Health Protection Scotland

NHS National Services Scotland

SURGICAL SITE INFECTION SURVEILLANCE

Setting up Surveillance

Scottish Surveillance of Healthcare Associated Infection Programme

SETTING UP SURVEILLANCE

1.1 INTRODUCTION TO SSI SURVEILLANCE

Infections acquired in hospital are recognised as being associated with significant morbidity. They result in increased length of hospital stay, pain, discomfort and sometimes prolonged or permanent disability, and on occasions result in death.[1,2] The prevalence of Health Associated Infection (HAI) in 2011 within acute hospitals in Scotland was found to be 4.9%. Urinary tract infection (UTI) was the most prevalent type of HAI (22.6% of all HAI) with Surgical Site Infection (SSI) making up a large proportion of HAI (18.6%), the procedures of particular note were orthopaedic, vascular, and gastrointestinal surgery.[3] The development of HAI are estimated to double the length of post operative stay in hospital significantly increase the cost of care[2,4].

A surveillance programme is required to establish the cumulative incidence rates of SSI, both nationally and locally. The key aim of SSI surveillance is to improve the quality of patient care and a national surveillance programme is able to provide participating hospitals with robust rates in order for them to compare with similar hospitals and against benchmark rates. Details of benchmark rates can be found at the following link:
http://www.hps.scot.nhs.uk/haiic/sshaip/ssi-aggregate-data.aspx
Benchmarks of SSI can be a driver for effecting change but require effort and coordination to develop.[5] Evidence demonstrates reductions in SSI rates in hospitals participating in benchmarking projects.[6-8] The evidence also suggests that actively feeding back data to clinicians contributes to reductions in rates of infection.[9]

The aims of an SSI surveillance programme are to:

At a local level:

- To improve the quality of patient care by collecting surveillance data on the chosen procedure to permit estimation of the magnitude of the risks in hospitalised patients (or the population under examination), and use this data to inform clinical practice improvements.

- Analyse and report SSI surveillance data and describe trends in infection rates, to enable clinicians to review or change practice locally that may be required to reduce SSI rates

- Provide timely active feedback of SSI rates to assist clinical teams in minimising the occurrence of SSI.

At a national level:

- Monitor trends, including the detection of outbreaks, provide early warning and investigation of problems and subsequent planning and intervention to control.

- Examine the impact of interventions to determine best practice.

- Gain information on the quality of care to drive improvements.

- Prioritise the allocation of resources to promote the reduction in the rate of SSI's.

1.2 WHO SHOULD BE INVOLVED?

Surveillance primarily involves clinical staff, including infection control teams.

The local SSI surveillance group should include representation of some or all of the following:

Infection Control Nurses
Infection Control Doctors/microbiologists
Medical staff, from relevant disciplines
Clinical Nurse Specialists
Ward nurses
Surveillance Nurses
Community staff
Infection Control Managers
Clinical Effectiveness teams
Theatre staff
Clinical audit staff
IT staff
Clerical and secretarial staff

1.2a Key Roles

There are two key roles, which ensure effective surveillance:

Key role 1: Local SSI surveillance co-ordinator.

The local co-ordinator will be a member of the infection control team or another member of staff with strong links with infection control, for example a member of the clinical effectiveness team. His/her key functions are anticipated to be strategic at this local level and include:

- Facilitating the surveillance process.
- Engaging with the clinical teams to ensure their continued involvement to drive forward SSI reduction in their surgical procedures.
- Provide overall co-ordination and liaison with HPS including ensuring mechanisms are in place for data collection, collation, transfer and dissemination.
- Provide local training for staff involved in the surveillance process to ensure the consistent application of SSI definitions and data collection.
- Active feedback of SSI data to local stakeholders.

Key role 2: Data transfer co-ordinator.

