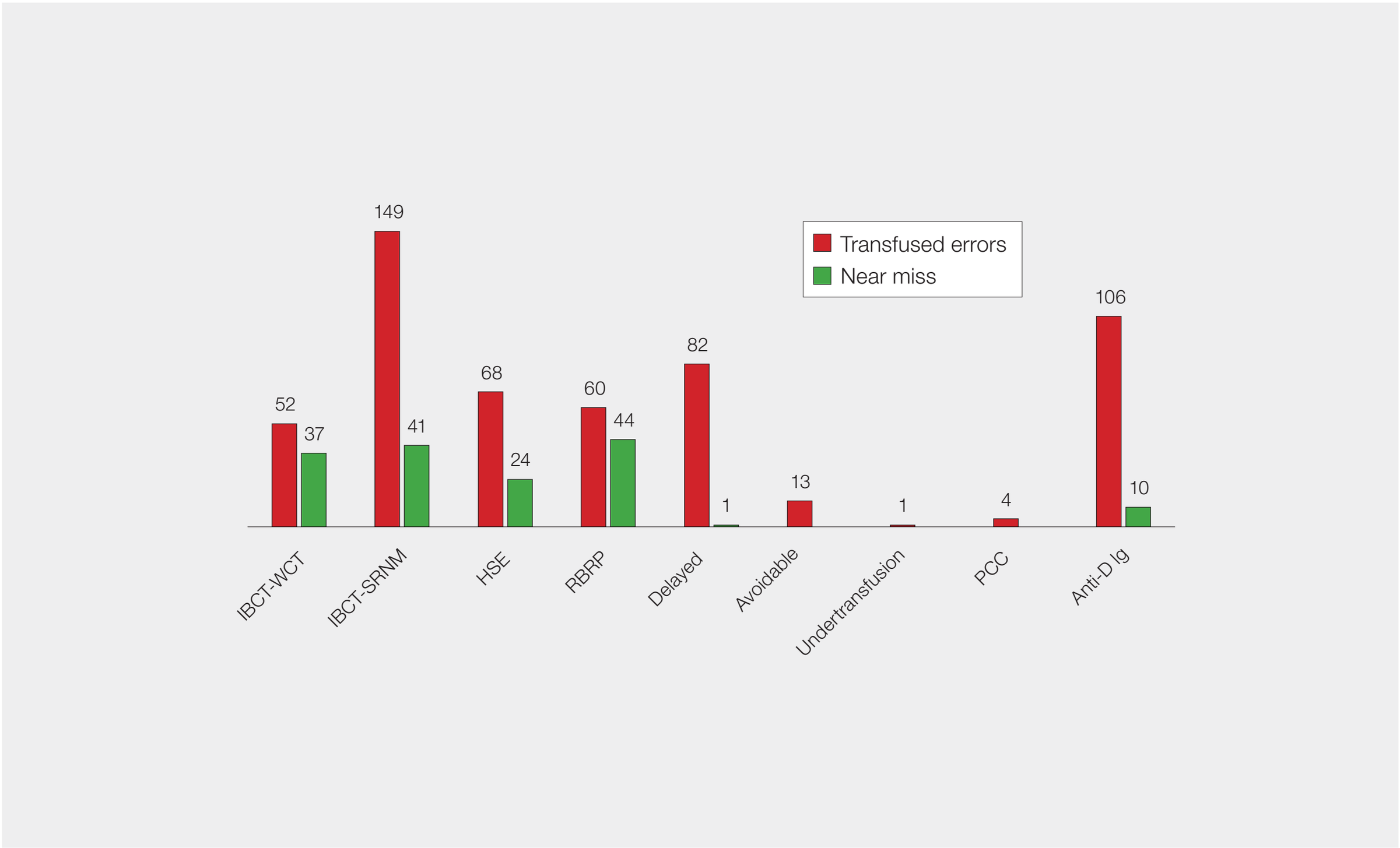
Laboratory Errors

FIGURES FROM THE ANNUAL SHOT REPORTS 2019-2025

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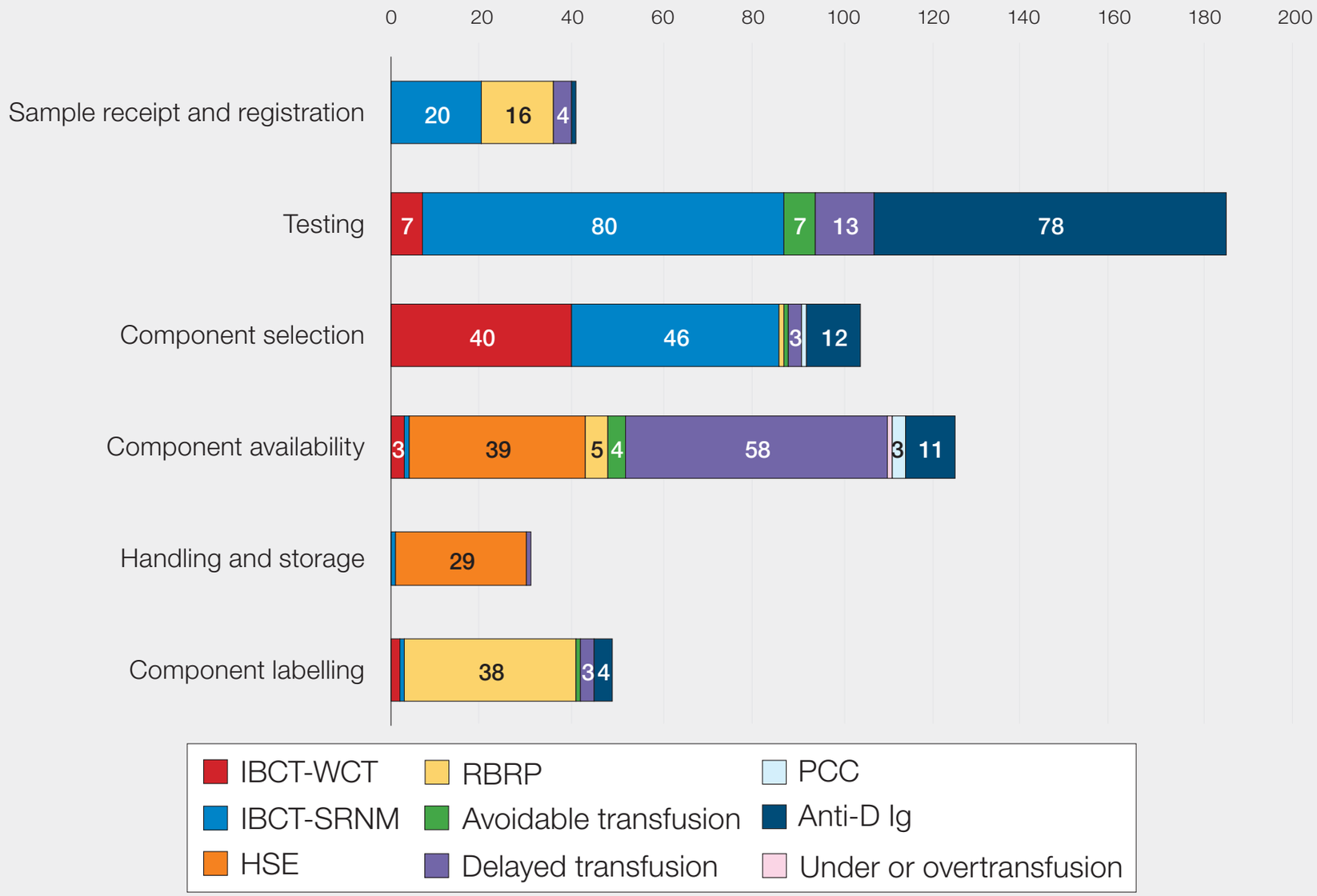
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Figure 18.1: Laboratory errors and near misses in 2025 (n=692)



HSE=handling and storage errors; IBCT=incorrect blood component transfused; Ig=immunoglobulin; PCC=prothrombin complex concentrates; RBRP=right blood right patient; SRNM=specific requirements not met; WCT=wrong component transfused

Figure 18.2: Laboratory errors classified by the transfusion step where the primary error occurred (n=535)



HSE=handling and storage errors; IBCT=incorrect blood component transfused; Ig=immunoglobulin; PCC=prothrombin complex concentrates; RBRP=right blood right patient; SRNM=specific requirements not met; WCT=wrong component transfused. Note: numbers <3 are too small to be annotated on the figure

Figure 18.3: Laboratory error reports with staffing and workload mismatch 2022-2025

