries within the NHS.

METHODOLOGY

Data collection was retrospective involving analysis of a central database that recorded POLCE requests between 2004 and 2015. This computerized data-log was maintained by the tribunal review panel which assessed individual cases. In order to maintain consistency and limit bias, variation in membership of the panel was kept to a minimum. Over the 11 year period, the clinical psychologist changed once and the plastic surgeon changed only three times. The membership of the operative manager changed once. Although the central computerized record had biodata of patients, we de-identified their personal details when conducting data collection for the study. Information collated only included the date of the tribunal meeting, the surgery requested and the outcome of the meeting (i.e. provisionally accepted, accepted declined or inconclusive). Patients who were provisionally accepted were further searched on a separate system which allowed access to operative records thus enabling ous to identify whether they were successful in obtaining surgery from their initial status of having been provisionally accepted. The final amalgamated data consisted of those who had surgery, those who were rejected for surgery and cases which were inconclusive. We included all patients who were logged on to our database(2,087 cases). This aided to eliminate bias and obtain a fair representation but we later had to exclude those from analysis who had insufficient details on our system and whose outcomes could not be traced. This was the inconclusive group.

The study was approved by the clinical governance unit. It did not necessitate permission from an ethical committee since human subjects were not directly involved and the nature of

the work was a retrospective assessment of outcome data only. All statistical analysis was performed with SPSS version 24 and the Pearson chi square as well as the fisher test was used to assess data at a 95% confidence interval.

RESULTS

There were a total of 2,087 cases between the year 2004 to 2015 of which 715(34%) were accepted, 1,311(63%) were declined and 61(3%) had inconclusive results. The proportion of tribunal cases accepted per year are demonstrated in figure 1 below:

Overall there was a decrease in the proportion of cosmetic procedures accepted from 36% in 2004 to 21% in 2015(chi square; P<0.05, CI:95%). There were a total of 225 tribunals concerning breast augmentation of which 158 (70%) were declined, 59 (26%) were accepted and 8 (4%) were inconclusive. The percentage proportion of breast augmentations accepted and rejected annually is demonstrated in table 1 as follows:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
% Accepted	0	27	17	23	19	12	15	50	20	31	50	18
% Rejected	100	73	83	77	81	88	85	47	80	38	37	82
Inconclusive%								3		31	13	

Table 1: Percentage of breast augmentations accepted annually between 2004 – 2015

Subgroup analysis demonstrated a lower rate of acceptance for bilateral breast augmentation(12% accepted) in comparison to applications for unilateral breast augmentation(66% accepted). A chi square assessment proved this to be significant(P<0.05, CI:95%).

In total there were 565 tribunals concerning abdominoplasties, of these 325 were declined, 217 were accepted, 23 had inconclusive results. The annual percentages of those rejected and approved at tribunals are given in table 2:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
% Accepted	80	36	52	26	49	30	40	47	48	37	42	21
% Rejected	20	64	48	74	51	70	58	53	50	62	50	74
Inconclusive%							2		2	1	8	5

Table 2: Percentage of abdominoplasties accepted annually between 2004 – 2015

There were 249 tribunal cases regarding breast reduction surgeries overall, of these 132(53%) were rejected, 111(45%) were accepted and the remainder had inconclusive results. The following three years had the highest proportion of breast reduction surgeries rejected: 2015 (80% declined), 2014 (60% declined) and 2013 (50% declined). Fisher analysis between 2013 and 2015 showed a statistically significant increase in the rejection rate(P<0.05, CI:95%).

The majority of mastopexies were declined totalling to 107 cases overall. Across the sampling period 20 were approved. Six liposuctions were approved between 2004 and 2015.

There was a 36% acceptance rate for breast augmentation surgery between January to July of 2015 which decreased to 25% from August to December of 2015. The acceptance rate for

breast reduction surgeries decreased from 55% to 18% in the same time period which was statistically significant(fisher test; P<0.05, CI:95%).

There have been a number of inconclusive results in our study and they represent patients which were lost to follow up or whoes records could not be traced. For this reason they were not considered as part of the main data set as their outcomes were unknown.

Our results have also included a large variety of other surgery types ranging from rhinoplasty, otoplasty, body contouring and mastectomies which have constituted the remainder of the tribunal figures. Their discussion however would be beyond the scope of this article and we have primarily focused on those surgeries which have been more common as well as having been affected by guideline changes at our centre.

DISCUSSION

The implementation of local CCG guidelines has restricted access to cosmetic surgeries. Overall, it has significantly reduced the proportion of procedures accepted at tribunals from 36% in 2004 to 21% in 2015(chi square; P<0.05, CI:95%). In 2011 the acceptance rate was 38%, this figure fell after the implementation of the 2012 guidelines to 33% and continued to fall after the introduction of new guidelines in 2013 to 21% by the year 2015. Overall there has been an increase in the proportion of procedures rejected from 64% in 2004 to 71% in 2015. The trends observed suggest stricter regulation by care commissioning groups over time with less surgeries accepted and more declined. Our results have been measured against a number of guidelines issued by the North Central London care commissioning group. These have been subject to numerous changes over time and are amalgamated in figure 2. Three sets of modifications were introduced to policies in the years 2012, 2013 and 2015.

