An evaluation of the national rollout of the HIV and AIDS Reporting System (HARS)

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INTRODUCTION

Public Health England (PHE) (and its predecessors) has monitored HIV new diagnoses since the start of the epidemic through a number of different surveillance systems. The HIV and AIDS Reporting System (HARS) is a dataset managed by PHE which collects information on all people seen for HIV care at specialist HIV outpatient clinics in England.

HARS was approved as an Information Standard in 2012 and subsequently updated in 2016 (1) to reflect developments in diagnosis and treatment (HARS v1.2). The primary aim of HARS is for surveillance with secondary uses to monitor quality of HIV care and to directly inform the commissioning of HIV services through the National Tariff Payment System (2).

HARS is a consultation based dataset which is reported on a quarterly basis in XML format. There are 67 fields in HARS; information is collected on demographics, service use, attendance, diagnosis, treatment, clinical profile and death. 27 fields in the dataset are mandatory, two are optional and 38 are required (not always applicable but must be completed if so) (3).

Using the HARS data submitted to PHE, we aim to evaluate the national rollout of the HARS dataset, highlighting key successes and challenges.

METHODS

HARS implementation was assessed the rollout status and number of submissions received by quarter between 2014 and 2018. Data quality was assessed using measures outlined in Figure 1. Unprocessed data were used to ensure data quality could be robustly assessed, as further cleaning and processing are performed by PHE to improve the completeness and accuracy of data for official statistics publication.

Where data were not submitted to HARS, clinics completed an Excel form to report people receiving HIV specialist care (1.2% of submissions). These submissions have not been included in this analysis.
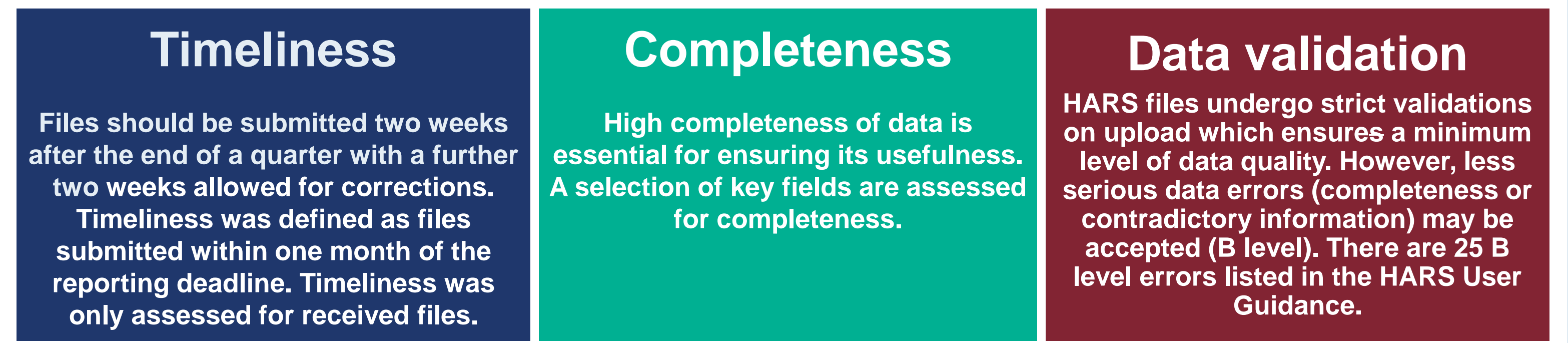

Timeliness	Completeness	Data validation
Files should be submitted two weeks after the end of a quarter with a further two weeks allowed for corrections. Timeliness was defined as files submitted within one month of the reporting deadline. Timeliness was only assessed for received files.	High completeness of data is essential for ensuring its usefulness. A selection of key fields are assessed for completeness.	HARS files undergo strict validations on upload which ensures a minimum level of data quality. However, less serious data errors (completeness or contradictory information) may be accepted (B level). There are 25 B level errors listed in the HARS User Guidance.