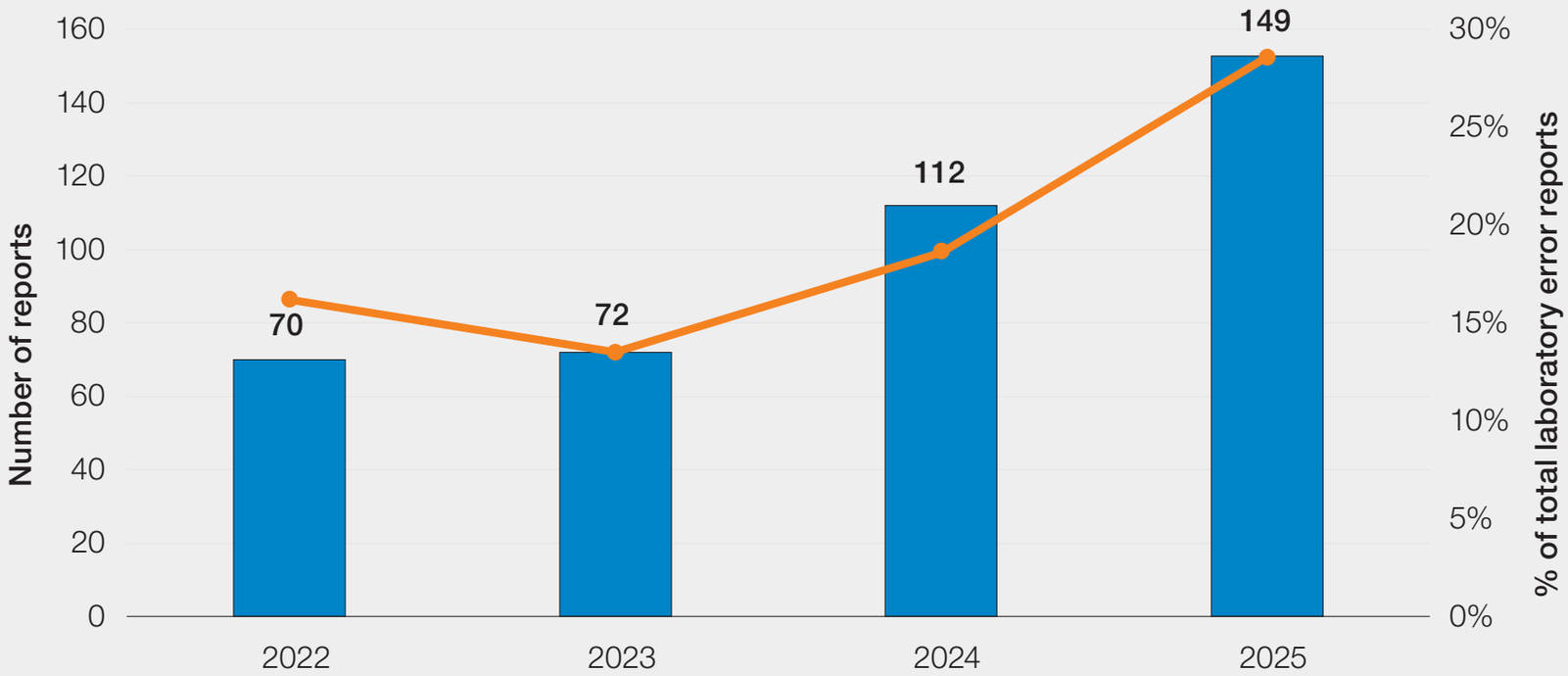


Figure 18.4: Incident investigation flow

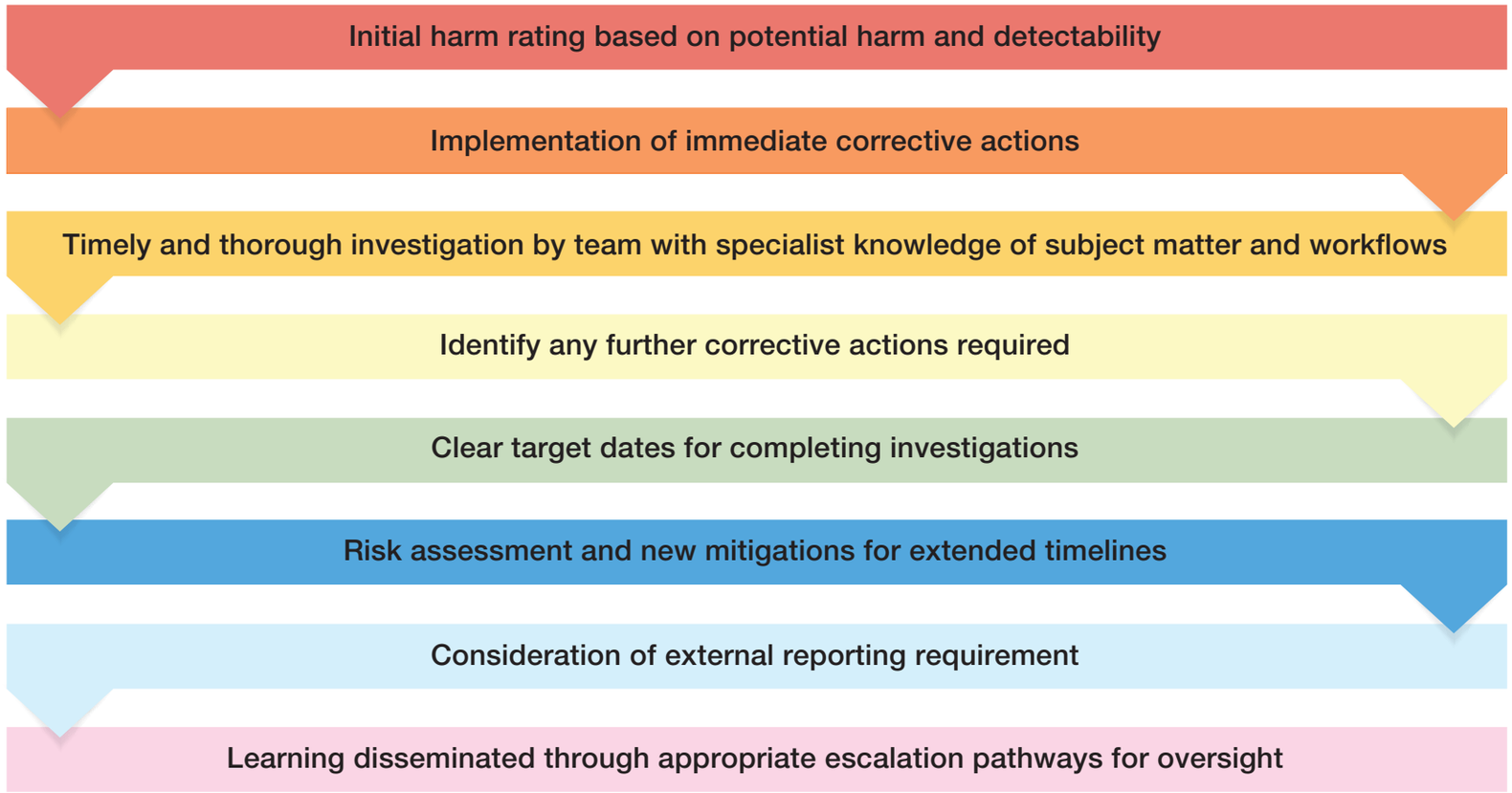
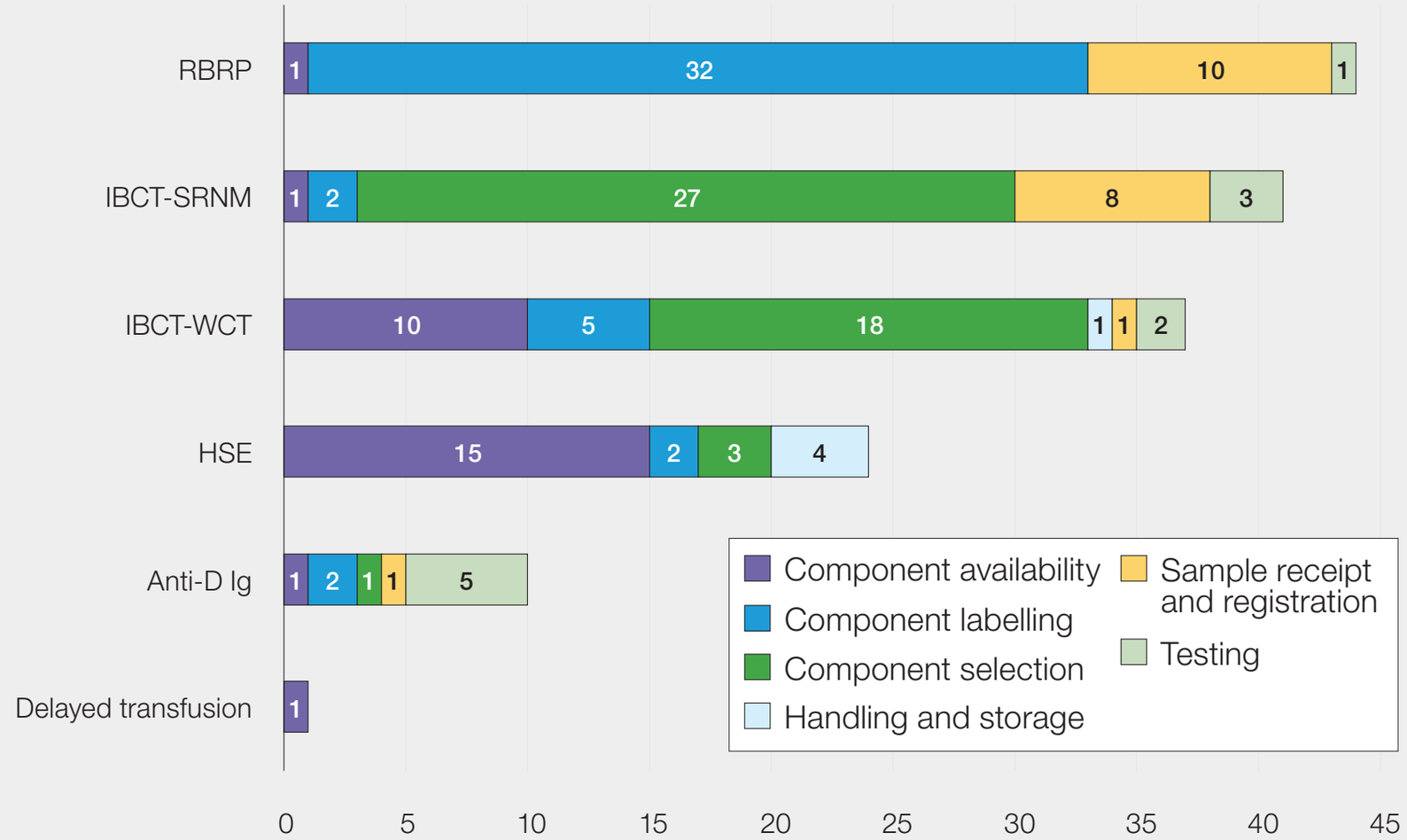
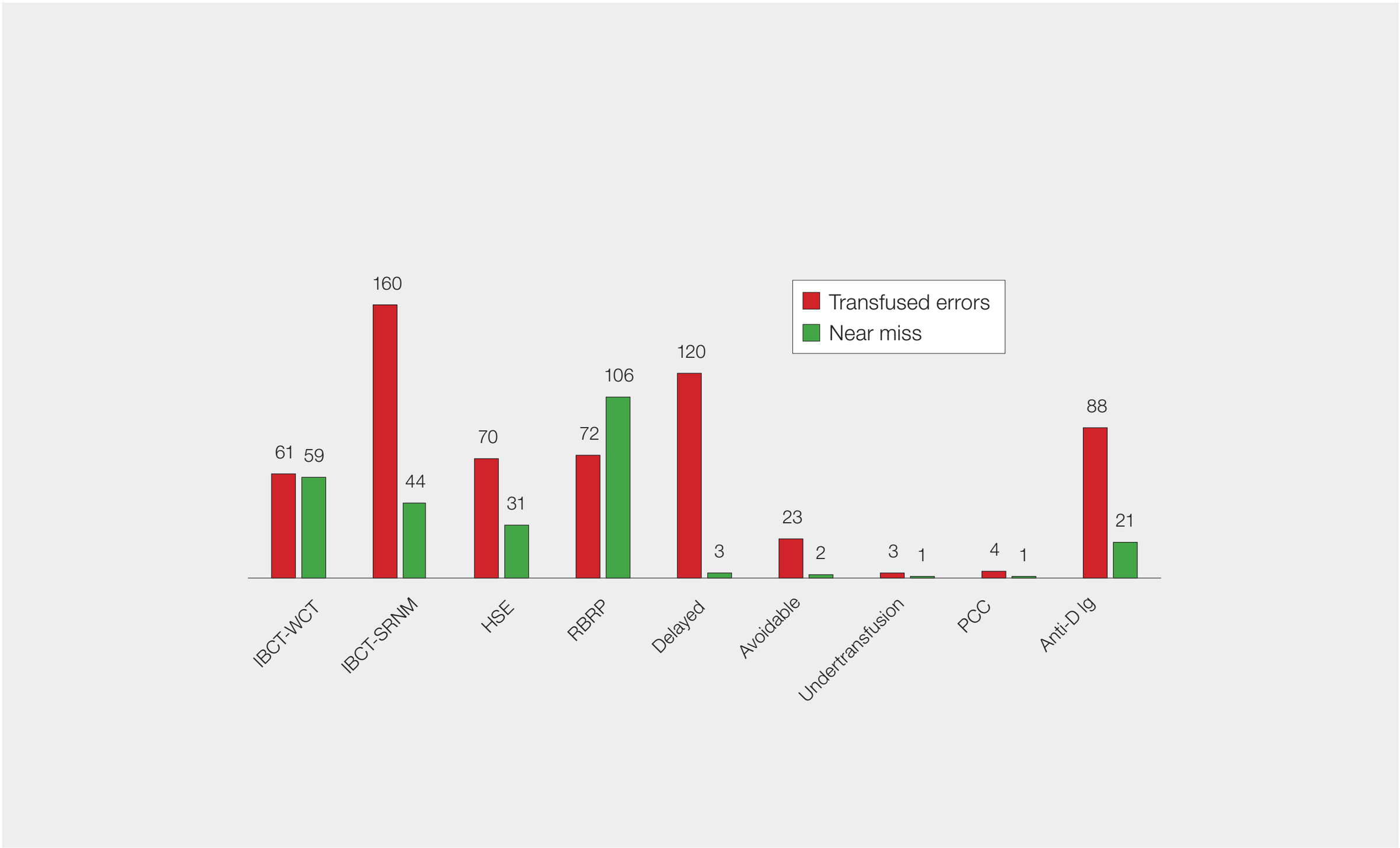


Figure 18.5: Laboratory NM classified by the transfusion step where the primary error occurred (n=157)