The data transfer co-ordinator's key functions are to:

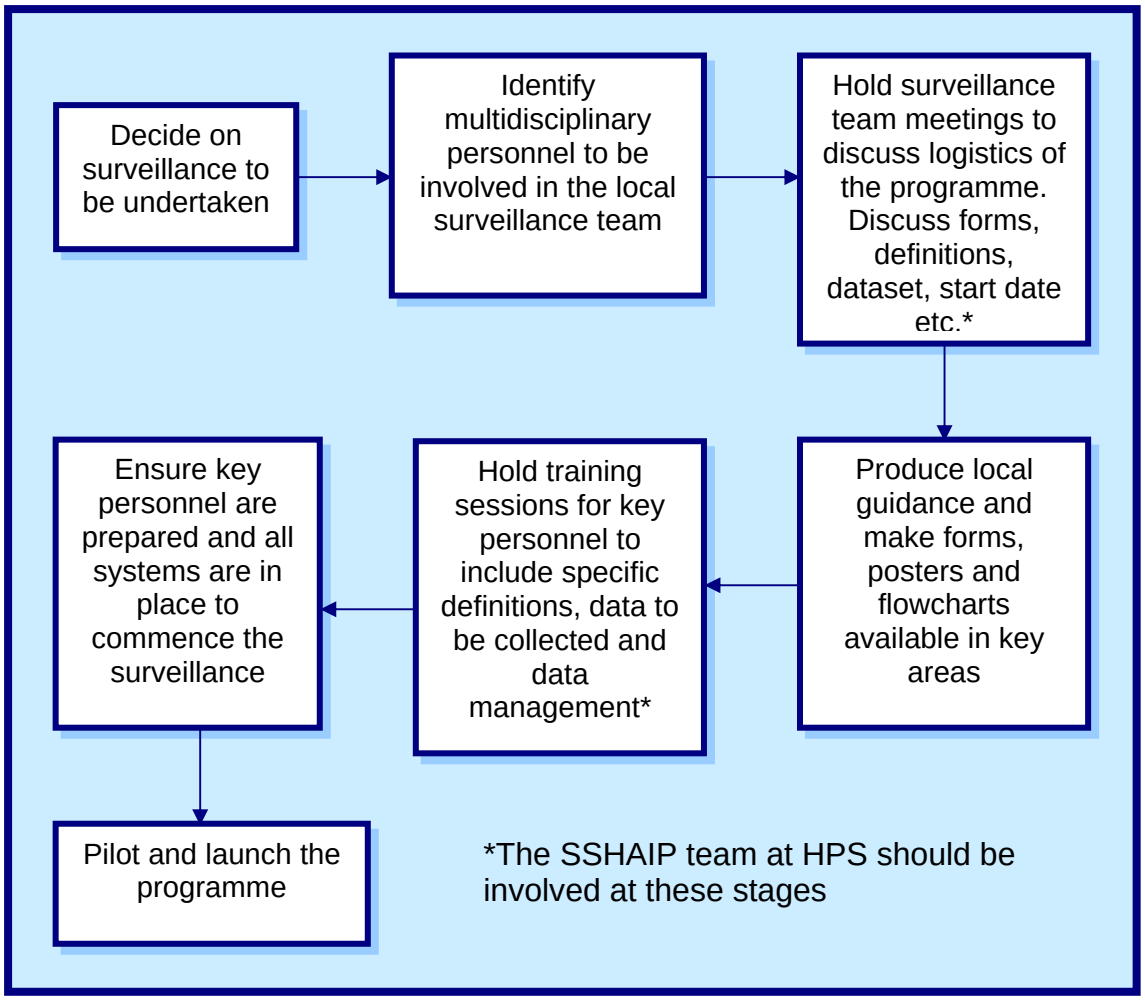
- Ensure that any electronic format utilised locally complies with the database specifications.
- Ensure data are correctly entered on the web based reporting system.