Effects of changing policies

Guidelines issued by the Central North London CCG have changed. Prior to 2012, breast augmentation surgery were accepted as long as there was a minimum of a 20% percent difference in breast sizes however this increased to a difference of more than 2 cup sizes by 2012. This has decreased the proportion of these surgeries accepted from 50% in 2011 to 18% by the year 2015(fisher test; P<0.05). It is of interest to note that between 2004 to 2015, the likelihood of having an application for breast augmentation surgery accepted was greater for unilateral in comparison to bilateral cases(chi square; P<0.05).

In 2013 the North Central London Care Commissioning group altered their selection criteria for abdominoplasties by setting the BMI standard at between 18 to ≤ 27 with documented evidence for a minimum of 2 years. This reduced the proportion of abdominoplasties accepted from 37% in 2013 to 21% in 2015(fisher test; P<0.05) and reflects that the new guideline has decreased the ratio of successful applicants in getting abdominoplasties approved.

As of July 2015, new changes were implemented. These included exclusion of bilateral breast augmentation with exceptions being cancer/burns or congenital amastia. Reduction mammoplasty criteria was changed to having a breast size to cup H or larger. Abdominoplasty for post bariatric surgery patients who have lost at least 50% of original

excess weight must have a BMI limit equal or less than 35 kg/m2 which marks an increase to the previous limit of 27 kg/m2. The short impact of these new guidelines were assessed over 6 month periods both before and after implementation. There was a 36% acceptance rate for breast augmentation surgeries between January to July of 2015 which decreased to 25% from August to December of 2015 after the new policy came into practise. The acceptance rate for breast reduction surgeries decreased from 55% to 18%(fisher test; P<0.05) in the same time period after introduction of the new guidelines.

One of the main limitations of the study was the inconclusive set of results. This cohort of patients were either lost to follow up or their records were insufficient on our central database. For this reason they were not considered as part of the main data set as their outcomes were unknown and could not be traced. Their proportion however was low with regards to the data set overall and thus were assumed to have a minimal effect on the outcomes of the study overall.

Health gains of cosmetic surgeries

Cosmetic surgeries not only serve an aesthetic benefit but more importantly the functional advantages can have a significant effect in improving the quality of life. Coriddi et al have statistically demonstrated improvement in over 20 functional variables post abdominoplasty[9]. This has included a reduction of neck pain, better posture, exercise tolerance, increased ability to mobilize and more. In addition psychological benefits of abdominoplasty are equally important. Bolton et al have used the Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire to show improvement post-surgery in acceptance of body image[10]. Other cosmetic procedures have also proven functional and psychological benefits with. breast reduction demonstrating a decrease in compressive back forces[11]. Klassen et al have used the SF-36 health questionnaire to show improved physical and social outcomes at 6 months post breast reduction in 166 women[12]. Restricting access to these procedures can therefore negatively impact the quality of life in these patient cohorts.

Compliance with guidelines

Compliance with POLCE guidance has often been criticised for poor implementation and not being adhered to with clinical discretion having overridden policies at times[6]. At our centre there have been 20(16%) cases of mastopexies and 6(16%) cases of liposuctions approved when local CCG guidance states these procedures should not be funded. In looking at these 26 patients' medical notes, there have been important clinical and psychological grounds for these surgeries to be approved. In the case of liposuctions, the predominant indication has been lipodystrophy causing an unusual appearance (e.g. large buffalo hump) associated with significant psychological distress for which patients have genuinely had difficulty in coping with. Similarly, for mastopexies, in addition to there being psychological indications for surgery, there has also been strong clinical grounds for approval. This has included skin eczema underneath the breasts following significant weight loss as well as severe or unusual involutional changes of the breasts with ptosis. It is therefore important to note that whilst guidelines should be complied to, there should be room for clinical decision making.

National variation of guidelines

There is significant variation in policies on how to manage POLCEs. This has been seen in the case of bilateral breast reduction (BBR) where 21 primary care trusts out of 245 have previously reported that they would not fund BBRs[13]. Variation between local and national guidelines have also existed[4]. Trusts offering BBR showed considerable discrepancy in terms of their selection criteria with 81 primary care trusts reporting that a minimum 500g resection per breast is needed whilst 5 required more than 750g. Cup size criteria has also varied amongst trusts from DD to F and some have mandated the use of 3D body imaging to delineate breast volume[13]. National guidelines concerning reduction mammoplasty published by BAPRAS[7] in 2014 have been clearly modified locally at different trusts in the UK[13]. This is most likely due to the fact that policies from BAPRAS are clinically informed and evidence-based, whereas those issued locally are driven by financial constraints. In a study by Henderson[14], it has been identified that gross variation exists in local guidelines across many different procedures when compared to national policies. This has applied to many surgeries including removal of implants, mastopexy, abdominoplasty, facelift, blepharoplasty, rhinoplasty, pinnaplasty, body lifting, surgery for gynaecomastia as well as tattoo removal. Only 62% of Trusts within the UK have commissioned abdominoplasties[14]. Again significant variation in terms of policies have been exhibited with the BMI criteria ranging from 25 to 30 kg/m2 across different trusts whilst national guidelines set by AOPS have set an upper BMI limit of 27 kg/m2[14]. Only nine percent of primary care trusts allow funding for mastopexy if there is significant ptosis of the nipple areolar-complex. Similar discrepancies for other procedures have been noted and this has produced the notion of a "postcode lottery"[15], where, geographical differences influence whether a procedure can be approved or not.