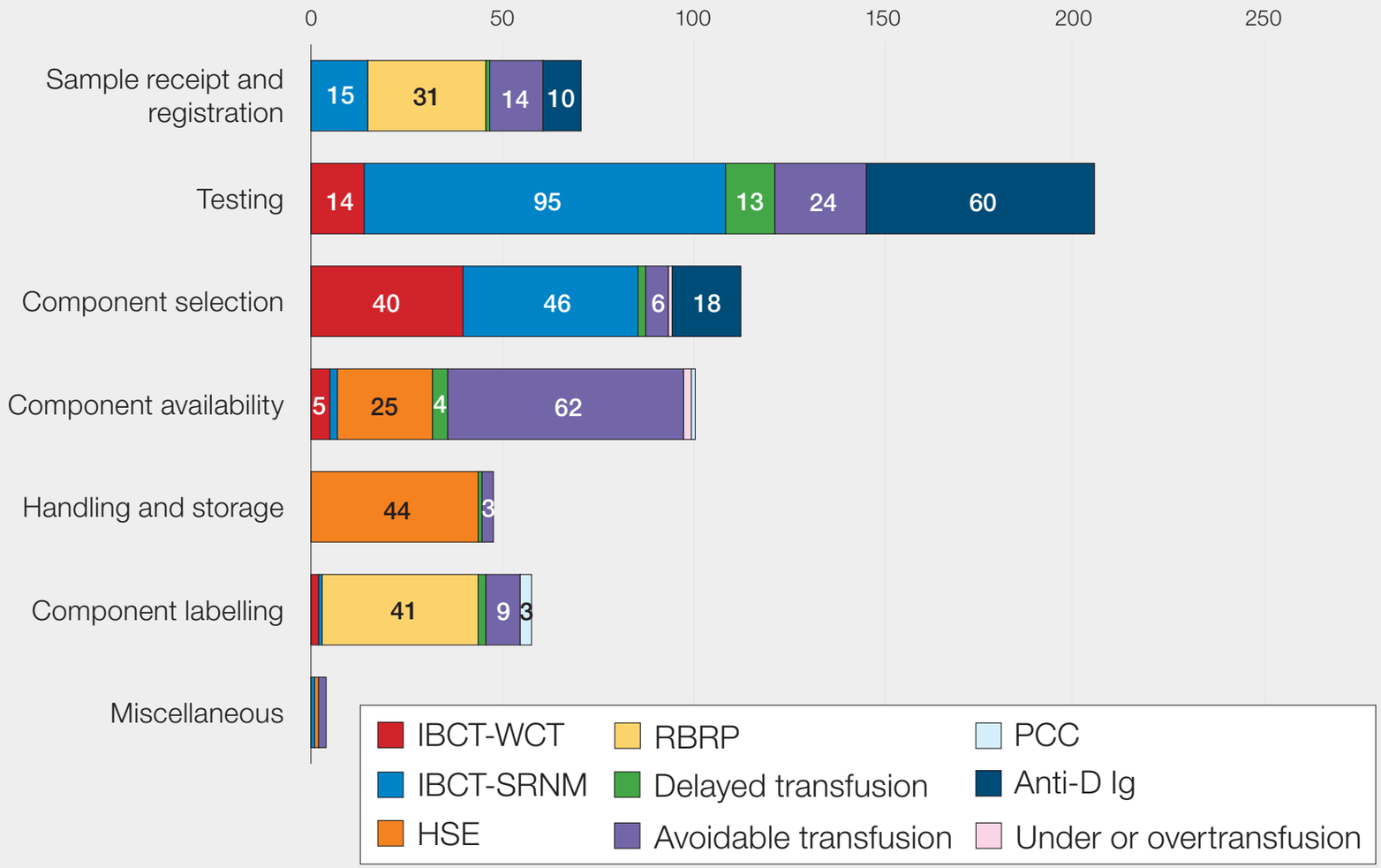
HSE=handling and storage errors; IBCT=incorrect blood component transfused; Ig=immunoglobulin; RBRP=right blood right patient; SRNM=specific requirements not met; WCT=wrong component transfused

Figure 17.1: Laboratory errors and near misses in 2024 (n=869)



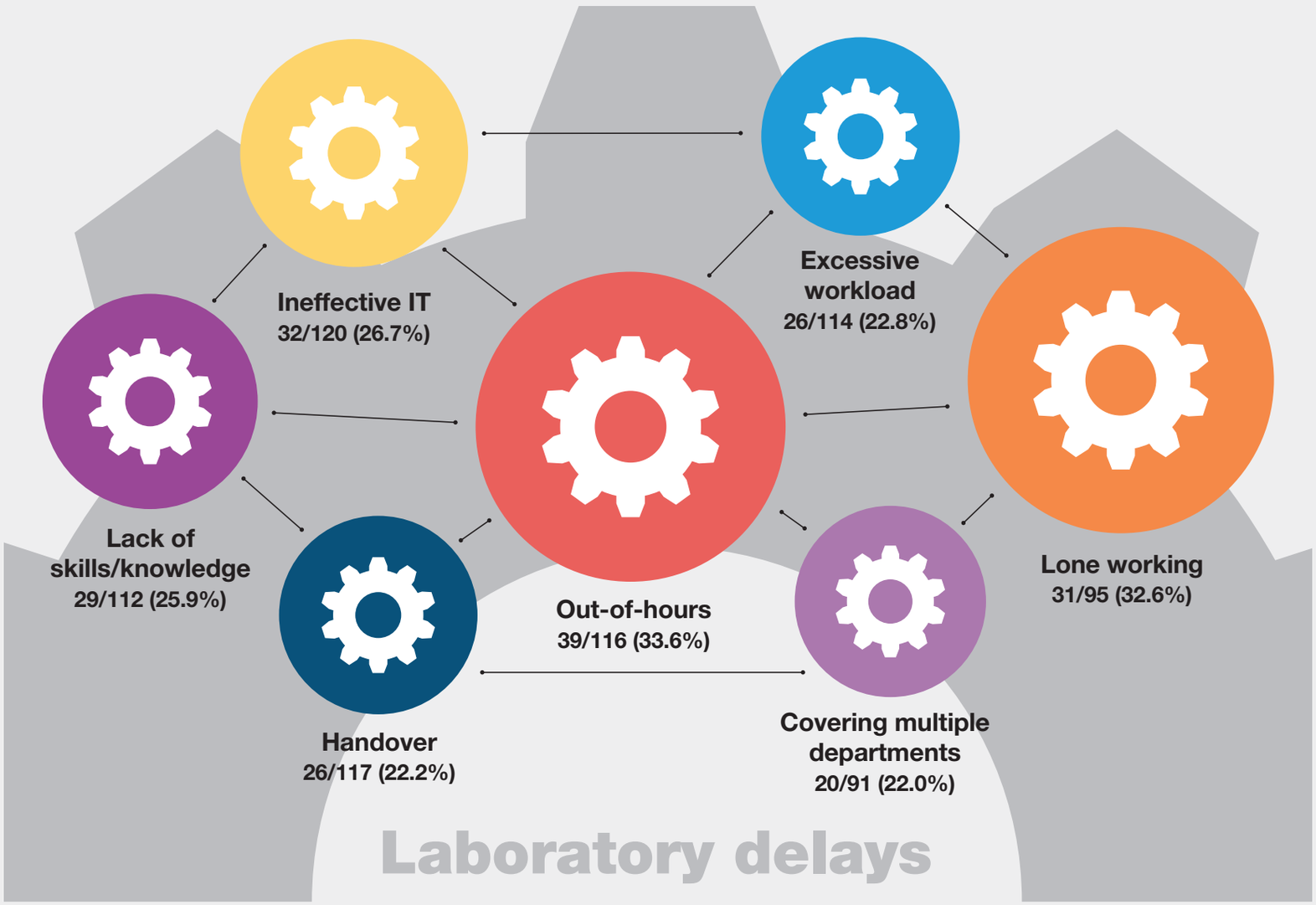
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrates; Ig=immunoglobulin

Figure 17.2: Laboratory errors in 2024, classified by the transfusion step where the primary error occurred (n=601)



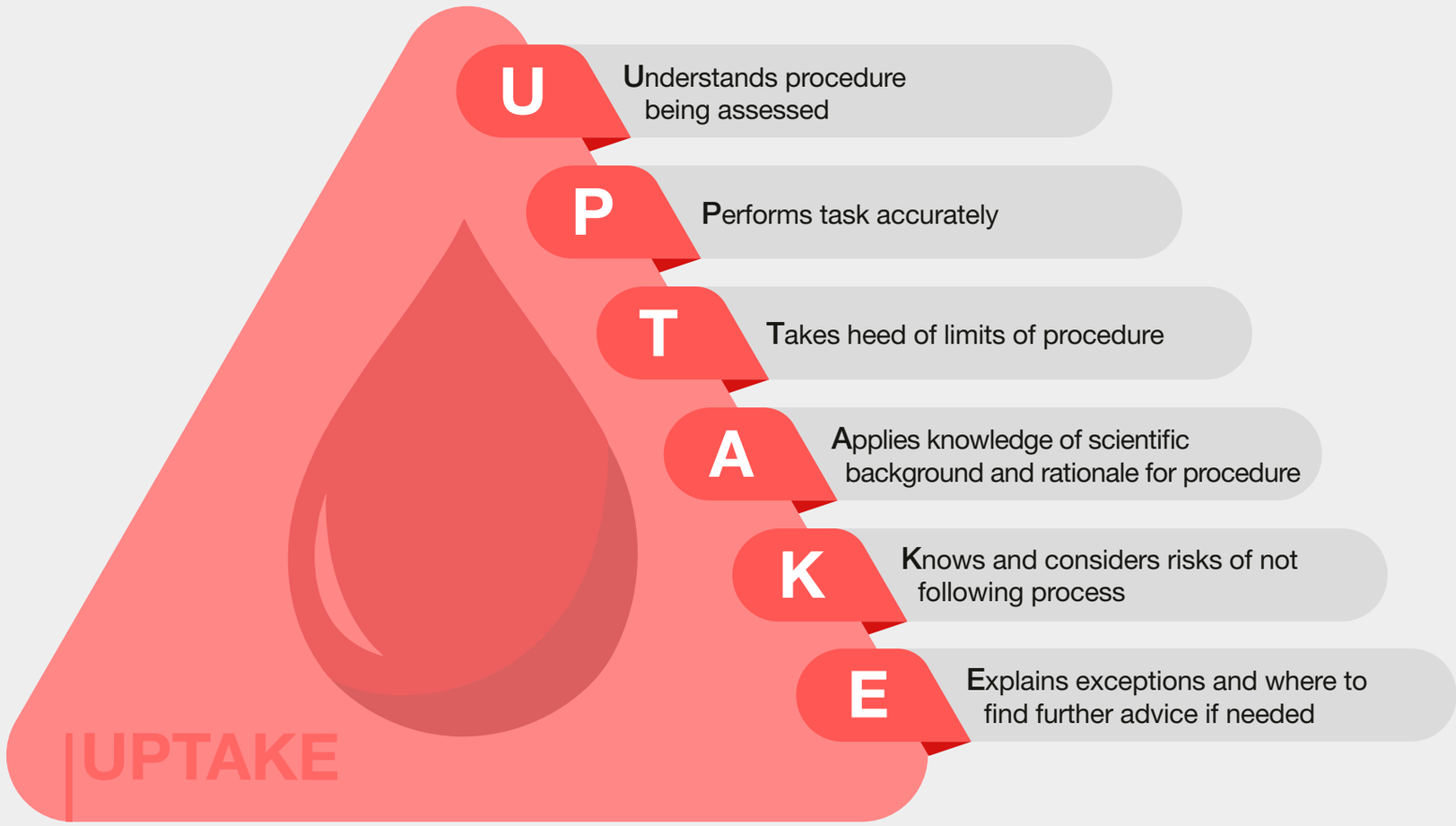
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrates; Ig=immunoglobulin. Note: numbers <3 are too small to be annotated on the figure