1.3 POINTS TO CONSIDER BEFORE SETTING UP SURVEILLANCE

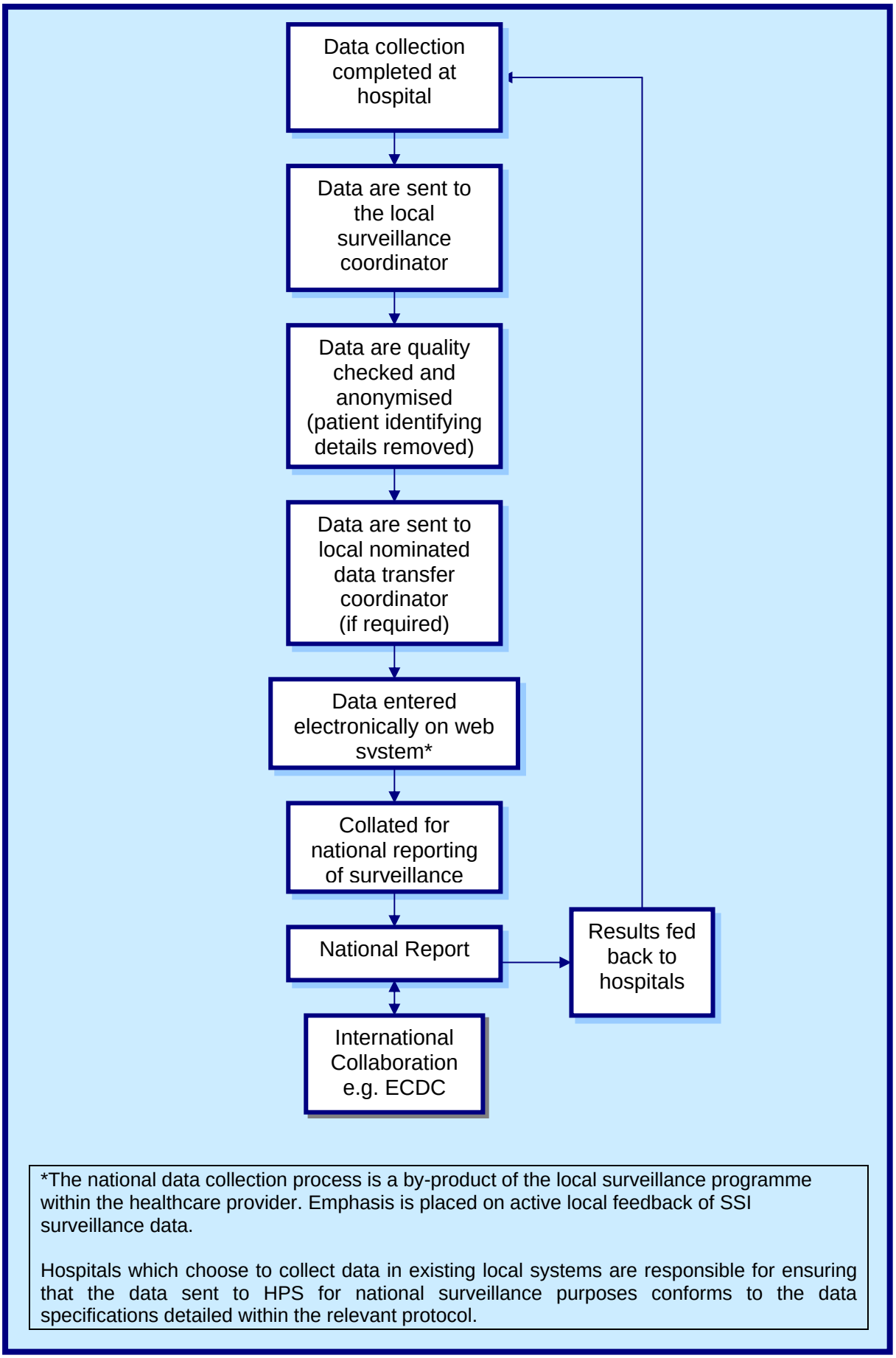
- The following sub sections of 1.3 are example flowcharts to consider and assist with setting up of surveillance.

- Specifically, the first flow chart represents the steps necessary to prepare for the commencement of SSI surveillance, followed by the national data collection process. Additional flowcharts contain examples of patient pathways for specific SSI surveillance including SSI post discharge surveillance, whether an SSI occurs or not during any part of the pathway.