Figure 1. HARS data quality measures

RESULTS

- In 2014, there were 180 HIV service providers required to submit HARS data; by 2018 this had reduced to 163, due to service reconfigurations.
- A breakdown of HARS IT system suppliers can be seen in Figure 2.
- HARS rollout was gradual, beginning in 2014, with full coverage of clinics in 2016. HARSv1.2 rollout began in 2017 (Figure 3).
- Timeliness of HARS submissions has improved over the 5 years (Figure 4). As a region, London had the most issues with timeliness of data submissions. Timeliness was affected in 2017 and 2018 by the rollout of HARSv1.2.
- Completeness of key HARS fields is extremely high (Figure 5). There were no major differences in completeness by region or IT system supplier.
- There are a high proportion of records received with minor (B level) errors; however this has improved with time. The level of errors is consistent with previous surveillance systems. Midlands and East of England has the lowest percentage of errors reported (Figure 6).
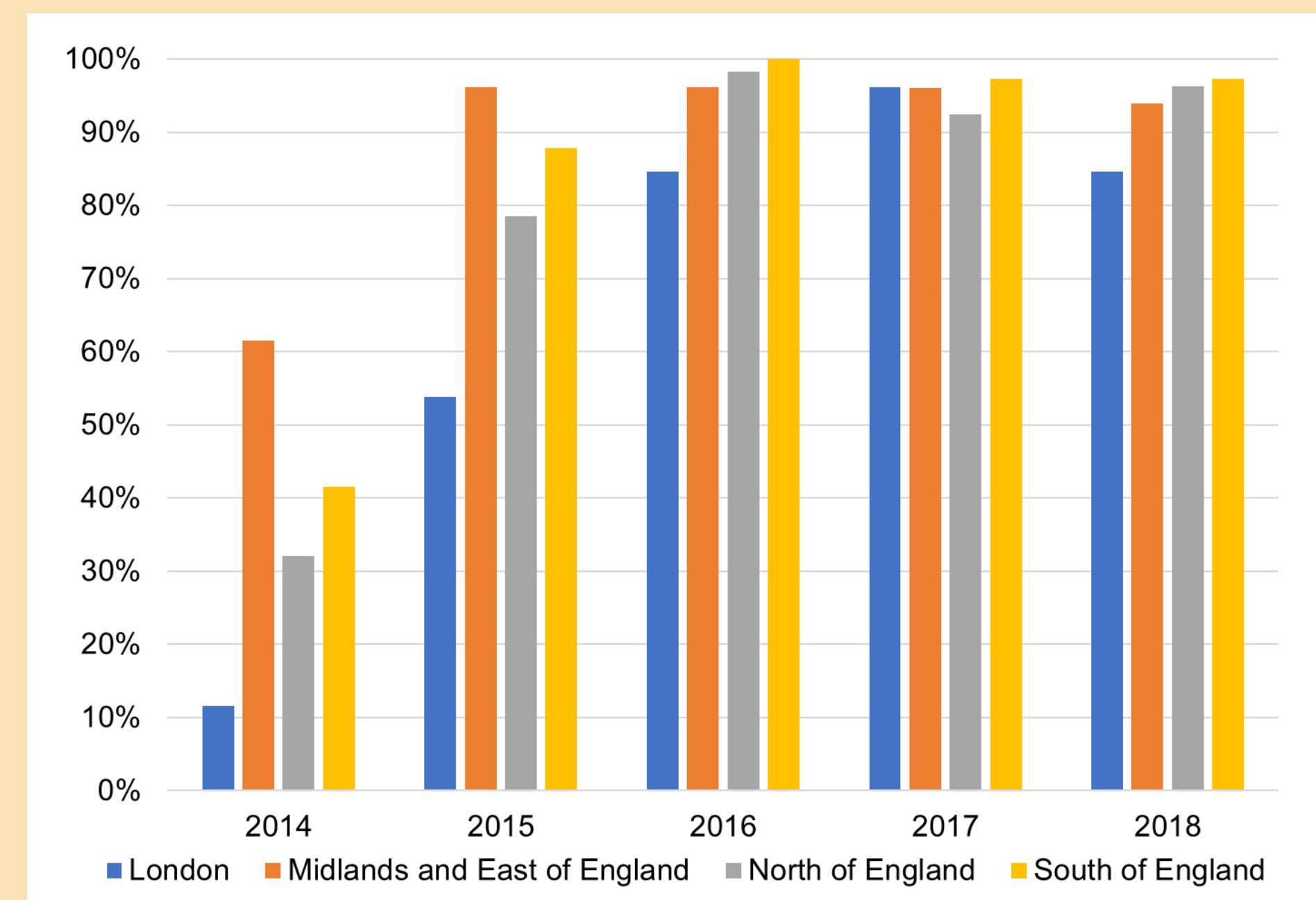

