

## INTRODUCTION

A radical trachelectomy is a relatively new and uncommon procedure intended as a fertility-preserving alternative to a radical hysterectomy. In a radical trachelectomy, the cervix, the parametria (tissue adjacent to the cervix) and the vaginal cuff (end of the vagina close to the cervix) are excised, but the ovaries and the uterus are left to preserve fertility (Figure 1). A lymphadenectomy is usually, if not always, performed alongside a radical trachelectomy to assess for tumour spread to the lymph nodes.

There is little information available to show how many patients received a radical trachelectomy in England, where the procedure was performed, how many subsequently had successful pregnancies, and whether their cancer outcomes were comparable to other, similar, patients who received radical hysterectomies.

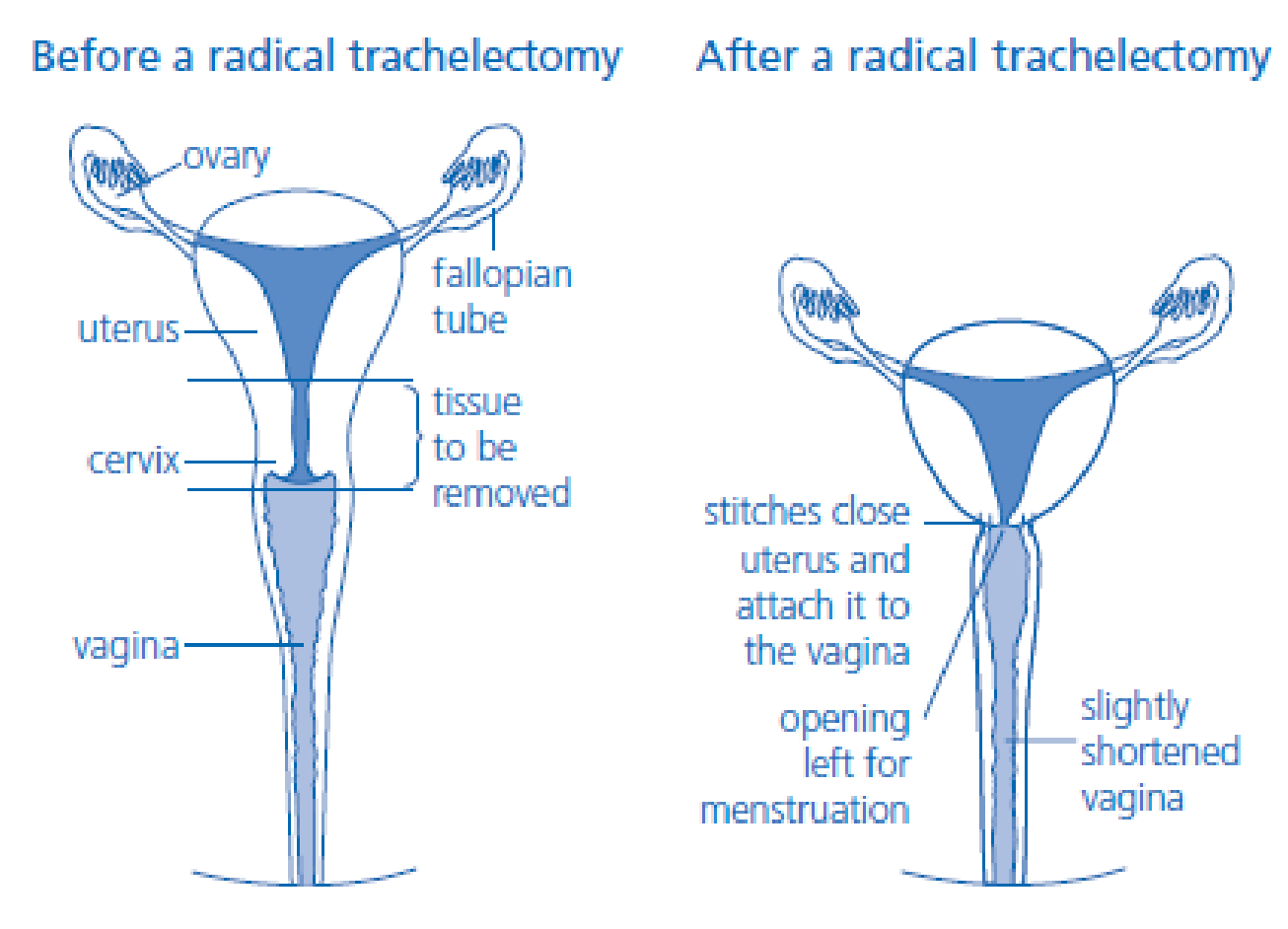


Figure 1. Radical trachelectomy<sup>1</sup>

An initial attempt to identify radical trachelectomies produced counts which were clearly too low.