Figure 17.3: Factors interacting to contribute to laboratory delays in 2024



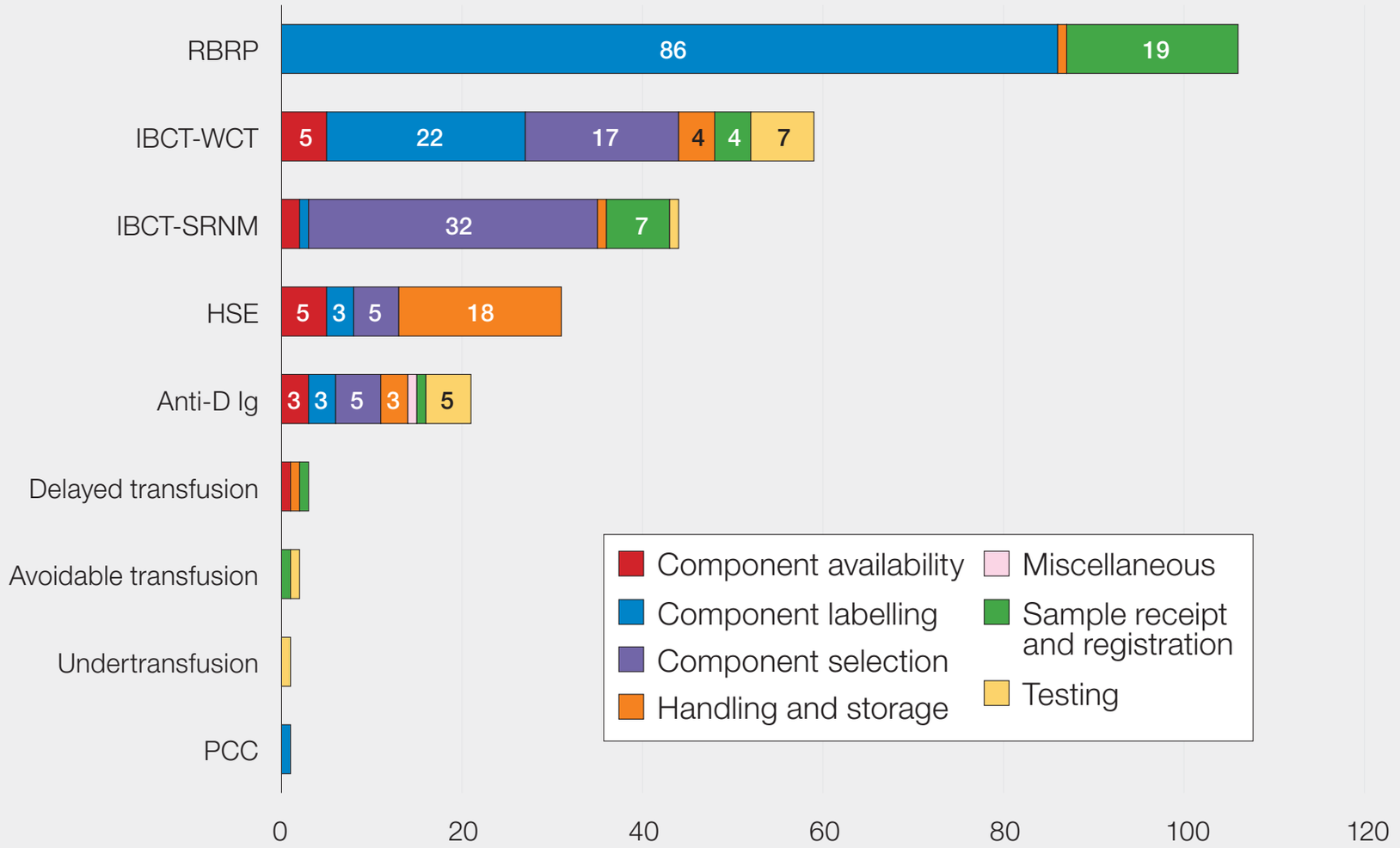
IT=information technology

Figure 17.4: UPTAKE competency assessment model



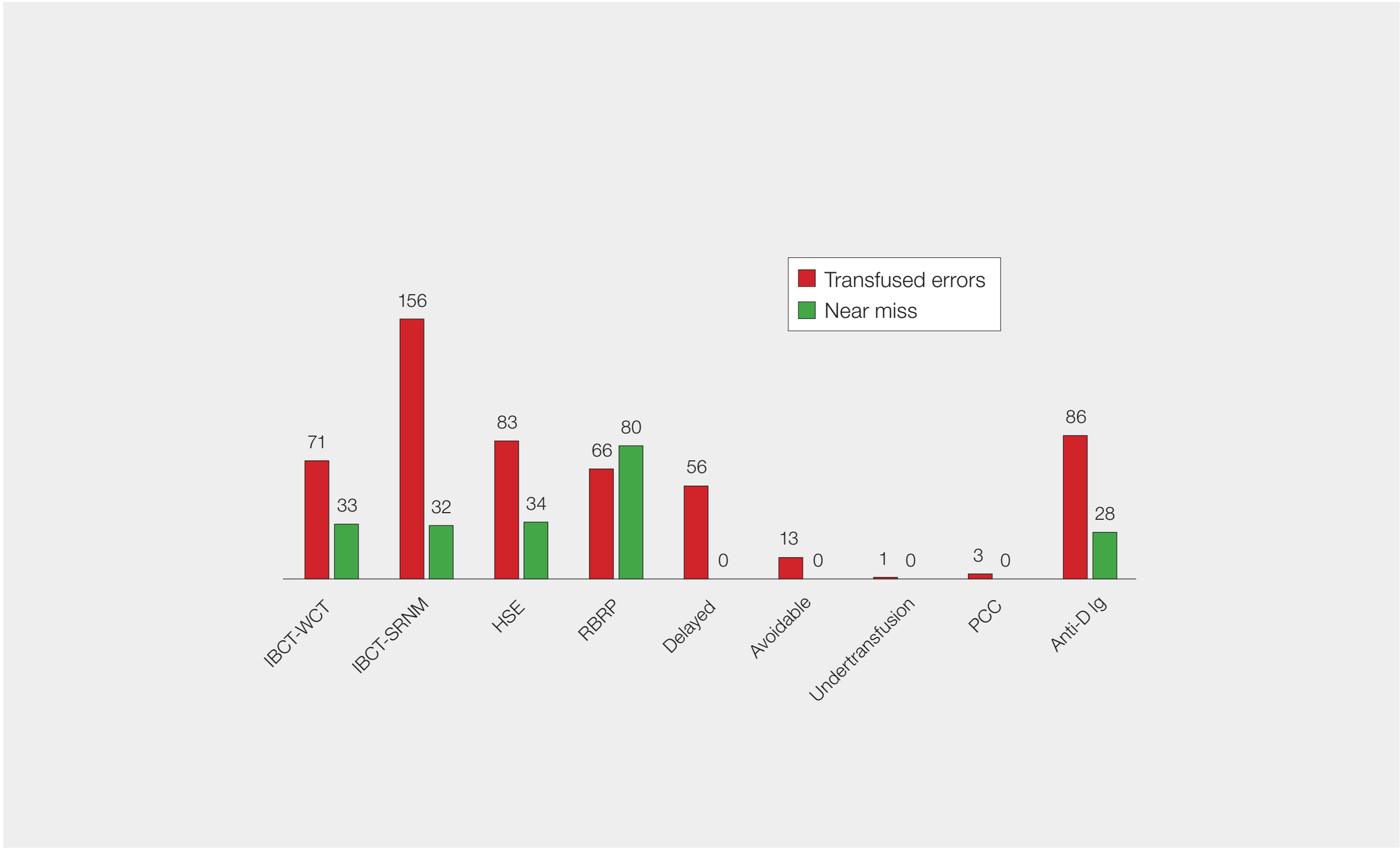
https://www.shotuk.org/resources/uptake-competency-assessment/

Figure 17.5: Laboratory NM classified by the transfusion step where the primary error occurred in 2024 (n=268)



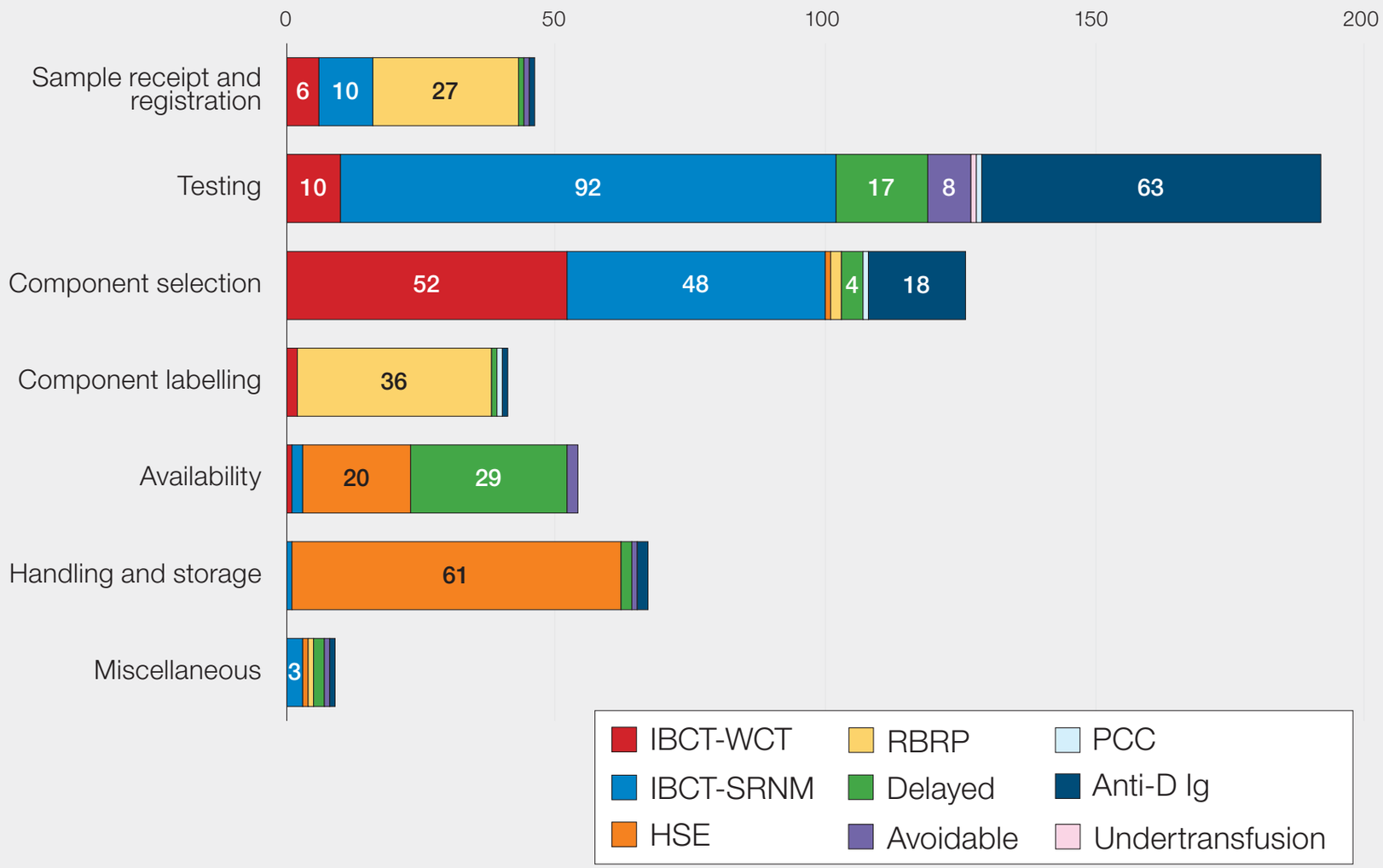
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrates; Ig=immunoglobulin. Note: numbers <3 are too small to be annotated on the figure

Figure 15.1: Laboratory errors and near misses by reporting category in 2023 (n=742)



IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 15.2: SHOT laboratory data across all categories showing the stage in the transfusion process where the primary error occurred (n=535)

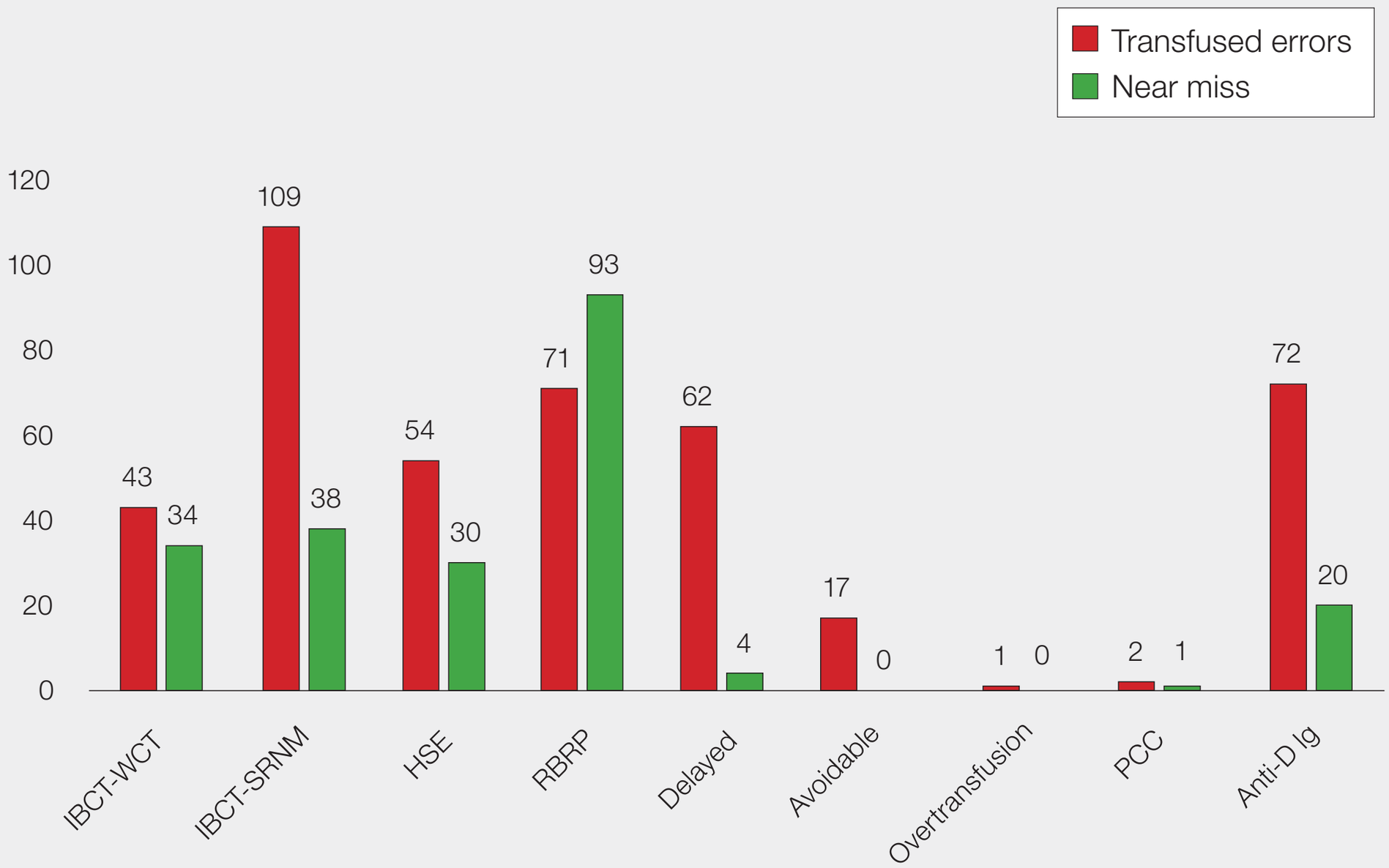


IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin Note: numbers <3 are too small to be annotated on the figure