Figure 2. Breakdown of IT system suppliers for HARS, 2018

Figure 3. HARS rollout - percentage of sites reporting 4 quarters of HARS data by region, 2014-18
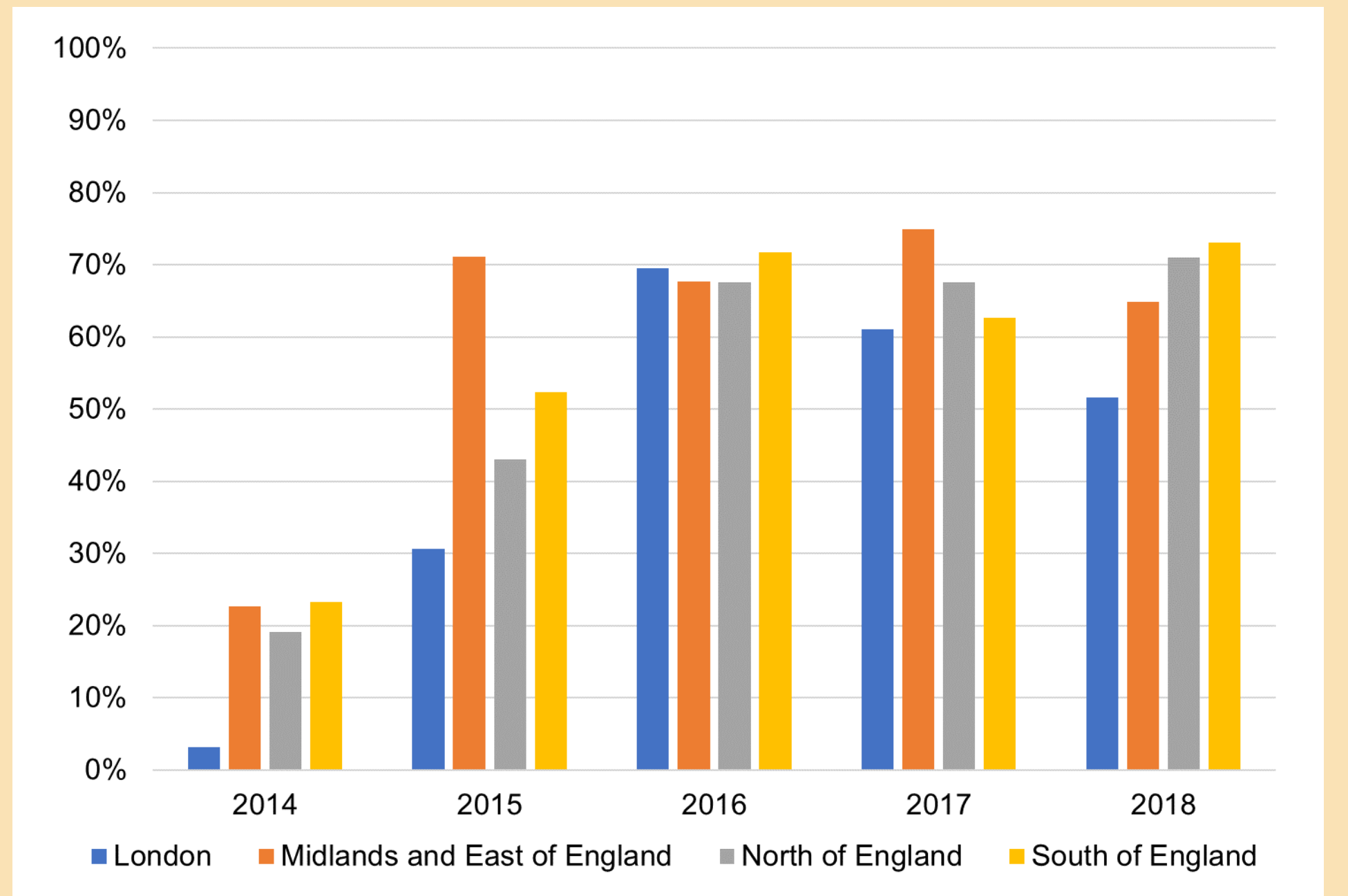