Using data from an example trust, this work initially checked for any possible data quality issues. The procedure codes used to record the procedure were identified, and used to develop better criteria for identifying radical trachelectomies nationally.

## METHODS

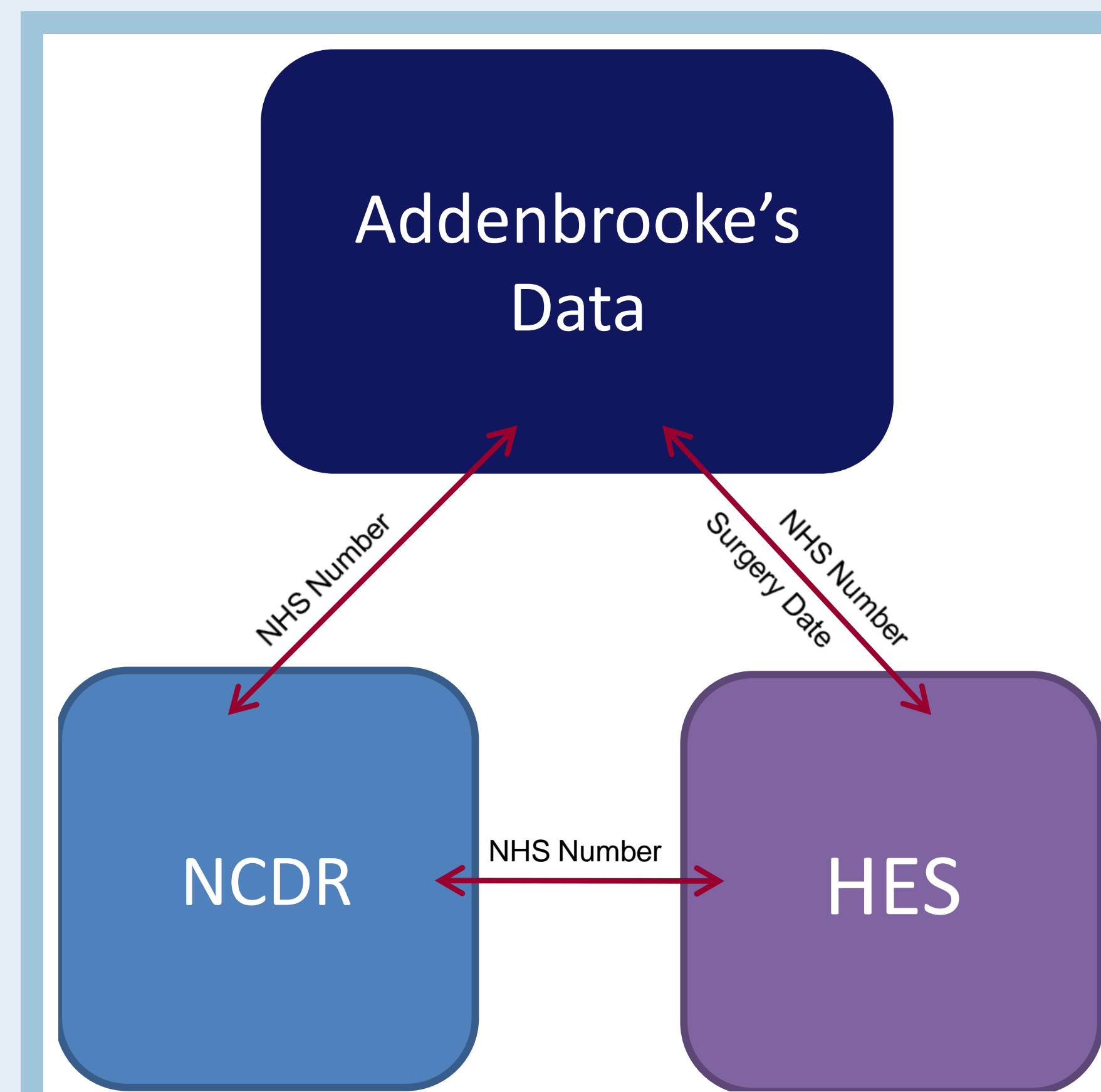


Figure 2. Data matching

Data on all radical trachelectomies performed at Addenbrooke's Hospital between 2005 and 2009 were matched with the National Cancer Data Repository (NCDR) and Hospital Episode Statistics (HES) inpatient data (Figure 2).