1.3a Flowchart- Setting up surveillance



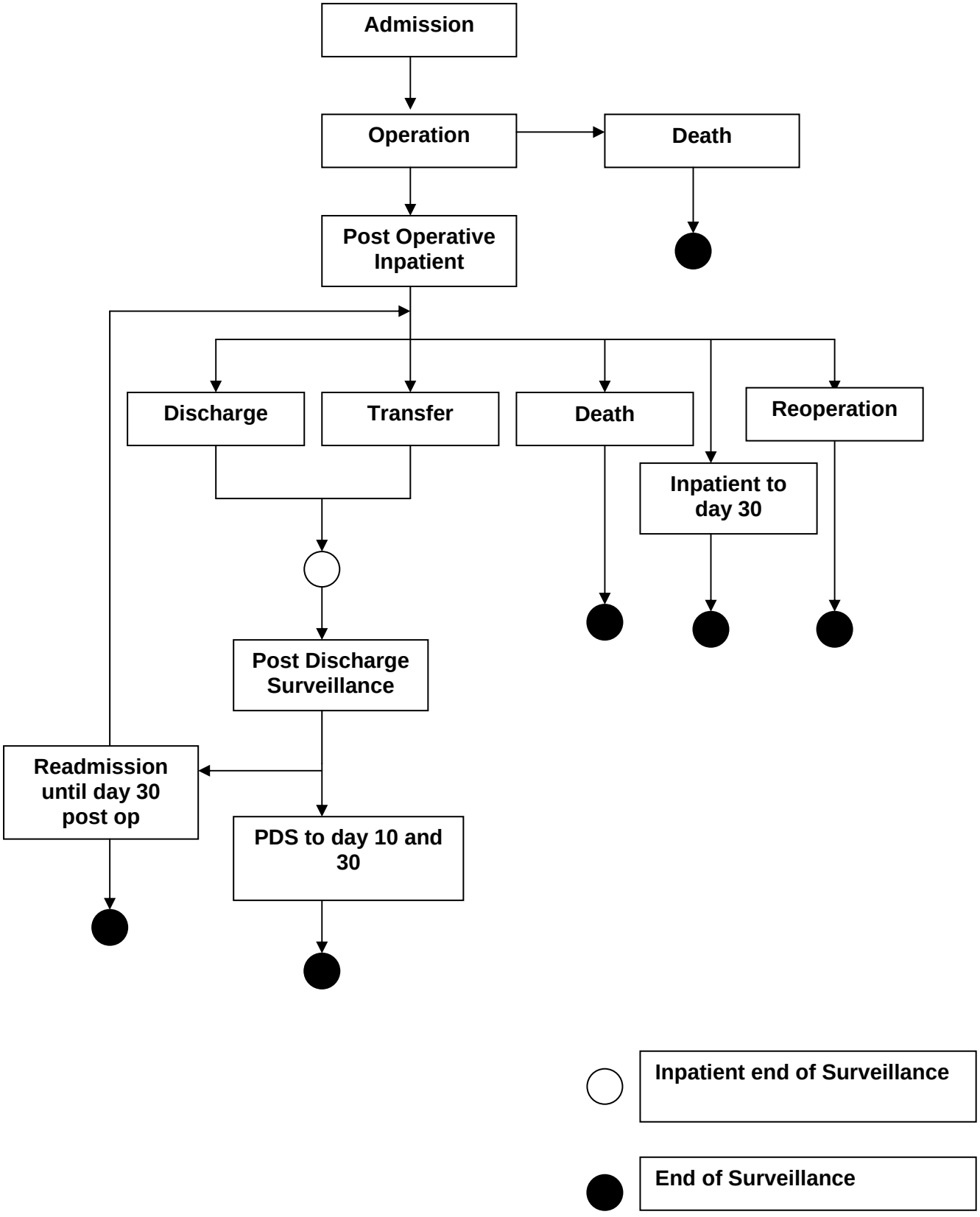
1.3b Flowchart- National data collection process