Figure 4. Percentage of HARS submissions received by reporting deadline by region, 2014-18
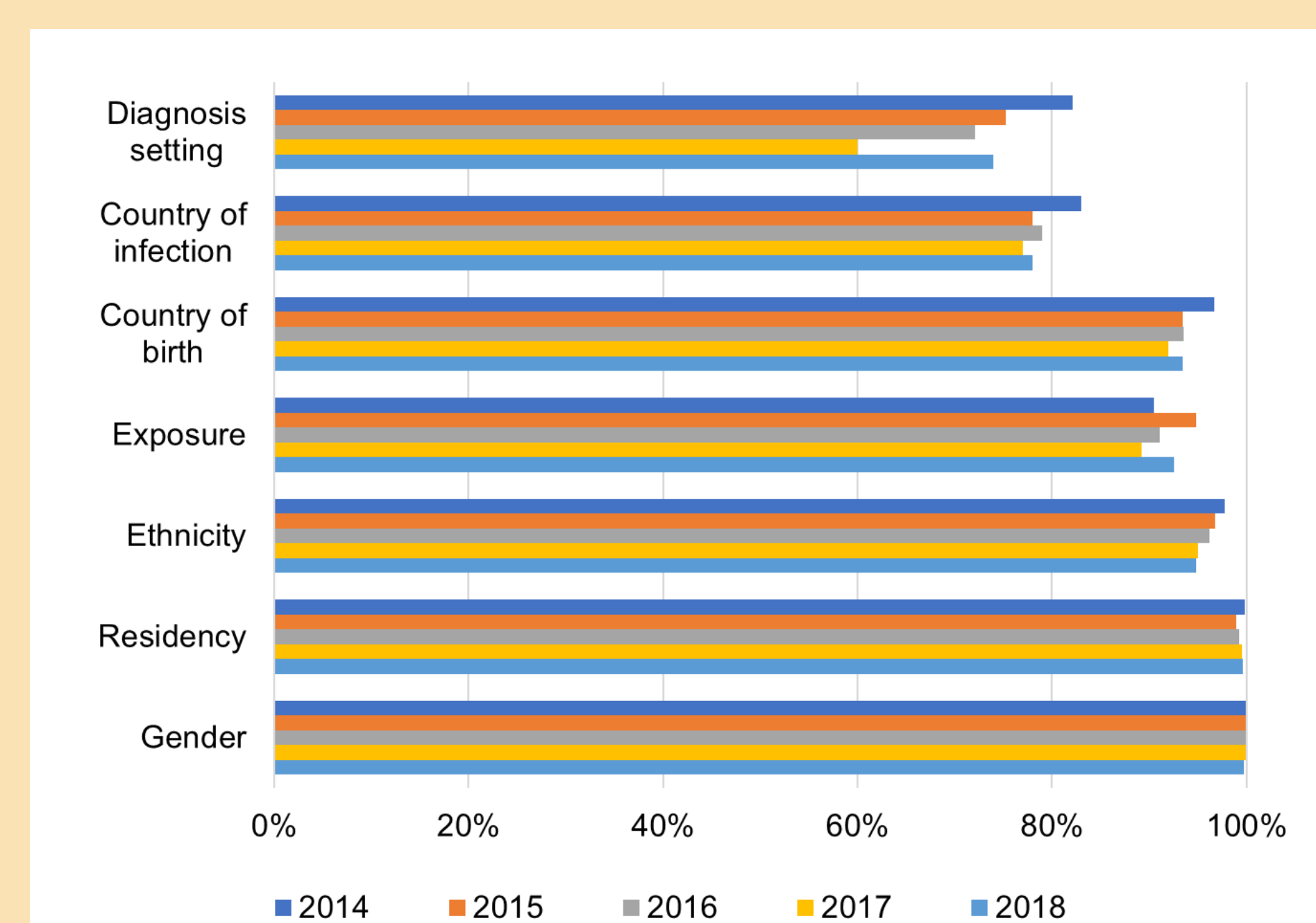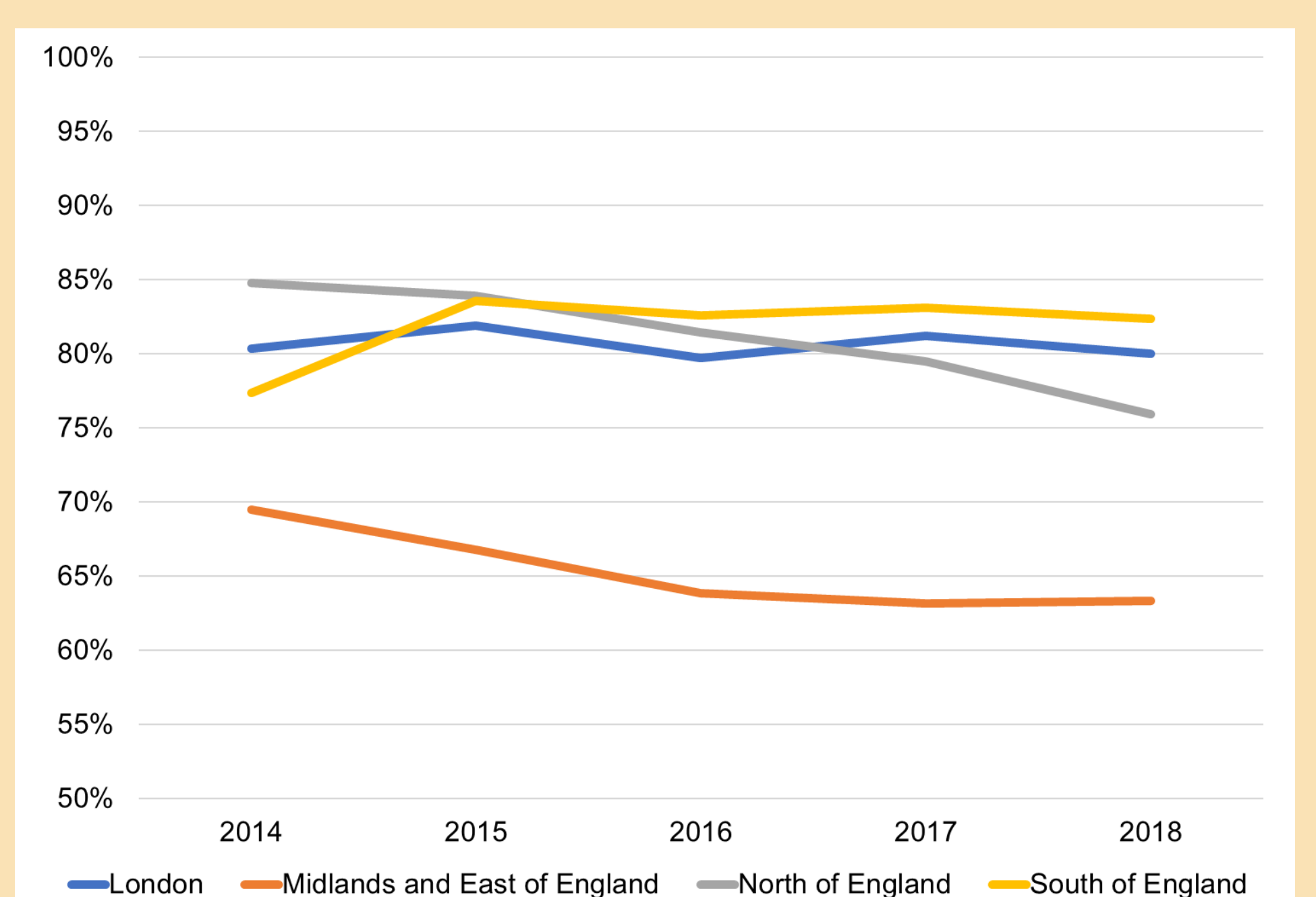