Figure 15.3: Additional pressures on transfusion laboratories evident in 2023 SHOT data

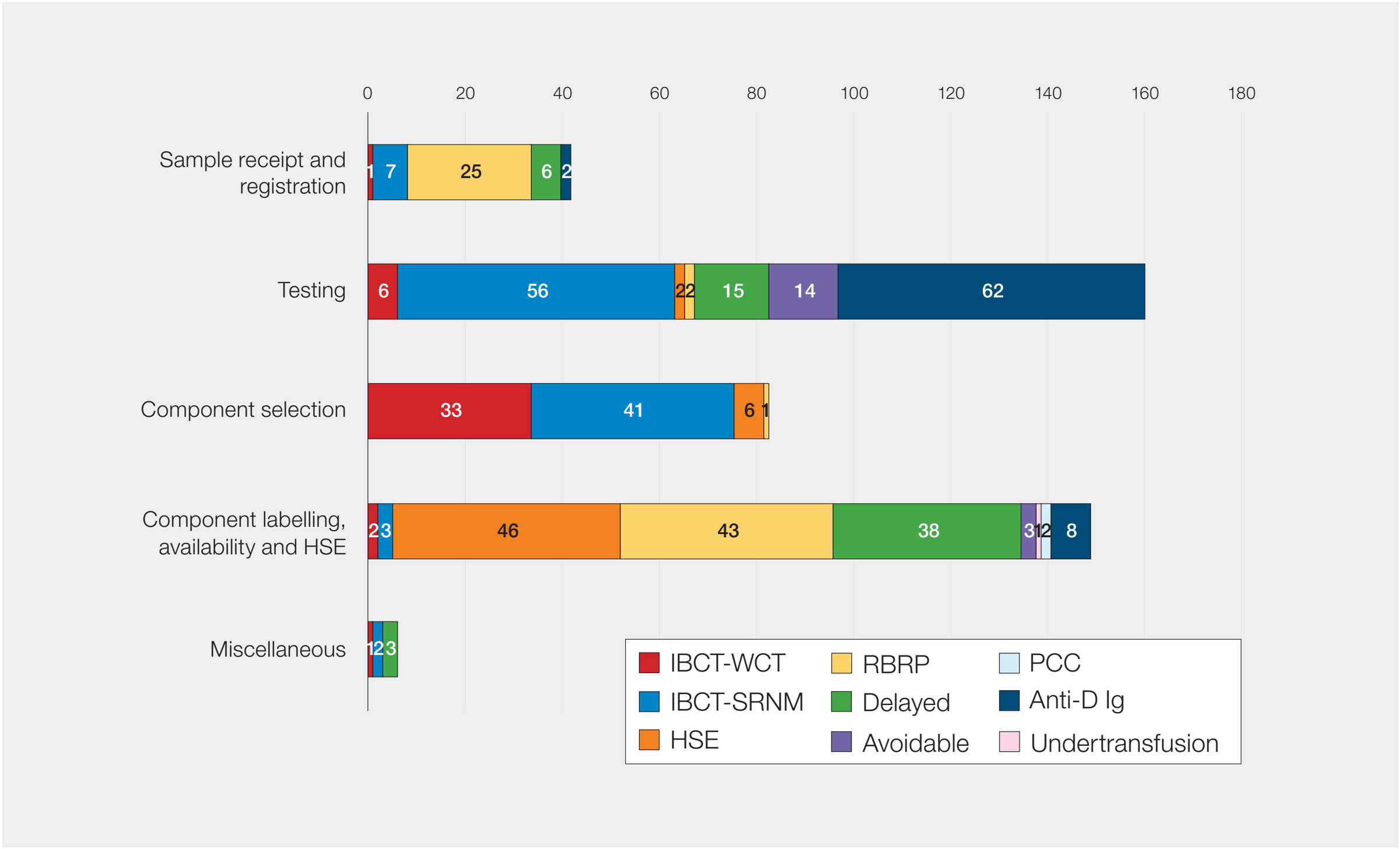


Figure 14.1: Laboratory incidents and near misses by category of outcome (n=651)



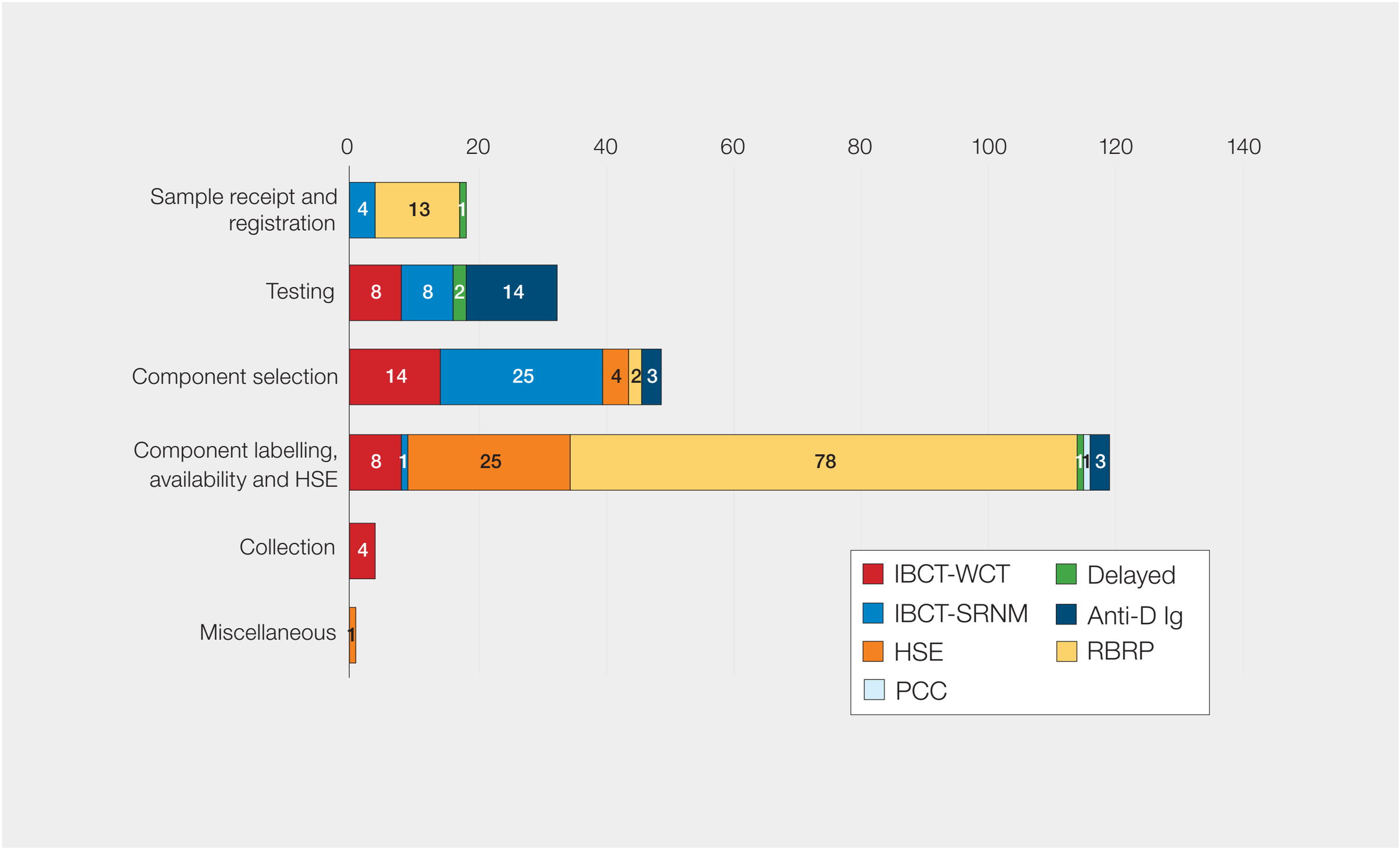
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 14.2: SHOT laboratory data across all categories showing the stage in the transfusion process where the primary error occurred (n=431)



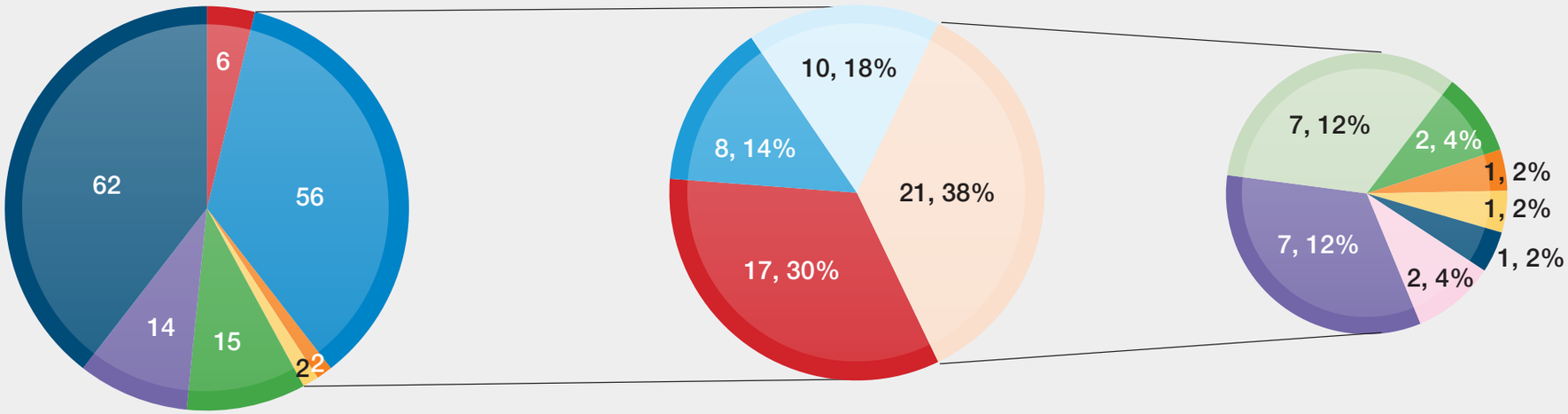
Of the 7 incidents classed as 'miscellaneous', 3 resulted in IBCT-SRNM errors, 3 delayed transfusions and 1 IBCT-WCT

Figure 14.3: SHOT near miss laboratory errors showing at which stage in the transfusion process the primary error occurred with outcome (n=220)



IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 14.4: Laboratory testing errors by reporting category (n=157) and SRNM testing errors by subcategory (n=56)



IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; Ig=immunoglobulin

Figure 14.5: Cell-free fetal DNA prediction errors reported to SHOT 2019-2022

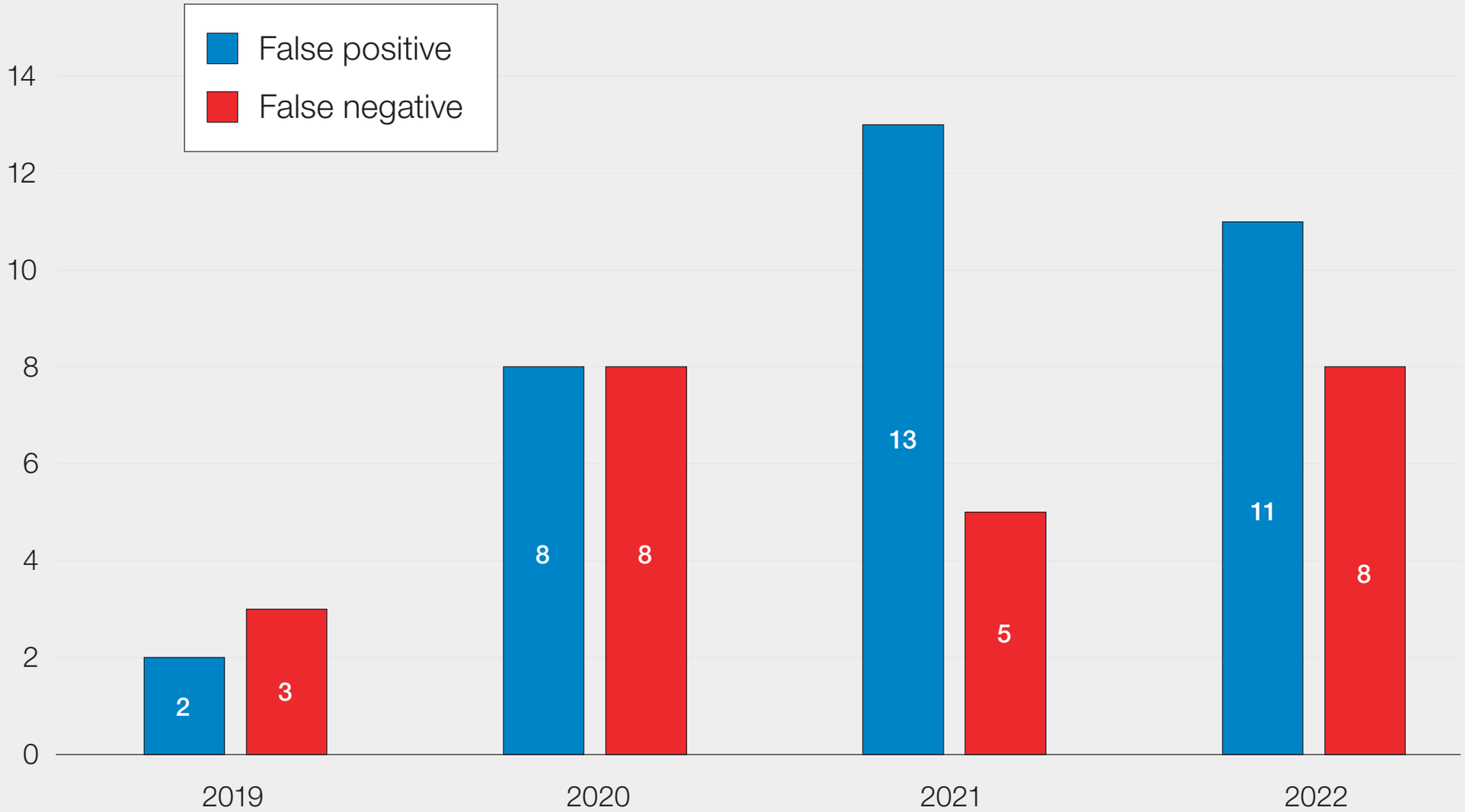


Figure 14.6: Summary of issues contributing to laboratory errors



BMS=biomedical scientist

Figure 14.1: Laboratory errors (events and NM) related to the 10 steps

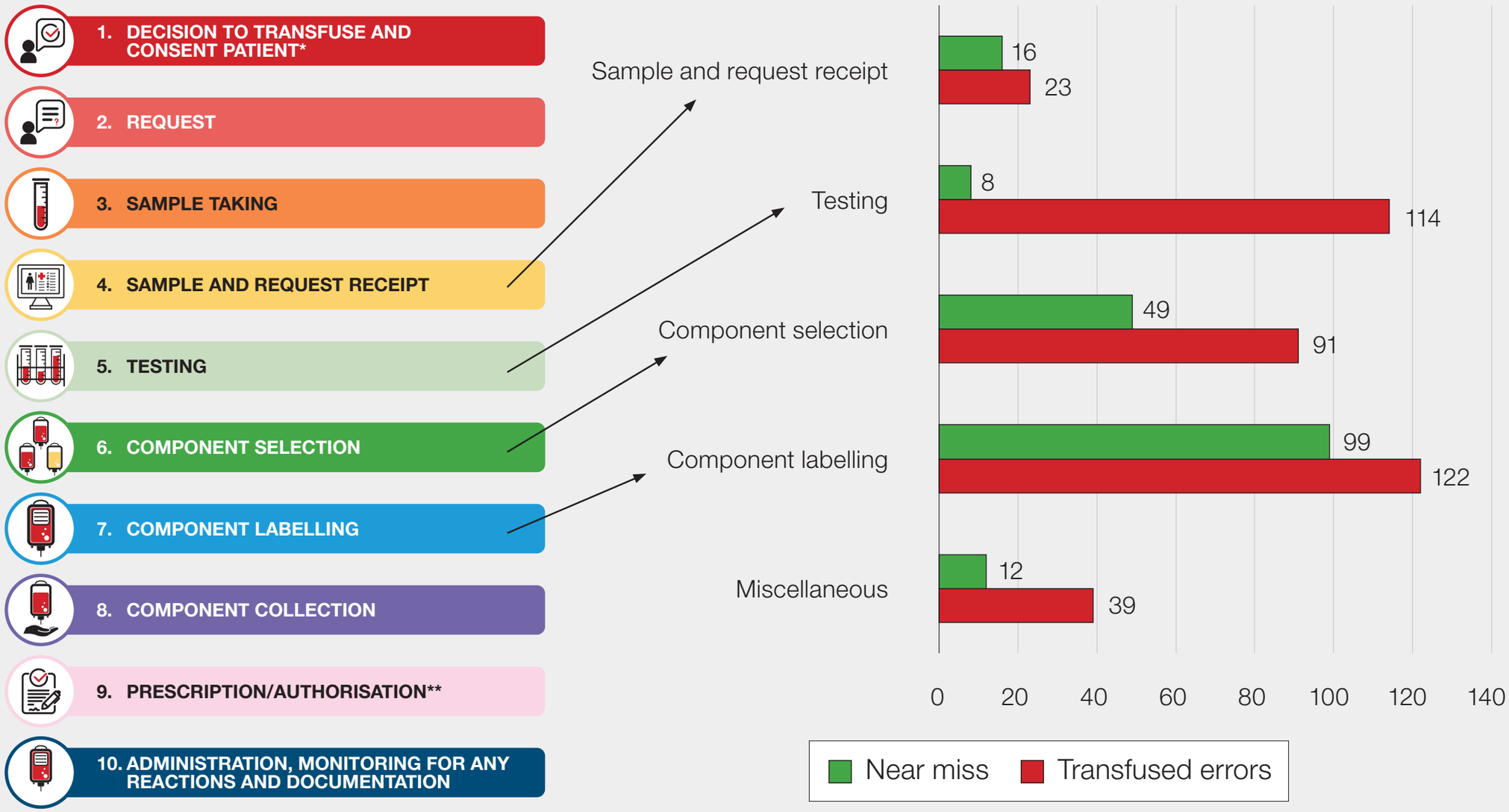


Figure 14.2: Laboratory errors 2017–2021 categorised by step where the error occurred

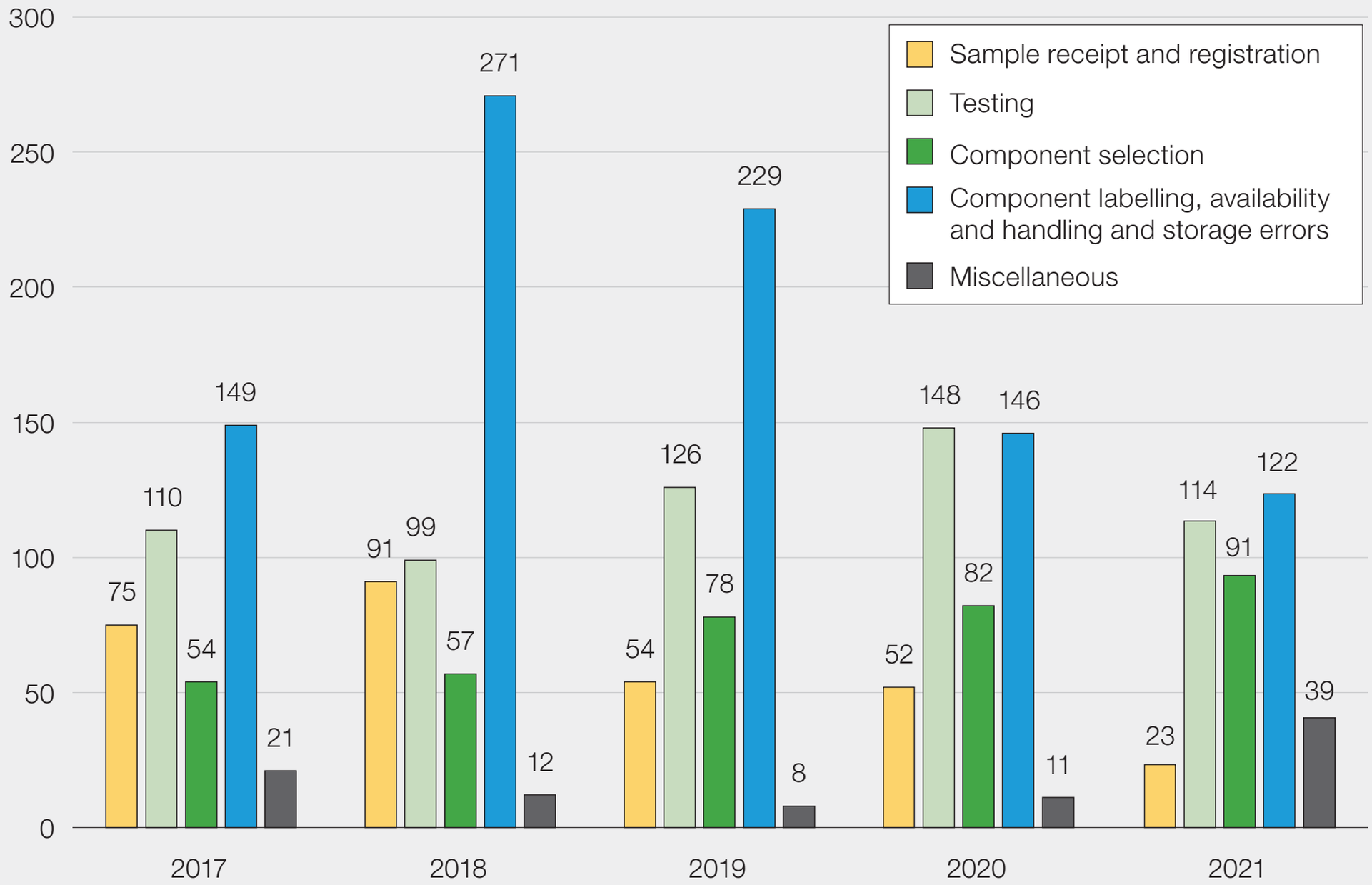
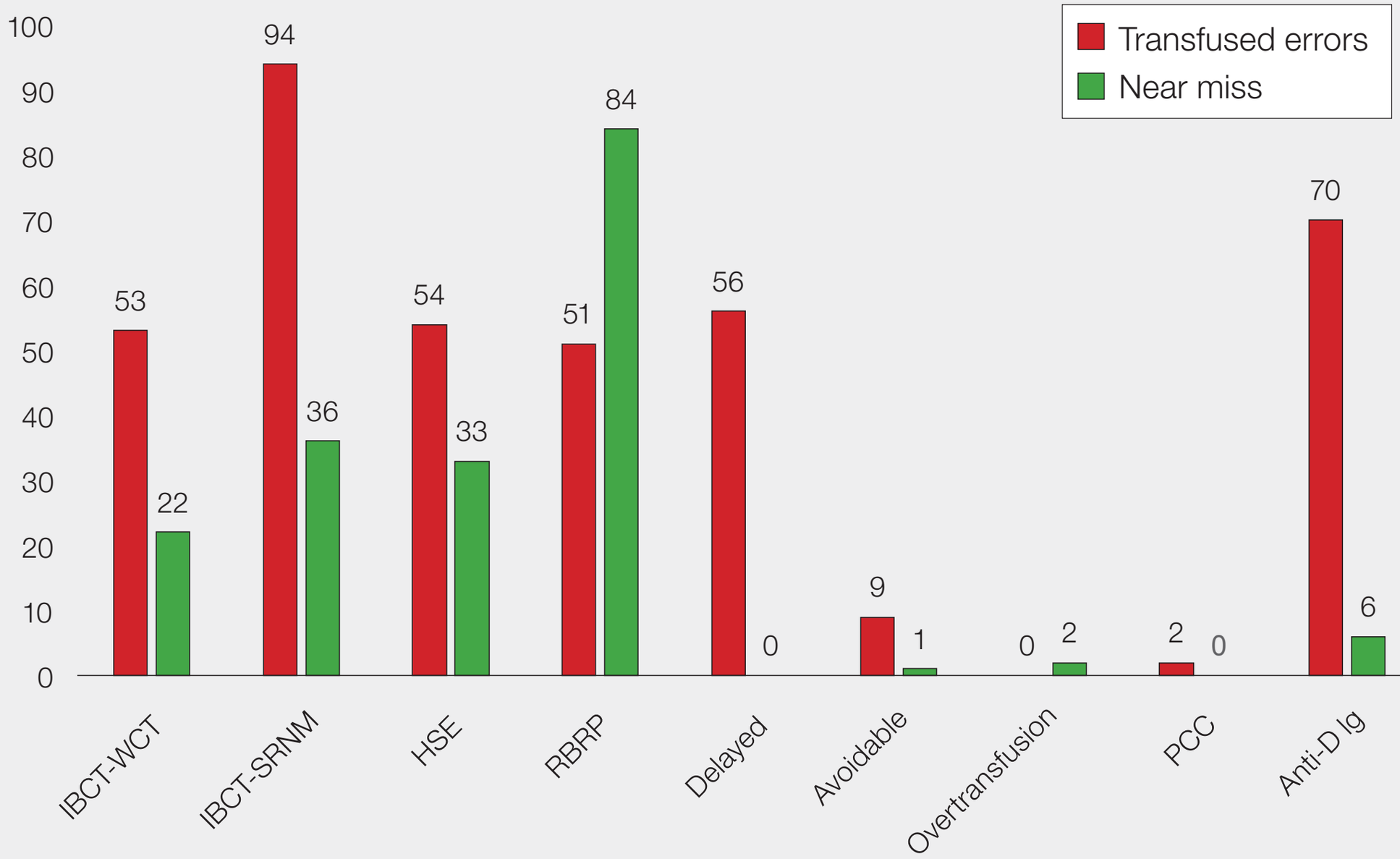
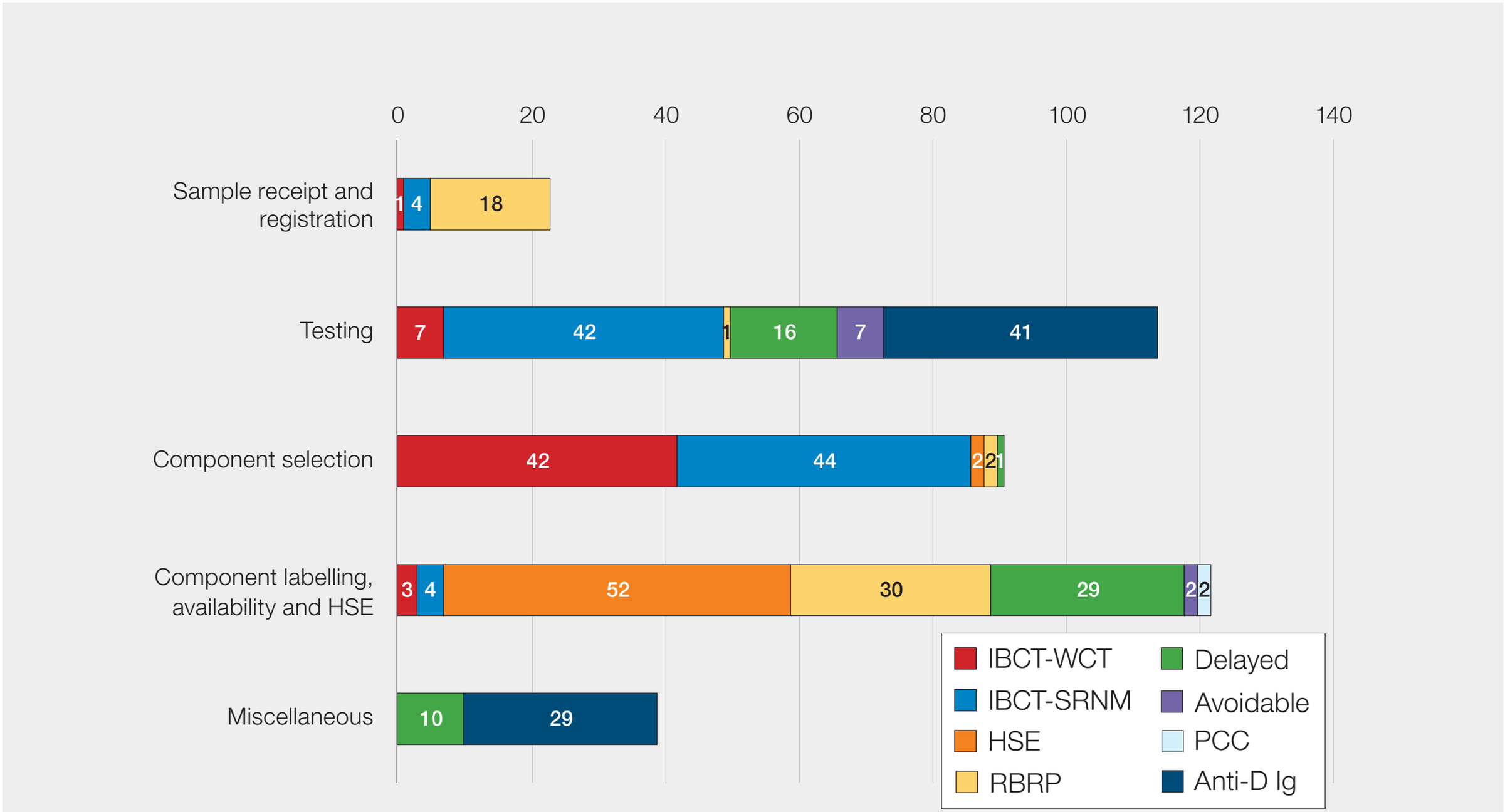