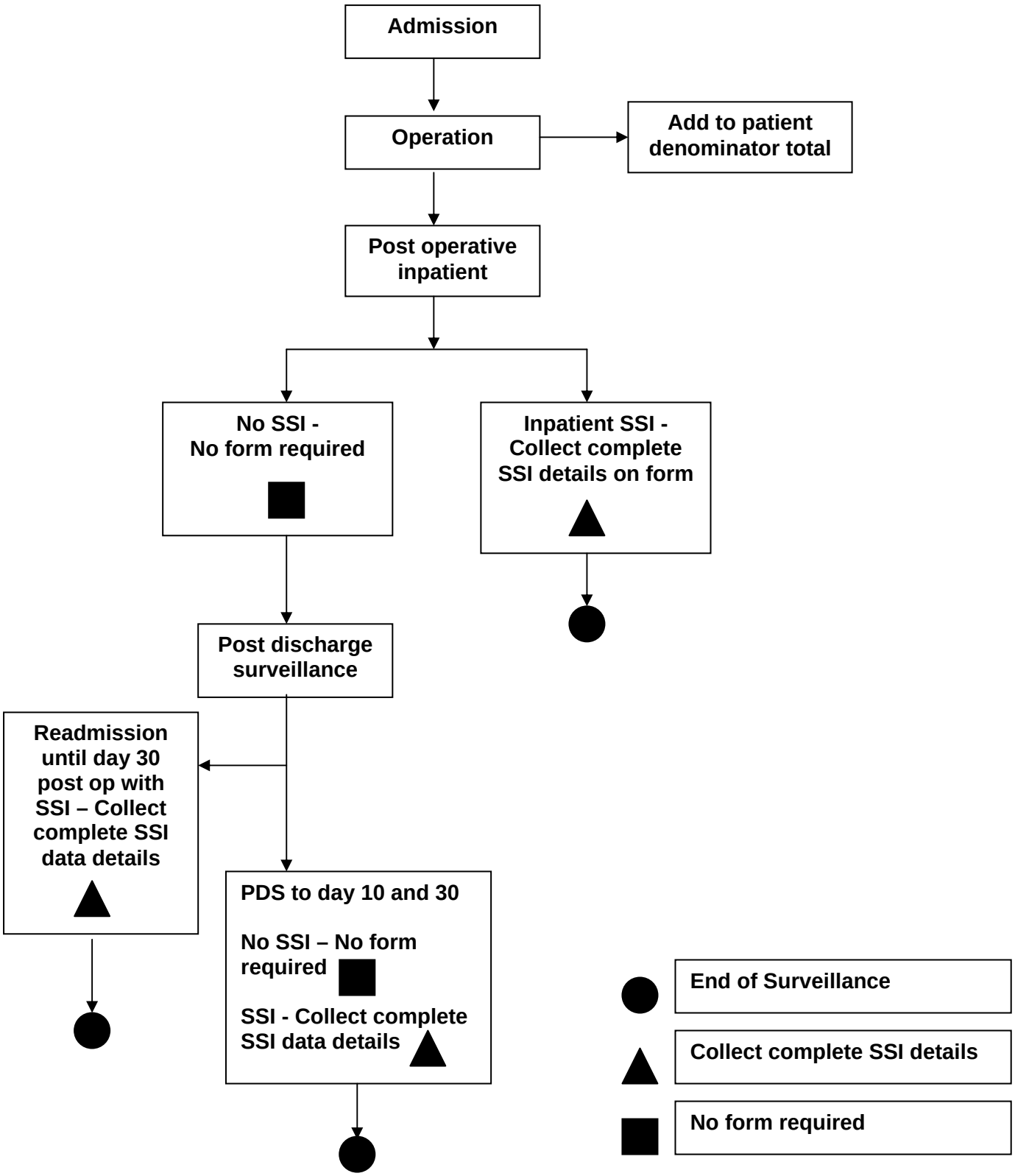
*The national data collection process is a by-product of the local surveillance programme within the healthcare provider. Emphasis is placed on active local feedback of SSI surveillance data.

Hospitals which choose to collect data in existing local systems are responsible for ensuring that the data sent to HPS for national surveillance purposes conforms to the data specifications detailed within the relevant protocol.

1.3c Flowchart- Patient pathways for standard SSI surveillance



1.3d Flowchart – Patient pathways for Light SSI surveillance



NB: If at any point of surveillance an SSI is confirmed, apply criteria as per standard surveillance methodology.

1.4 DATA MANAGEMENT

- Consideration should be given as to how data will be managed at the setting up stage of programmes.

- Data collection tools can be devised and managed locally, in conjunction with the SSHAIP team at HPS.

- There are three ways in which data can be collected and acquired:
  - The use of automated form processing locally.
  - Web Based reporting.

1.5 SETTING UP SSI POST DISCHARGE SURVEILLANCE

1.5a Introduction

Due to advances in surgical techniques, length of stay following surgery has decreased.[10] As the length of post operative in patient stay affects the numbers of infections detected, it is recommended that post discharge surveillance (PDS) is carried out, in particular for, those procedures that have an expected short length of hospital stay. The Scottish Government took cognisance of this and since April 2009 it has been mandatory to conduct post discharge SSI surveillance for caesarean section to 10 days post procedures.[11] For Hip arthroplasty procedures it is required to conduct readmission surveillance to 30 post operative days.[12] More detail can be found in the Mandatory requirements of SSI surveillance supplement at: http://www.hps.scot.nhs.uk/haiic/sshaip/guidelinedetail.aspx?id=53706.

1.5b Requirements for post discharge SSI surveillance

If valid and reliable data on post discharge SSI's are to be obtained, and if the information collected by different centres is to be comparable, the methods adopted should have the same degree of completeness of coverage of the population at risk, should identify these infections using the same definition and have similar levels of diagnostic accuracy. The gold standard for PDS being that the wound is observed by staff trained in standard SSI surveillance definitions.