Figure 5. Completeness of key HARS fields, 2014-18

Figure 6. Percentage of records with B level of errors in HARS submissions by region, 2014-18
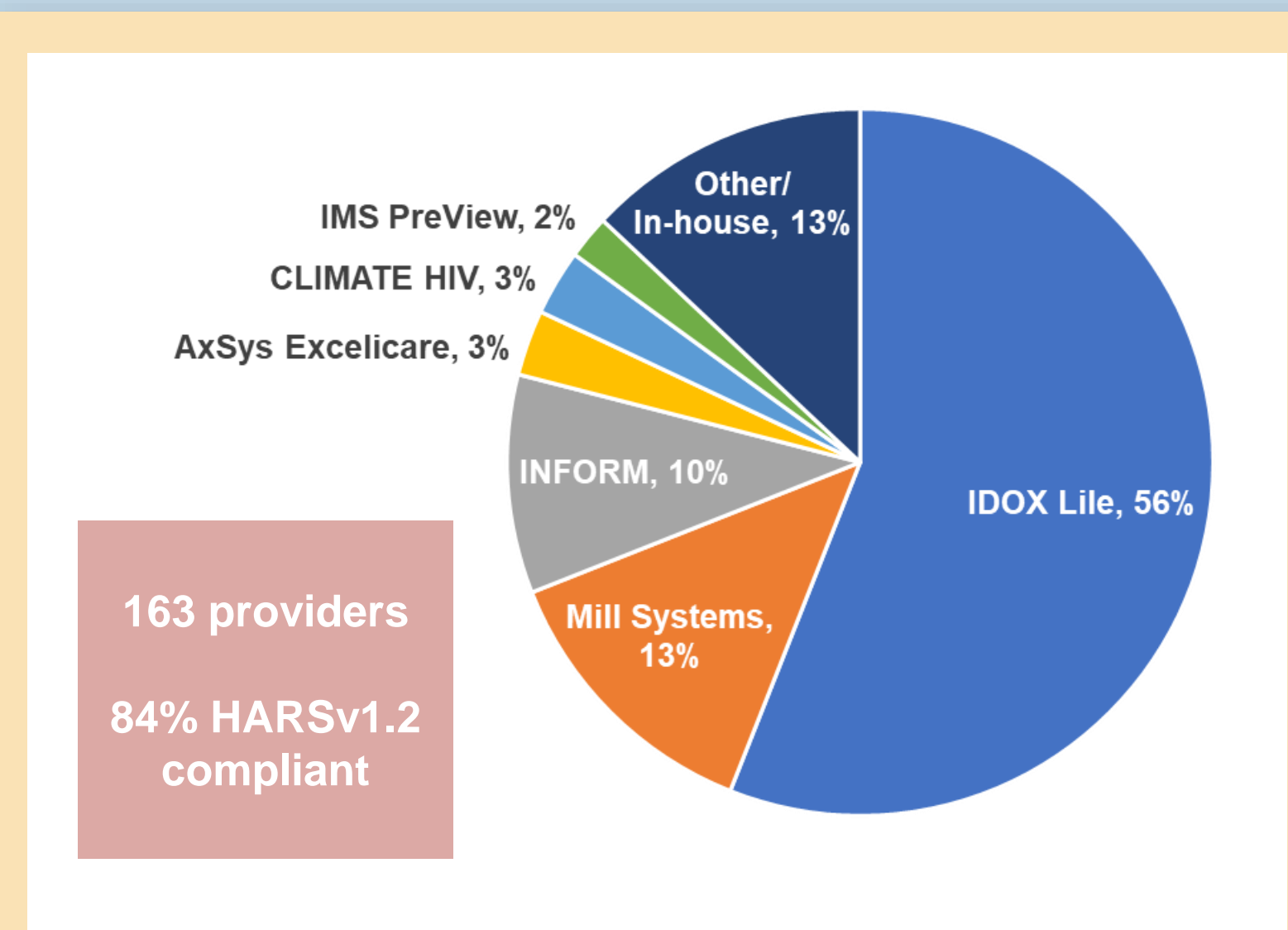
LIMITATIONS/CHALLENGES

- **XML format** – For providers and IT system suppliers, it has been challenging to ensure submissions meet the strict requirements of the XML schema. The automated upload and validation of XML files have also proved to be a challenge due to the technical nature of XML.

- **Service reconfiguration** - Several services have undergone changes with closures, merges, loss of staff, changes in trust/location as well as new IT systems. These changes have negatively impacted the timeliness and quality of HARS submissions.

- **Accuracy of data** – The nature of the HARS submission means it is difficult for providers to self validate the data submitted. HARS quarterly and annual completeness and summary reports are returned to providers to address this issue. In addition, several follow-up exercises are performed each year to improve the quality of data.

- **Capturing latest developments** – HARS was first designed in 2012, since then there have been further developments in diagnosis and treatment (e.g. new ART regimens) which led to the design and rollout of HARSv1.2. This process was time consuming with 4 years for NHS approval and rollout. HARS may need to be updated again in future.

DISCUSSION

- The rollout of HARS has been challenging for providers and IT system suppliers, with full rollout taking approximately 2 years for each iteration of HARS.

- The are some regional differences, particularly in London where almost half of HIV patients are seen for care and diagnosed. However, overall data quality is high, particularly completeness, and improving.

- HARS still has an issue with timeliness of data submissions but has proven to be less burdensome for most providers due to the routine nature of data collection and use of IT software.

- Ongoing work is required to identify further data issues, many of which are specific to local areas/systems. This will help to ensure that the potential of HARS data is realised.

- Complete and timely HARS reporting is essential to monitor the clinical outcomes of people in HIV care and to inform the commissioning of HIV services, with the introduction of the NHS England National Tariff Payment System.

ACKNOWLEDGEMENTS

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