It is fair to state that therefore certain patients who have a physical impairment may be deprived of surgical intervention based on their location as guidelines vary across the country. This can be overcome if a homogenous set of policies are adapted nationally so that all patients are given an equal opportunity. This concept has been re-iterated in the literature by Russell et al[16]. A source of the problem may arise from funding differences because historically commissioning of resources is influenced by population size as well as socioeconomic status. Areas like London have been renowned to obtain a higher percentage budget than the national average[17]. This problem can be perhaps overcome by a more even distribution of funding so that regional differences in policies are minimized. The BMA has also emphasized that care commissioning groups should work more closely across different regions and adhere to national guidelines[18]. Policies may also appeal to surgeons if there is room for clinical decision-making and evidence-based recommendations, not just guidance on process.

One issue evident from this study is that the proportion of patients having their procedures approved over the last 11 years at the tribunal review panel has reduced significantly. This has been due to a number of guideline changes introduced by the North Central London care commissioning group which has restricted access to surgeries between 2004 to 2015(chi square; $P<0.05$). This therefore raises the question whether patients are unable to access treatment that may be of benefit to their quality of life. It would be helpful to know whether the trend observed in this study is the same nationally across the UK. This could identify whether treatment at individual centres is becoming increasingly difficult to access in

addition to regional guideline variation. The authors would like to therefore encourage similar work to be conducted at other NHS hospital trusts to see if the results are mirrored. We may be observing a healthcare service which is denying patients genuine treatment for physical and psychological conditions that they have.

CONCLUSION

The changes in guidelines for cosmetic surgeries at this centre have overall reduced the number of procedures approved at the exceptional treatment panel meetings between 2004 to 2015. This is perhaps reflective of growing financial pressures on the NHS in which selection criteria have been made more strict. This implies that patients with a physical impairment may not receive treatment in comparison to previous years which can have a negative impact on their quality of life. Compliance with guidelines at our centre in the case for both liposuction and mastopexy has not been 100% as 16% of both these procedures were approved. Non-compliance is attributable to clinical decision about the difficulties presented by the individual person and how these fit with the overall aim of the guidance in addressing disfigurement, functional problems, and to a lesser extent psychosocial distress. A wide variation in policies exists across trusts within the UK when compared to our centre. This has meant that a "postcode lottery" may dictate whether or not a patient is eligible for treatment. Differences in commissioning of funds is likely to be a key factor and perhaps policies can be made more homogenous if a more equal distribution of budget is allocated. It would be worthwhile comparing outcomes in this study to those at other hospital trusts. The authors would therefore like to encourage similar work to be conducted at other centres to enable a national comparison of results. This will help to identify whether the regional trend observed under the influence of the North Central London Hospitals NHS Trust care commissioning group is reflected across the UK. Wider sharing of such data could help raise awareness of increased difficulty posed to patients in accessing treatment. This could facilitate removal of discrepancies and develop more centralized ways in which patients could obtain the treatment they need.

Contributorship statement

All authors involved in this study have played a significant role and have abided to the ICMJE guidelines. They have all had 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published.

Shafiq Rahman – manuscript write up, data collection, analysis and final approval

Benjamin Langridge - manuscript write up, data collection, analysis and final approval

Nadine Hachach-Haram – manuscript write up, design, revision and final approval

Esther Hansen - manuscript write up, data collection, analysis, revision and final approval

Anna Bootle - data collection, analysis, revision and final approval

Nicola Bystrzonowski - design, analysis, revision and final approval

Stephen Hamilton - design, revision, analysis and final approval

Afshin Mosahebi - design, analysis, revision and final approval

Competing interests

The authors have no competing interest

Data sharing statement

The authors grant access for the data in this article to be shared through open access

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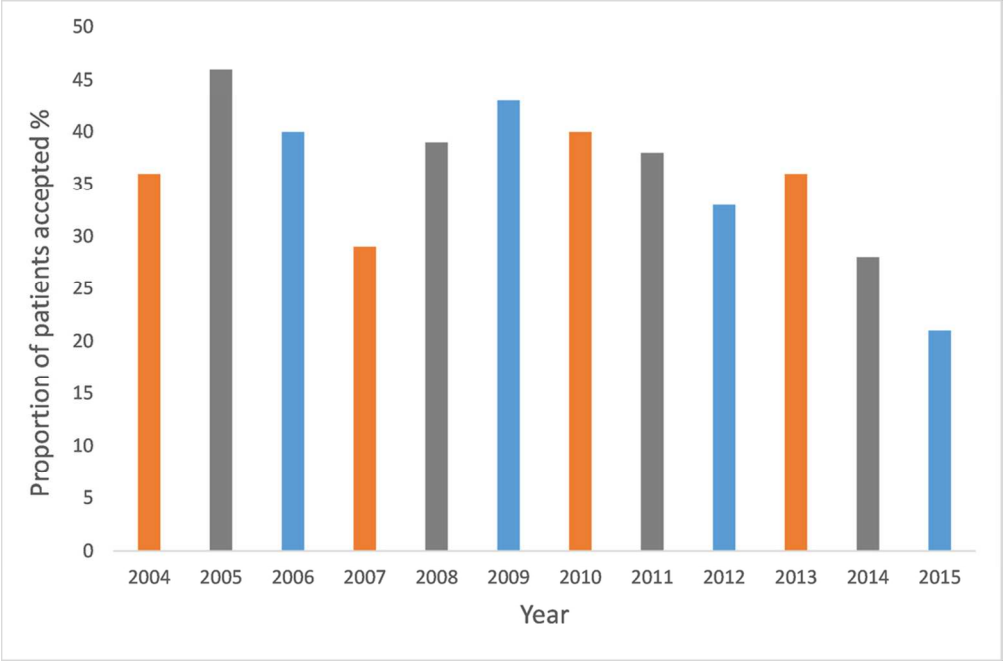
Figure Legends