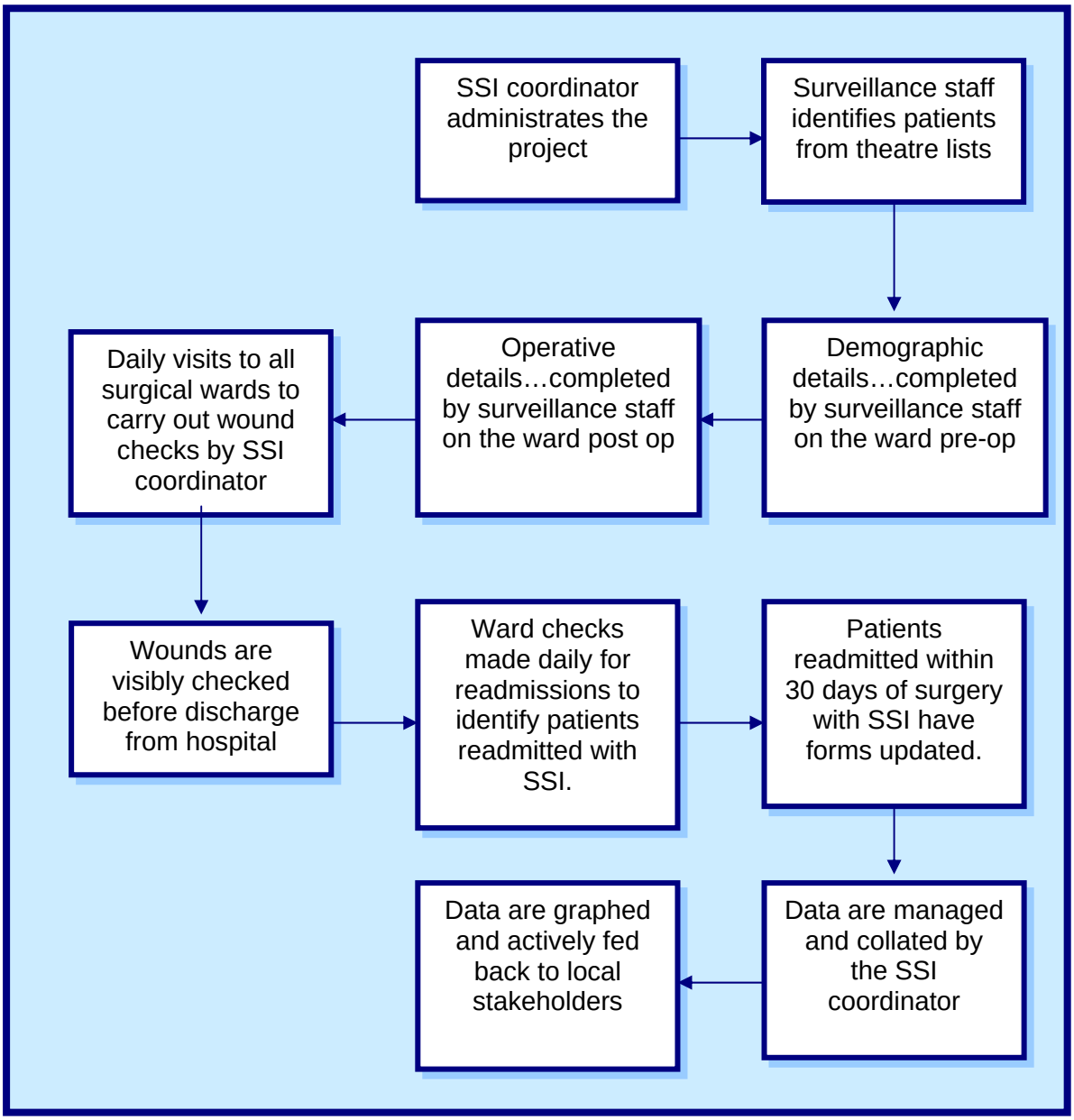
For national mandatory (caesarean section) PDS standardised observational methods for identifying SSI and for diagnosis should be in place in all hospitals.