Initially, it was confirmed that all the Addenbrooke's patients were in both HES and the NCDR, with correct diagnoses and surgery dates.

The HES OPCS-4 procedure codes were inspected. Common OPCS-4 procedure codes were selected and used to create potential criteria for identifying radical trachelectomies.

These criteria were later validated against records of radical trachelectomies performed at Addenbrooke's Hospital in 2010. Further checks are ongoing at several other NHS trusts.

## RESULTS

### Criteria Design

All of the women who received radical trachelectomies at Addenbrooke's Hospital were in the NCDR with correct diagnoses and in HES with correct surgery dates.

There was little consistency in the OPCS-4 procedure codes used to record surgeries. The initial counts were produced using a single set of OPCS-4 procedure codes which seemed the most appropriate for a radical trachelectomy: only one of the patients treated at Addenbrooke's Hospital had this particular set of codes.

However, combinations of procedure codes for excision of cervix (Q01.1; Q01.2; Q01.8; Q01.9) and various lymph node procedures (T85.6; T85.8; T86.8; T87.8) were used for every patient treated at Addenbrooke's Hospital. These were used as the core of new criteria (Figure 3).

Further criteria were added to ensure that only patients with cervical cancer were included, and that patients who were ineligible due to age or tumour stage were excluded. Patients who underwent concurrent hysterectomies or bilateral oophorectomies (identified by the procedure codes Q07; Q08; Q22; Q24) were also excluded (Figure 3).

### Criteria Validation

The new criteria identified 86 potential radical trachelectomies between April 2006 and March 2009 in England, performed at 24 NHS trusts (Table 1). This appeared more consistent with the impressions of the clinical community about the number of radical trachelectomies performed in this time period.

NHS Trust	Potential Radical Trachelectomies
The Royal Marsden NHS Foundation Trust	12
Guy's and St Thomas' NHS Foundation Trust	9
Leeds Teaching Hospitals NHS Trust	8
Barts and the London NHS Trust	8
Cambridge University Hospitals NHS Foundation Trust	8
Sandwell and West Birmingham Hospitals NHS Foundation Trust	5
18 other trusts	36
<b>Total</b>	<b>86</b>

Table 1. Potential radical trachelectomies performed in England between April 2006 and March 2009, by NHS Trust.

The criteria successfully identified every radical trachelectomy performed at Addenbrooke's Hospital (represented by Cambridge University Hospitals NHS Foundation Trust in Table 1) between 2006 and 2010, with no false positives: all potential radical trachelectomies identified at Addenbrooke's Hospital were actually radical trachelectomies.

Validation of the 2006-2009 results is ongoing in collaboration with gynaecological oncology teams at several NHS trusts. Initial responses suggest the criteria has a low rate of false positives. However, further validation is required to ensure the criteria reliably identify radical trachelectomies nationally.