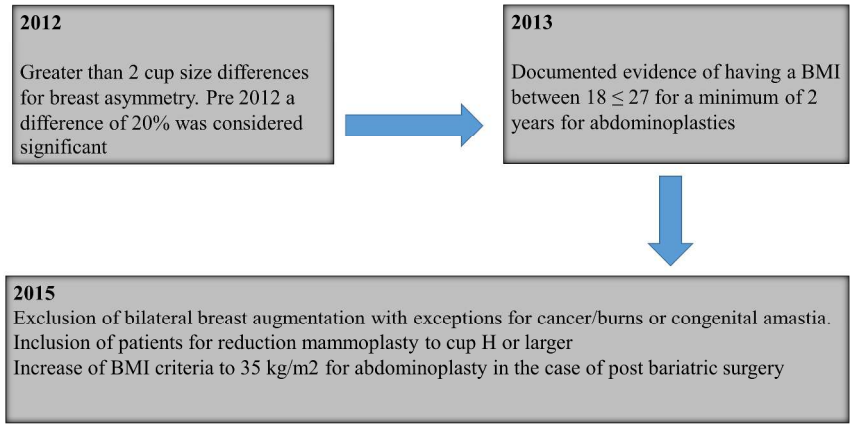
Figure 1: Proportion of tribunal cases accepted for surgery annually between 2004 – 2015

Figure 2: Changes in guidelines for the years 2012, 2013 and 2015 issued by the North Central London Hospitals NHS Trust care commissioning group



Proportion of tribunal cases accepted for surgery annually between 2004 – 2015

99x65mm (300 x 300 DPI)



Changes in guidelines for the years 2012, 2013 and 2015 issued by the North Central London Hospitals NHS Trust care commissioning group

338x190mm (300 x 300 DPI)

STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology*

Checklist for cohort, case-control, and cross-sectional studies (combined)

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	2
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3,4
Objectives	3	State specific objectives, including any pre-specified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	4
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	4
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	4
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	*4*
Bias	9	Describe any efforts to address potential sources of bias	4
Study size	10	Explain how the study size was arrived at	4
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	4
		(*b*) Describe any methods used to examine subgroups and interactions	4
		(*c*) Explain how missing data were addressed	4
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed	4

		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	
		(*e*) Describe any sensitivity analyses	n/a
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	4
		(b) Give reasons for non-participation at each stage	6
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	n/a
		(b) Indicate number of participants with missing data for each variable of interest	6
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	n/a
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	5,6
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	5,6
		Cross-sectional study—Report numbers of outcome events or summary measures	5,6
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	5,6
		(*b*) Report category boundaries when continuous variables were categorized	n/a
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	n/a
Discussion			n/a
Key results	18	Summarise key results with reference to study objectives	6,7
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	7
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	6,7,8
Generalisability	21	Discuss the generalisability (external validity) of the study results	n/a
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	n/a

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

Assessing the effects of changes in care commissioning guidelines at a tertiary centre in London on the provision of NHS funded cosmetic procedures; an 11 year retrospective database analysis

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TITLE PAGE

Assessing the effects of changes in care commissioning guidelines at a tertiary centre in London on the provision of NHS funded cosmetic procedures; an 11 year retrospective database analysis

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ABSTRACT

Objectives: The main objective of this study was to assess the impact of changes in care commissioning policies on NHS funded cosmetic procedures over an 11 year period at our centre.

Setting: The setting was a tertiary care hospital in London regulated by the North Central London Hospitals NHS Trust care commissioning group

Participants: We included all patients logged on to our database at the time of the study which was 2,087 but later excluded 61 from analysis due to insufficient information.

Primary and secondary outcome measures: The main outcome measures were the results of tribunal assessment for different cosmetic surgeries which were either accepted, rejected or inconclusive based on the panel meeting.

Results: There were a total of 2,087 patient requests considered between 2004 and 2015 of which 715 (34%) were accepted, 1,311(63%) were declined and 61(3%) had inconclusive results. The implementation of local CCG guidelines has reduced access to cosmetic surgeries. Within this period the proportion of procedures accepted has fallen from 36% in 2004 to 21% in 2015(chi square; $P<0.05$, CI:95%).

Conclusion: Local POLCE guidance is an effective, though not evidence-based selection process to reduce access to cosmetic surgery in line with increasing financial constraints. However, patients with a physical impairment may not receive treatment in comparison to previous years and this can have a negative impact on their quality of life.

Key words: POLCE(procedures of limited clinical effectiveness) , care commissioning group, plastic surgery, cosmetic surgery, guidelines

STRENGTHS AND LIMITATIONS

- Large patient cohort assessed over an 11 year period
- First study of its nature observing a trend in POLCE due to guideline changes at a single centre
- The main limitations were that there was some inconclusive results that could not be traced as well as study being retrospective in design.