Figure 14.3: Laboratory incidents and near misses by category of outcome (n=573)



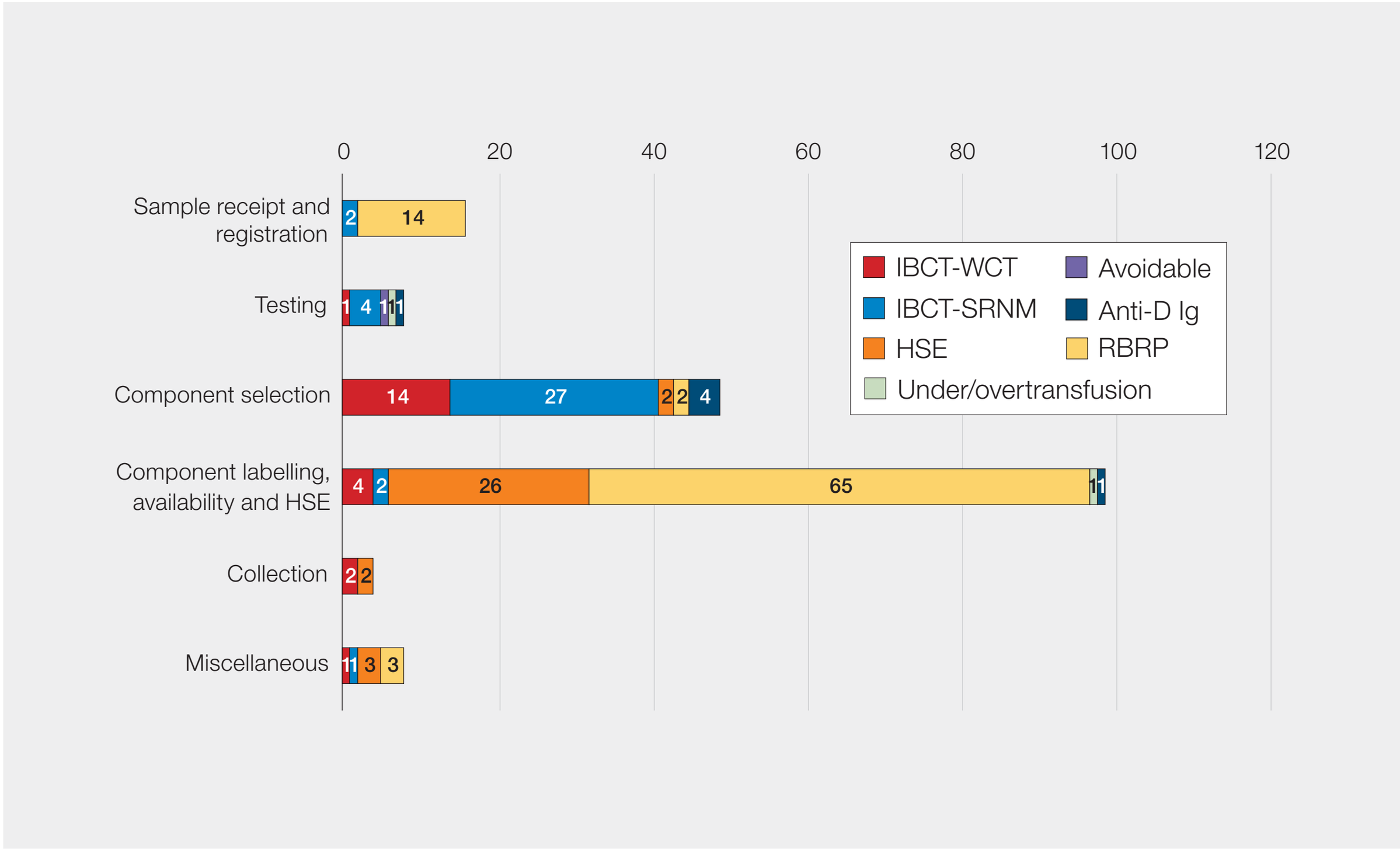
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 14.4: SHOT laboratory data showing at which stage in the transfusion process the primary error occurred (n=389)–



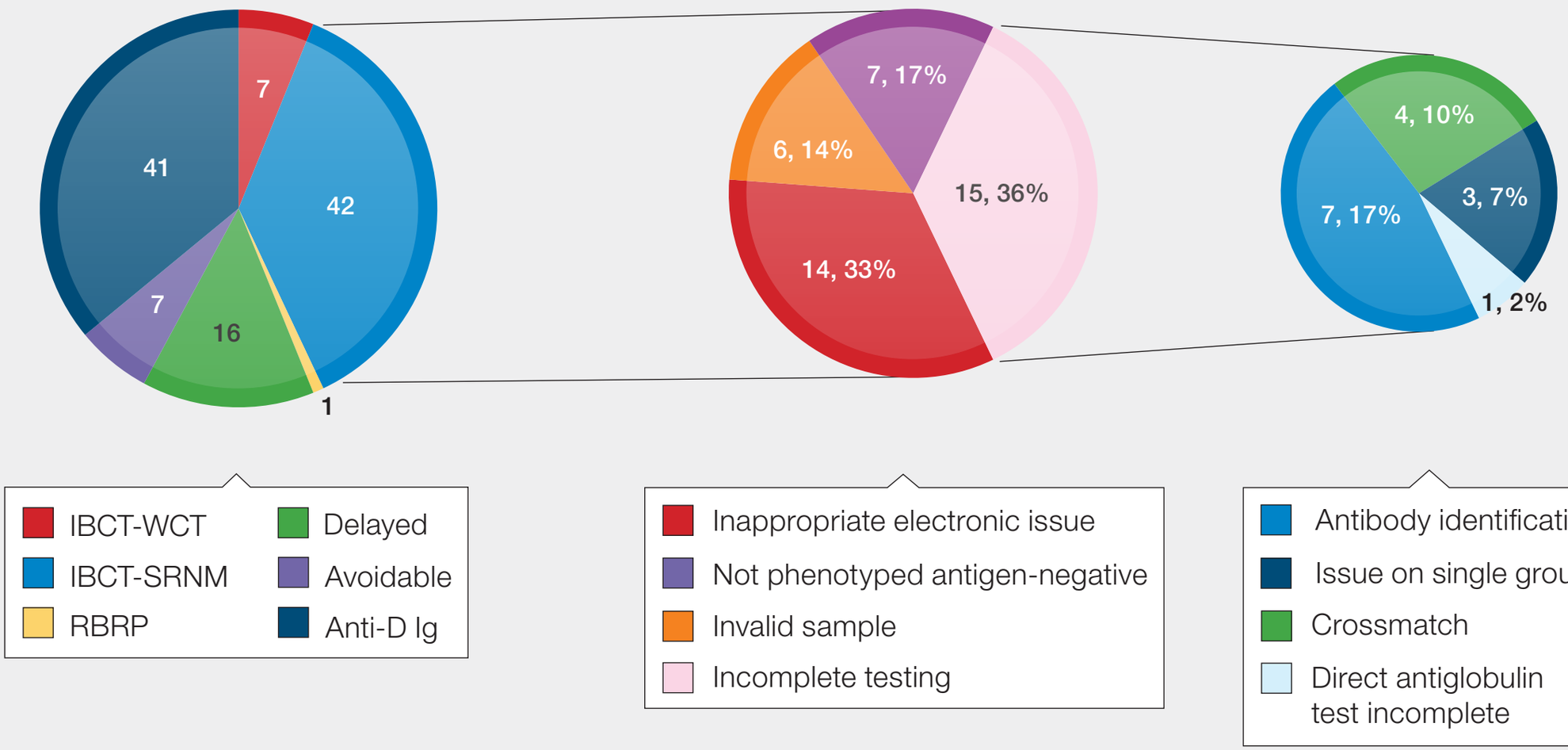
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; Ig=immunoglobulin

Figure 14.5: SHOT near miss laboratory errors showing at which stage in the transfusion process the primary error occurred with outcome n=184



IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 14.6: Laboratory testing errors by reporting category (n=114) and SRNM testing errors by subcategory (n=42)



IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; RBRP=right blood right patient; Ig=immunoglobulin

PAUSE:



P

PATIENT IDENTIFICATION

Are all the details correct and match on sample/form/label/LIMS?