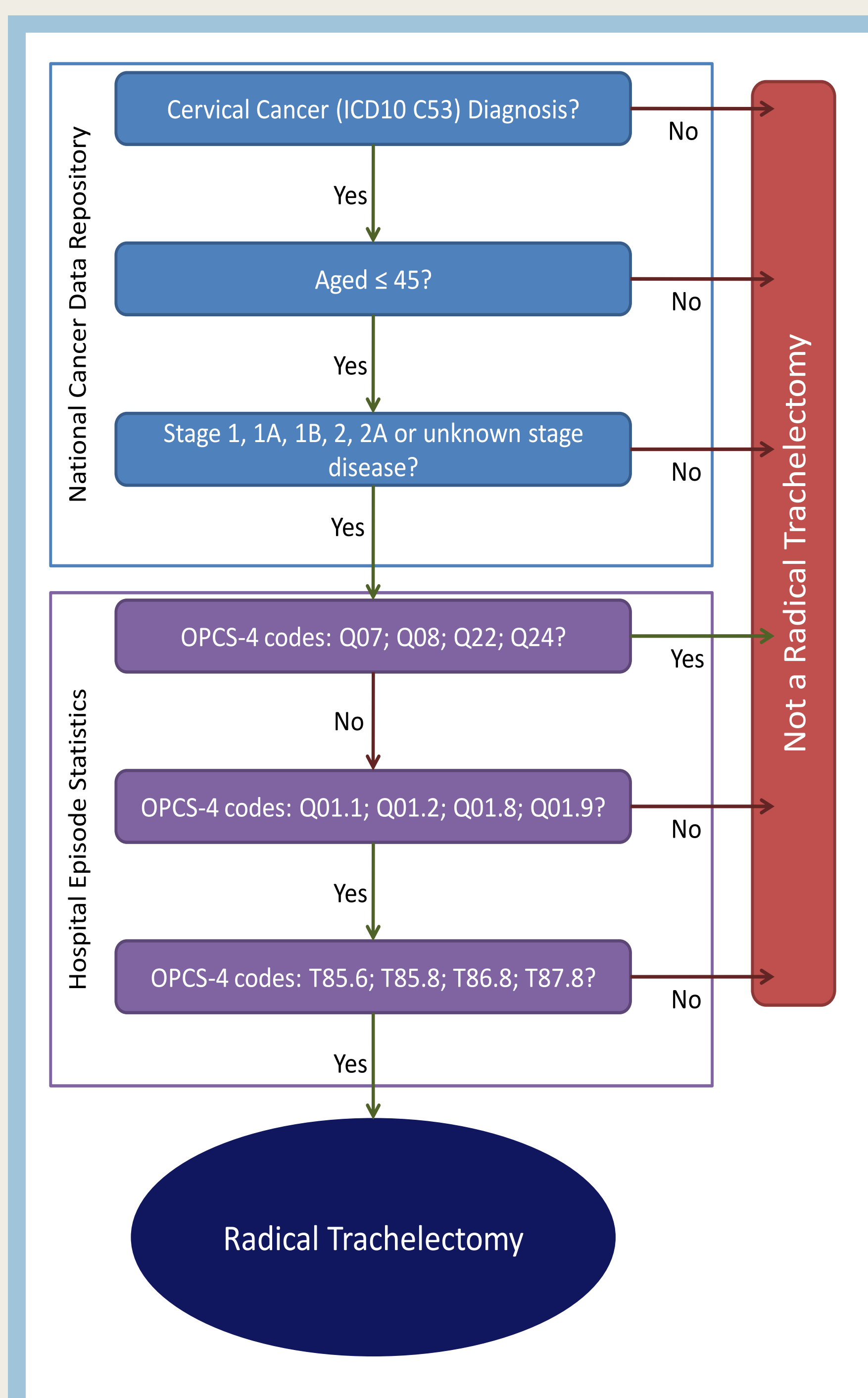


Figure 3. New criteria for identifying radical trachelectomies

## CONCLUSIONS

A standard set of OPCS-4 procedure codes identifying a radical trachelectomy would be the ideal approach to enabling routine identification and follow-up of radical trachelectomies from administrative data. Currently, such a standard set of codes does not exist, and there is large variation in the coding of the procedure even within a hospital trust.

In the absence of a standard set of codes, the criteria described here are probably an accurate and useful way to identify radical trachelectomies for assessing variance in use of the procedure around the country, and perhaps also for investigation of outcomes following a radical trachelectomy.

The results of the validation of these criteria, which is already under way, are needed to confirm the sensitivity and specificity of the criteria before work using these criteria to investigate radical trachelectomies can begin.

## DISCUSSION

These new criteria appear to be a valid and accurate method of identifying patients who received a radical trachelectomy from cancer registration data.

Once fully validated, this would allow commissioners to identify where the procedure is performed, and may advise in the design of supra-regional patient pathways for radical trachelectomies.

It would also simplify the task of identifying outcomes after the procedure, for instance comparing survival with comparable patients who received standard care, or identifying the proportion of radical trachelectomy patients who went on to have a successful pregnancy.

There has been little large scale research into patient outcomes following a radical trachelectomy, although there have been several small-scale comparative studies<sup>2,3</sup>, so the opportunity this presents to perform a larger scale ecological study is valuable.

## ACKNOWLEDGEMENTS

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