INTRODUCTION

Attitudes towards beauty are culture-bound and have varied across our history, with modern media heavily shaping the emphasis on a particular image. Inherently, there is an increasing pressure on people to correct aberrations of their appearance, which, in the UK has been observed by greater demand for aesthetic surgeries[1]. Cosmetic procedures can additionally have psychological and functional benefits[2,3]. The implications of growing financial pressures however on the NHS have led to care commissioning groups restricting access[4,5] through the introduction of local guidelines[4,6]. This has also been influenced by national guidelines issued through BAPRAS[7] which emphasize the need for functional symptoms. However, their

application has often been arbitrary and clinicians have criticised them for being impractical and not evidence based[6].

In this study, we review the effects of changes to local guidelines on selection practices for NHS funded cosmetic procedures. In our centre, any POLCE (Procedure of Limited Clinical Effectiveness) request is discussed at a multi-disciplinary exceptional treatment panel. The panel uses a homogenous assessment criteria with information from surgical assessments, clinical photography, psychological assessment and standardised psychometric questionnaires to consider the suitability of surgery on both aesthetic and psychosocial grounds, alongside risks. All of the applicants are reviewed by this criteria prior to selection. Psychological assessment is vital to filter out patients who should access psychological treatment as opposed to surgery, which in these cases would be associated with undesirable outcomes[8]. Our assessment was based on the guidelines issued by the North Central London care commissioning group. They have issued general criteria including being a non-smoker, having a minimum age of 18, having a significant impairment of activities of daily living as well as not suffering from depression, anxiety, obsessive compulsive disorder or body dysmorphic disorder. There has also been procedure specific guidelines set out for each different clinical condition. Our panel collated information through both psychological and physical assessment in view of the general as well as procedure specific criteria set out by the CCG. The selection panel was set up locally and consisted of a plastic surgeon, a clinical psychologist and an operative manager.

The objective of this retrospective analysis was to analyse a large patient cohort in a single centre over a significant time period. It allowed for assessment of the impact of changes in POLCE guidance on the provision of cosmetic surgeries within the NHS.

METHODOLOGY

Data collection was retrospective involving analysis of a database that recorded POLCE requests between 2004 and 2015 at a tertiary care centre. This computerized data-log was maintained by the tribunal review panel which assessed individual cases. In order to maintain consistency and limit bias, variation in membership of the panel was kept to a minimum. Over the 11 year period, the clinical psychologist changed once and the plastic surgeon changed only three times. The membership of the operative manager changed once. Although the central computerized record had biodata of patients, we de-identified their personal details when conducting data collection for the study. Retrieval of information from the database was performed between January 2016 to March 2016 and included the date of the tribunal meeting, the surgery requested as well as the outcome of the meeting (i.e. provisionally accepted, accepted declined or inconclusive). Patients who were provisionally accepted were further searched on a separate system which allowed access to operative records thus enabling us to identify whether they were successful in obtaining surgery from their initial status of having been provisionally accepted. The final amalgamated data consisted of those who had surgery, those who were rejected for surgery and cases which were inconclusive. We included all patients who were logged on to our database (2,087 cases). This aided to eliminate bias and obtain a fair representation but we later had to exclude those from analysis who had insufficient details on our system and whose outcomes could not be traced. This was the inconclusive group.

The study was approved by the clinical governance unit. It did not necessitate permission from an ethical committee since human subjects were not directly involved and the nature of the work was a retrospective assessment of outcome data only. All statistical analysis was performed with SPSS version 24 and the Pearson chi square as well as the fisher test was used to assess differences in the proportion of surgeries accepted at a 95% confidence interval.

RESULTS

There were a total of 2,087 cases between the year 2004 to 2015 of which 715(34%) were accepted, 1,311(63%) were declined and 61(3%) had inconclusive results. The proportion of tribunal cases accepted per year are demonstrated in figure 1 below:

Overall there was a decrease in the proportion of cosmetic procedures accepted from 36% in 2004 to 21% in 2015(chi square; P<0.05, CI: 95%). There were a total of 225 tribunals concerning breast augmentation of which 158 (70%) were declined, 59 (26%) were accepted and 8 (4%) were inconclusive. The percentage proportion of breast augmentations accepted and rejected annually is demonstrated in table 1 as follows:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Accepted	0	27	17	23	19	12	15	50	20	31	50	18
Rejected	100	73	83	77	81	88	85	47	80	38	37	82
Inconclusive (%)								3		31	13	

Table 1: Percentage of breast augmentations accepted annually between 2004 – 2015

Subgroup analysis demonstrated a lower rate of acceptance for bilateral breast augmentation(12% accepted) in comparison to applications for unilateral breast augmentation(66% accepted). A chi square assessment proved this to be significant (P<0.05, CI: 95%).

In total there were 565 tribunals concerning abdominoplasties, of these 325 were declined, 217 were accepted, 23 had inconclusive results. The annual percentages of those rejected and approved at tribunals are given in table 2:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Accepted	80	36	52	26	49	30	40	47	48	37	42	21
Rejected	20	64	48	74	51	70	58	53	50	62	50	74
Inconclusive (%)							2		2	1	8	5

Table 2: Percentage of abdominoplasties accepted annually between 2004 – 2015

There were 249 tribunal cases regarding breast reduction surgeries overall, of these 132(53%) were rejected, 111(45%) were accepted and the remainder had inconclusive results. The following three years had the highest proportion of breast reduction surgeries rejected: 2015 (80% declined), 2014 (60% declined) and 2013 (50% declined). Fisher analysis between 2013 and 2015 showed a statistically significant increase in the rejection rate (P<0.05, CI:95%).