The mandatory requirements in Scotland are:

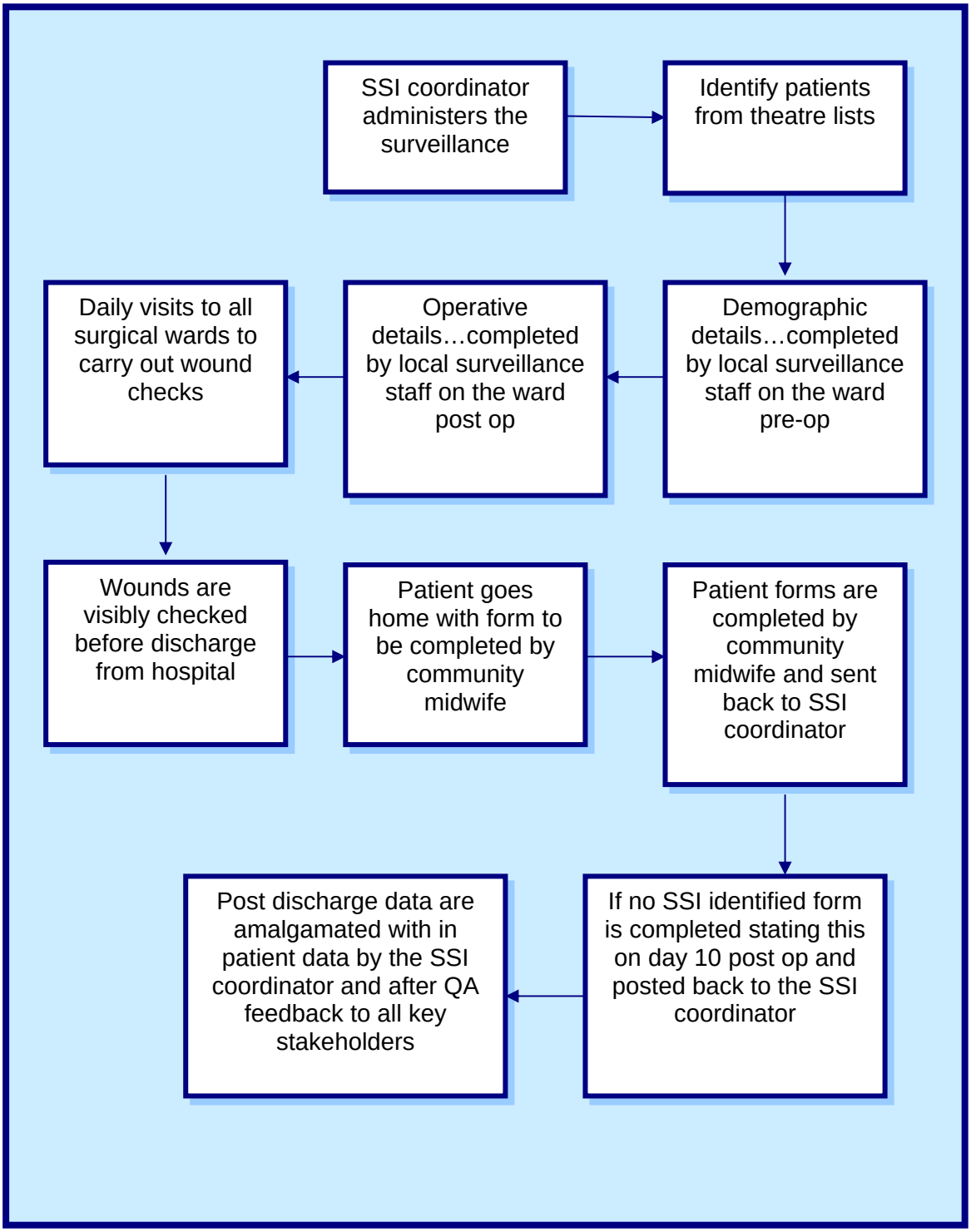
- Readmission surveillance up to 30 days post operatively for a hip arthroplasty procedure (see flowchart 1.5c).

- PDS utilising the normal patient pathway to day 10 post operatively for all elective and emergency caesarean section procedures performed (see flowchart 1.5d).

1.5c Flowchart- Orthopaedic model



1.5d Flowchart- The caesarean section model



1.5e Implications for practice

- To ensure comparable validity of data the same method i.e., direct observation, for identifying and diagnosing SSI should be adopted at all hospitals undertaking readmission and PDS.

- The SSI definitions applied before and after discharge are identical.

- Those monitoring the surgical wounds must be trained in the monitoring, and diagnosing of SSI according to the standard definitions.

- The duration of surveillance should be the same at all hospitals undertaking readmission and PDS of SSI.

References

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