The majority of mastopexies were declined totalling to 107 cases overall. Across the sampling period 20 were approved. Six liposuctions were approved between 2004 and 2015.

There was a 36% acceptance rate for breast augmentation surgery between January to July of 2015 which decreased to 25% from August to December of 2015. The acceptance rate for breast reduction surgeries decreased from 55% to 18% in the same time period which was statistically significant (fisher test; P<0.05, CI: 95%).

There have been a number of inconclusive results in our study and they represent patients which were lost to follow up or whose records could not be traced. For this reason they were not considered as part of the main data set as their outcomes were unknown.

Our results have also included a large variety of other surgery types ranging from rhinoplasty, otoplasty, body contouring and mastectomies which have constituted the remainder of the tribunal figures. Their discussion however would be beyond the scope of this article and we have primarily focused on those surgeries which have been more common as well as having been affected by guideline changes at our centre.

DISCUSSION

The implementation of local CCG guidelines has restricted access to cosmetic surgeries. Overall, it has significantly reduced the proportion of procedures accepted at tribunals from 36% in 2004 to 21% in 2015(chi square; P<0.05, CI: 95%). In 2011 the acceptance rate was 38%, this figure fell after the implementation of the 2012 guidelines to 33% and continued to fall after the introduction of new guidelines in 2013 to 21% by the year 2015. Overall there has been an increase in the proportion of procedures rejected from 64% in 2004 to 71% in 2015. The trends observed suggest stricter regulation by care commissioning groups over time with less surgeries accepted and more declined. Our results have been measured against a number of guidelines issued by the North Central London care commissioning group. These have been subject to numerous changes over time and are amalgamated in figure 2. Three sets of modifications were introduced to policies in the years 2012, 2013 and 2015.

Effects of changing policies

Guidelines issued by the Central North London CCG have changed. Prior to 2012, breast augmentation surgery were accepted as long as there was a minimum of a 20% percent difference in breast sizes however this increased to a difference of more than 2 cup sizes by 2012. This has decreased the proportion of these surgeries accepted from 50% in 2011 to 18% by the year 2015(fisher test; P<0.05). It is of interest to note that between 2004 to 2015, the likelihood of having an application for breast augmentation surgery accepted was greater for unilateral in comparison to bilateral cases (chi square; P<0.05).

In 2013 the North Central London Care Commissioning group altered their selection criteria for abdominoplasties by setting the BMI standard at between 18 to ≤ 27 with documented evidence for a minimum of 2 years. This reduced the proportion of abdominoplasties accepted from 37% in 2013 to 21% in 2015(fisher test; P<0.05) and reflects that the new guideline has decreased the ratio of successful applicants in getting abdominoplasties approved.

As of July 2015, new changes were implemented. These included exclusion of bilateral breast augmentation with exceptions being cancer/burns or congenital amastia. Reduction mammoplasty criteria was changed to having a breast size to cup H or larger. Abdominoplasty for post bariatric surgery patients who have lost at least 50% of original excess weight must have a BMI limit equal or less than 35 kg/m2 which marks an increase to the previous limit of 27 kg/m2. The short impact of these new guidelines were assessed over 6 month periods both before and after implementation. There was a 36% acceptance rate for breast augmentation surgeries between January to July of 2015 which decreased to 25% from August to December of 2015 after the new policy came into practise. The acceptance rate for breast reduction surgeries decreased from 55% to 18% (fisher test; $P<0.05$) in the same time period after introduction of the new guidelines.

One of the main limitations of the study was the inconclusive set of results. This cohort of patients were either lost to follow up or their records were insufficient on our central database. For this reason they were not considered as part of the main data set as their outcomes were unknown and could not be traced. Their proportion however was low with regards to the data set overall and thus were assumed to have a minimal effect on the outcomes of the study overall.

Health gains of cosmetic surgeries

Cosmetic surgeries not only serve an aesthetic benefit but more importantly the functional advantages can have a significant effect in improving the quality of life. Coriddi et al have statistically demonstrated improvement in over 20 functional variables post abdominoplasty[9]. This has included a reduction of neck pain, better posture, exercise tolerance, increased ability to mobilize and more. In addition psychological benefits of abdominoplasty are equally important. Bolton et al have used the Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire to show improvement post-surgery in acceptance of body image[10]. Other cosmetic procedures have also proven functional and psychological benefits with breast reduction demonstrating a decrease in compressive back forces[11]. Klassen et al have used the SF-36 health questionnaire to show improved physical and social outcomes at 6 months post breast reduction in 166 women[12]. Restricting access to these procedures can therefore negatively impact the quality of life in these patient cohorts.

Compliance with guidelines

Compliance with POLCE guidance has often been criticised for poor implementation and not being adhered to with clinical discretion having overridden policies at times[6]. At our centre there have been 20(16%) cases of mastopexies and 6(16%) cases of liposuctions approved when local CCG guidance states these procedures should not be funded. In looking at these 26 patients' medical notes, there have been important clinical and psychological grounds for these surgeries to be approved. In the case of liposuctions, the predominant indication has been lipodystrophy causing an unusual appearance (e.g. large buffalo hump) associated with significant psychological distress for which patients have genuinely had difficulty in coping with. Similarly, for mastopexies, in addition to there being psychological indications for surgery, there has also been strong clinical grounds for approval. This has included skin eczema underneath the breasts following significant weight loss as well as severe or unusual

involutional changes of the breasts with ptosis. It is therefore important to note that whilst guidelines should be complied to, there should be room for clinical decision making.

National variation of guidelines

There is significant variation in policies on how to manage POLCEs. This has been seen in the case of bilateral breast reduction (BBR) where 21 primary care trusts out of 245 have previously reported that they would not fund BBRs[13]. Variation between local and national guidelines have also existed[4]. Trusts offering BBR showed considerable discrepancy in terms of their selection criteria with 81 primary care trusts reporting that a minimum 500g resection per breast is needed whilst 5 required more than 750g. Cup size criteria has also varied amongst trusts from DD to F and some have mandated the use of 3D body imaging to delineate breast volume[13]. National guidelines concerning reduction mammoplasty published by BAPRAS[7] in 2014 have been clearly modified locally at different trusts in the UK[13]. This is most likely due to the fact that policies from BAPRAS are clinically informed and evidence-based, whereas those issued locally are driven by financial constraints. In a study by Henderson[14], it has been identified that gross variation exists in local guidelines across many different procedures when compared to national policies. This has applied to many surgeries including removal of implants, mastopexy, abdominoplasty, facelift, blepharoplasty, rhinoplasty, pinnaplasty, body lifting, surgery for gynaecomastia as well as tattoo removal. Only 62% of Trusts within the UK have commissioned abdominoplasties[14]. Again significant variation in terms of policies have been exhibited with the BMI criteria ranging from 25 to 30 kg/m2 across different trusts whilst national guidelines set by AOPS have set an upper BMI limit of 27 kg/m2[14]. Only nine percent of primary care trusts allow funding for mastopexy if there is significant ptosis of the nipple areolar-complex. Similar discrepancies for other procedures have been noted and this has produced the notion of a "postcode lottery"[15], where, geographical differences influence whether a procedure can be approved or not.

It is fair to state that therefore certain patients who have a physical impairment may be deprived of surgical intervention based on their location as guidelines vary across the country. This can be overcome if a homogenous set of policies are adapted nationally so that all patients are given an equal opportunity. This concept has been re-iterated in the literature by Russell et al[16]. A source of the problem may arise from funding differences because historically commissioning of resources is influenced by population size as well as socioeconomic status. Areas like London have been renowned to obtain a higher percentage budget than the national average[17]. This problem can be perhaps overcome by a more even distribution of funding so that regional differences in policies are minimized. The BMA has also emphasized that care commissioning groups should work more closely across different regions and adhere to national guidelines[18]. Policies may also appeal to surgeons if there is room for clinical decision-making and evidence-based recommendations, not just guidance on process.

One issue evident from this study is that the proportion of patients having their procedures approved over the last 11 years at the tribunal review panel has reduced significantly. This has been due to a number of guideline changes introduced by the North Central London care commissioning group which has restricted access to surgeries between 2004 to 2015(chi square; $P<0.05$). This therefore raises the question whether patients are unable to access treatment that may be of benefit to their quality of life. It would be helpful to know whether the trend observed in this study can be generalised to one nationally across the UK. This

could identify whether treatment at individual centres is becoming increasingly difficult to access in addition to regional guideline variation. The authors would like to therefore encourage similar work to be conducted at other NHS hospital trusts to see if the results are mirrored and this would strengthen the external validity of the data in the current work. Regardless, given the large patient cohort, this study offers a fair representation of a trend that potentially exists within the NHS. We may be observing a healthcare service which is denying patients genuine treatment for physical and psychological conditions that they have.

CONCLUSION

The changes in guidelines for cosmetic surgeries at this centre have overall reduced the number of procedures approved at the exceptional treatment panel meetings between 2004 to 2015. This is perhaps reflective of growing financial pressures on the NHS in which selection criteria have been made more strict. This implies that patients with a physical impairment may not receive treatment in comparison to previous years which can have a negative impact on their quality of life. Compliance with guidelines at our centre in the case for both liposuction and mastopexy has not been 100% as 16% of both these procedures were approved. Non-compliance is attributable to clinical decision about the difficulties presented by the individual person and how these fit with the overall aim of the guidance in addressing disfigurement, functional problems, and to a lesser extent psychosocial distress. A wide variation in policies exists across trusts within the UK when compared to our centre. This has meant that a "postcode lottery" may dictate whether or not a patient is eligible for treatment. Differences in commissioning of funds is likely to be a key factor and perhaps policies can be made more homogenous if a more equal distribution of budget is allocated. It would be worthwhile comparing outcomes in this study to those at other hospital trusts. The authors would therefore like to encourage similar work to be conducted at other centres to enable a national comparison of results. This will help to identify whether the regional trend observed under the influence of the North Central London Hospitals NHS Trust care commissioning group is reflected across the UK. Wider sharing of such data could help raise awareness of increased difficulty posed to patients in accessing treatment. This could facilitate removal of discrepancies and develop more centralized ways in which patients could obtain the treatment they need.

Contributorship statement

All authors involved in this study have played a significant role and have abided to the ICMJE guidelines. They have all had 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published.

Shafiq Rahman – manuscript write up, data collection, analysis and final approval

Benjamin Langridge - manuscript write up, data collection, analysis and final approval

Nadine Hachach-Haram – manuscript write up, design, revision and final approval

Esther Hansen - manuscript write up, data collection, revision and final approval

Anna Bootle - data collection, analysis, revision and final approval

Nicola Bystrzonowski - design, analysis, revision and final approval

Stephen Hamilton - design, revision, analysis and final approval

Afshin Mosahebi - design, analysis, revision and final approval

Competing interests

The authors have no competing interest

Data sharing statement

The authors grant access for the data in this article to be shared through open access

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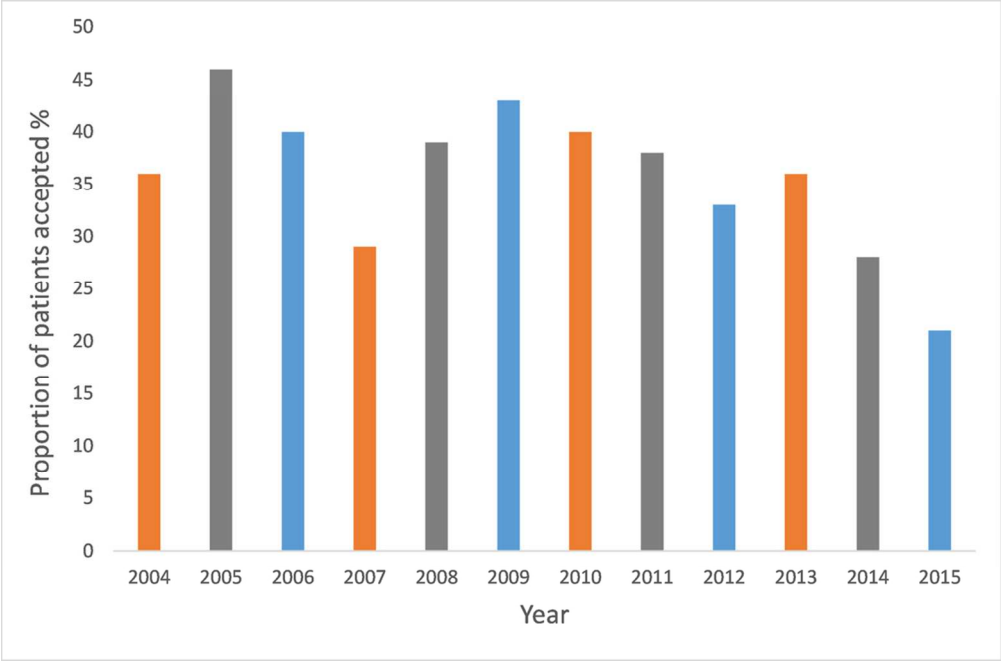
Figure Legends

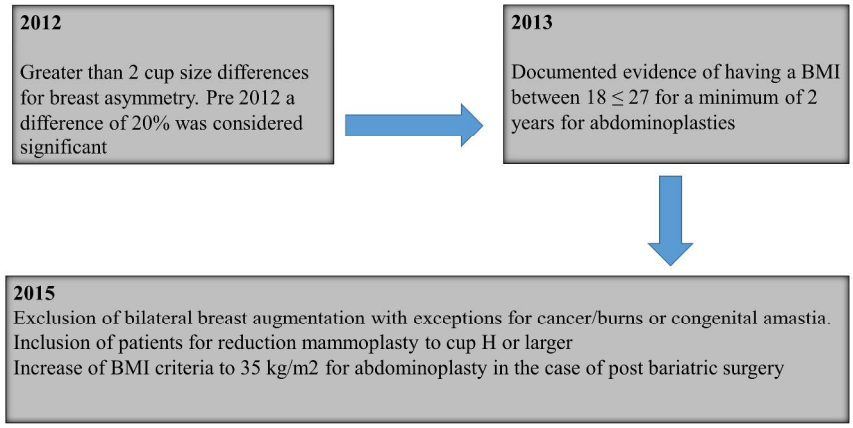
Figure 1: Proportion of tribunal cases accepted for surgery annually between 2004 – 2015

Figure 2: Changes in guidelines for the years 2012, 2013 and 2015 issued by the North Central London Hospitals NHS Trust care commissioning group



Proportion of tribunal cases accepted for surgery annually between 2004 – 2015

99x65mm (300 x 300 DPI)



Changes in guidelines for the years 2012, 2013 and 2015 issued by the North Central London Hospitals NHS Trust care commissioning group

338x190mm (300 x 300 DPI)

STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology*

Checklist for cohort, case-control, and cross-sectional studies (combined)

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2,3
Objectives	3	State specific objectives, including any pre-specified hypotheses	3
Methods			
Study design	4	Present key elements of study design early in the paper	3,4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	3,4
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	3,4
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	n/a
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	3,4
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	3,4
Bias	9	Describe any efforts to address potential sources of bias	3,4
Study size	10	Explain how the study size was arrived at	3,4
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	3,4
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	3,4
		(*b*) Describe any methods used to examine subgroups and interactions	3,4
		(*c*) Explain how missing data were addressed	3,4
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed	n/a

		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy/a	
		(*e*) Describe any sensitivity analyses	n/a
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	4
		(b) Give reasons for non-participation at each stage	4,6
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	n/a
		(b) Indicate number of participants with missing data for each variable of interest	4,6
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	n/a
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	4,5,6
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	n/a
		Cross-sectional study—Report numbers of outcome events or summary measures	n/a
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	5,6
		(*b*) Report category boundaries when continuous variables were categorized	n/a
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	4,5,6
Discussion			
Key results	18	Summarise key results with reference to study objectives	6,7,8
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	6
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	6,7,8
Generalisability	21	Discuss the generalisability (external validity) of the study results	7
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	9

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.
Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.