A

AUTHORISED

Have all required tests been completed and authorised,
including antibody investigation?

U

UNIT NUMBER

Does the unit number match the compatibility label?

S

SELECTION OF COMPONENT

Is it as requested? Is it ABO AND D compatible?
Does it meet all specific requirements?

E

EXPIRY

Will the unit expire before required date/time?
Will sample expire before required date/time?

Figure 15.1: Laboratory errors 2016-2020 categorised by step where the error occurred

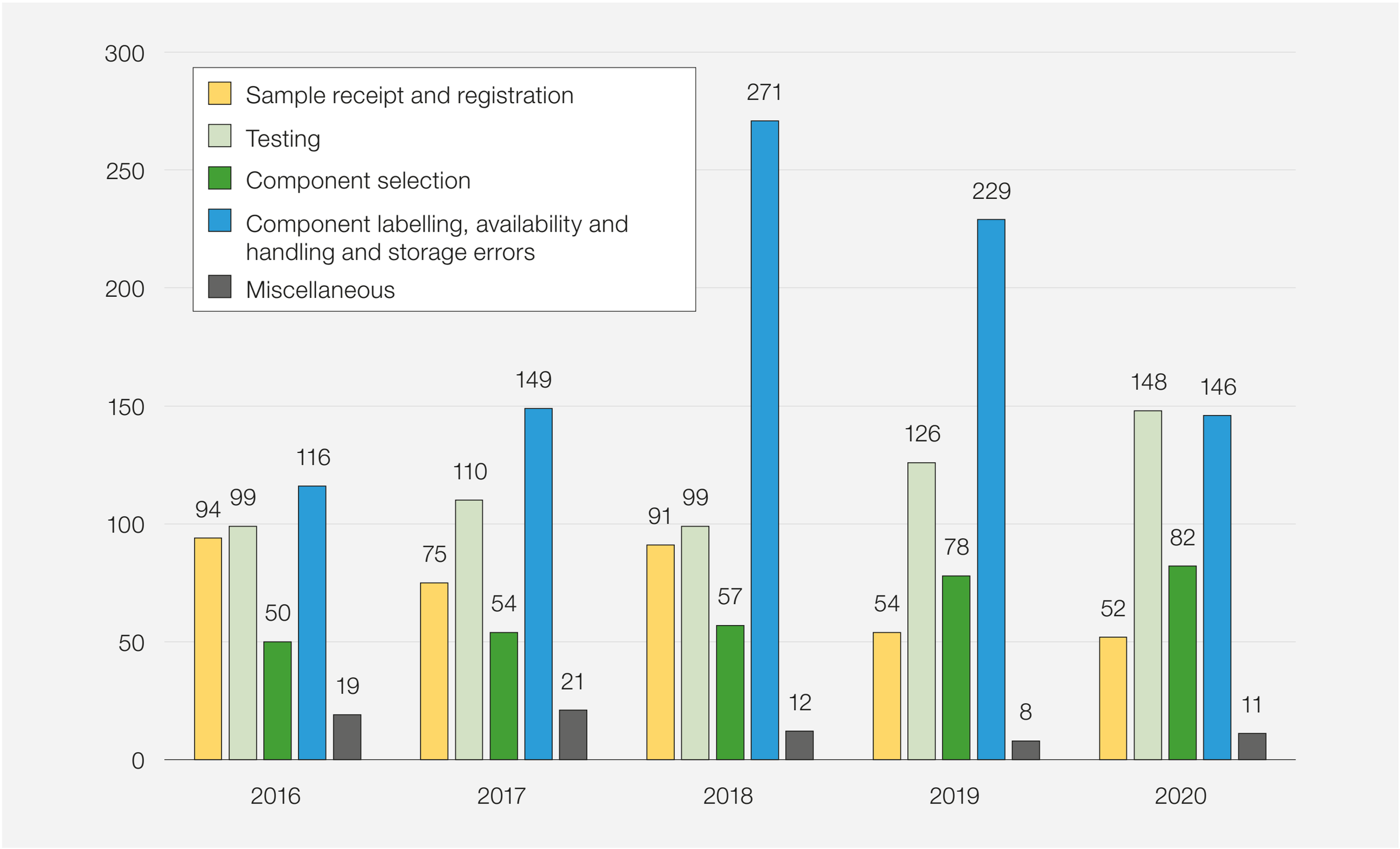
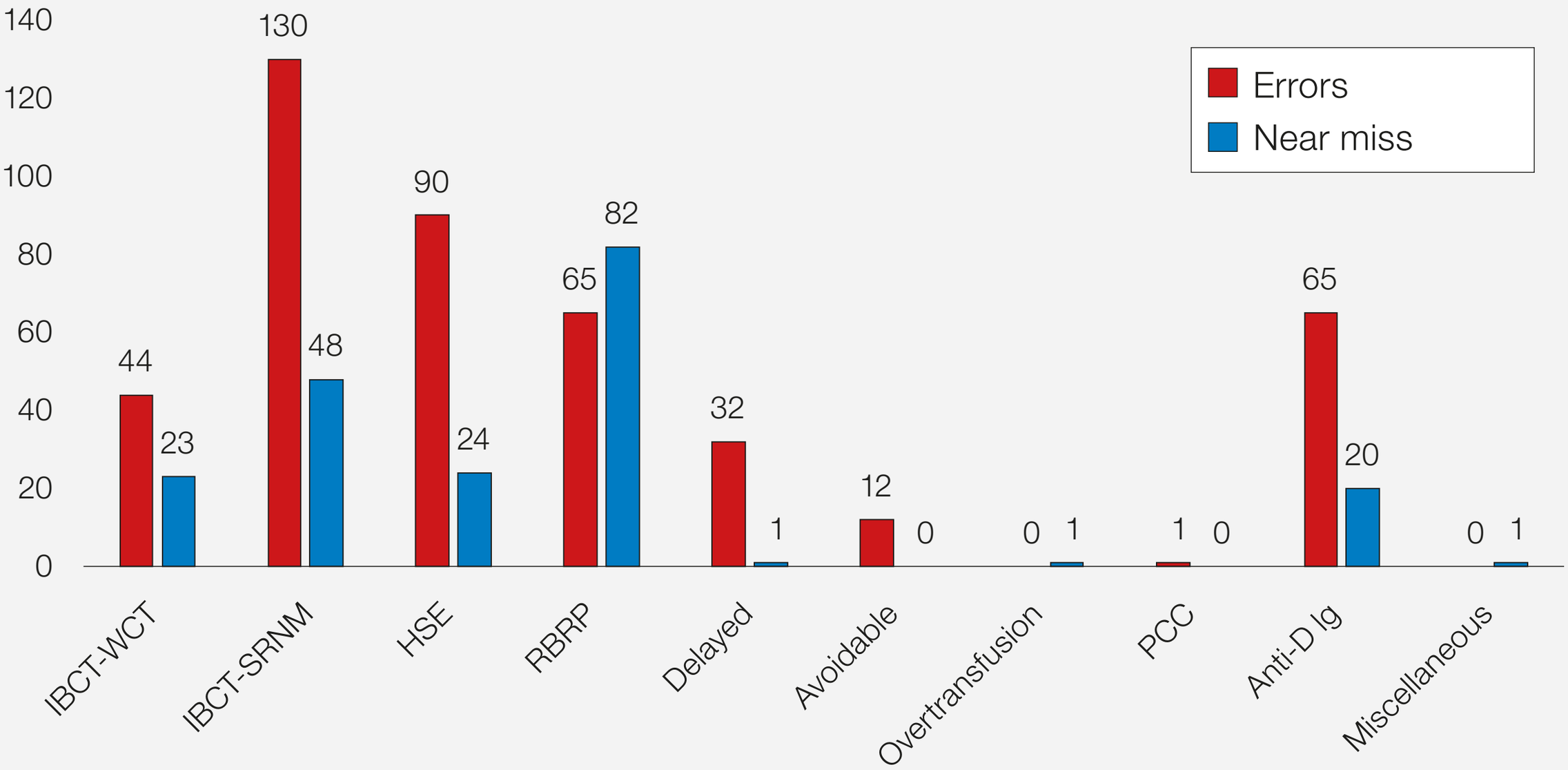
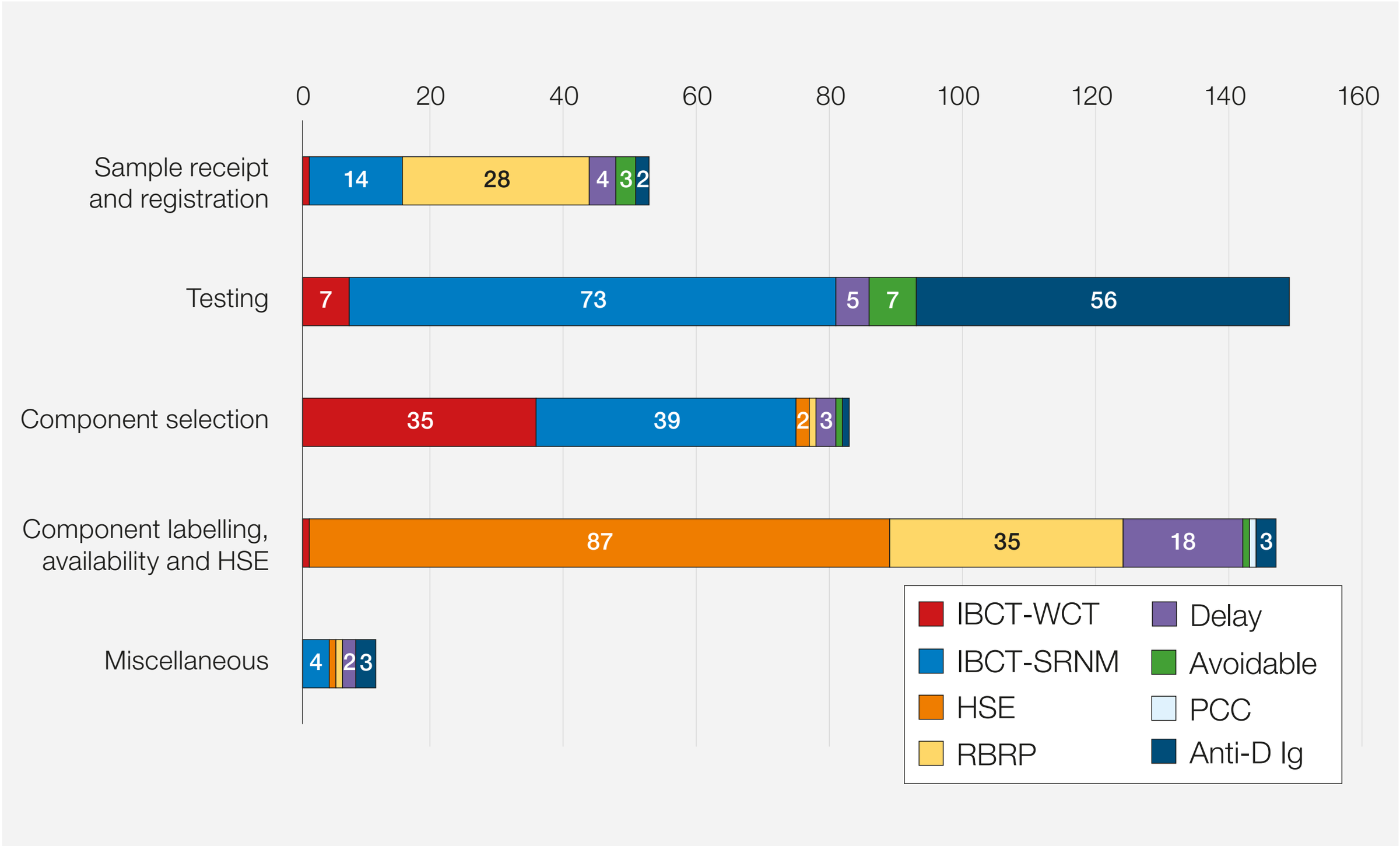


Figure 15.2: Laboratory incidents and near misses by category of outcome (n=639)



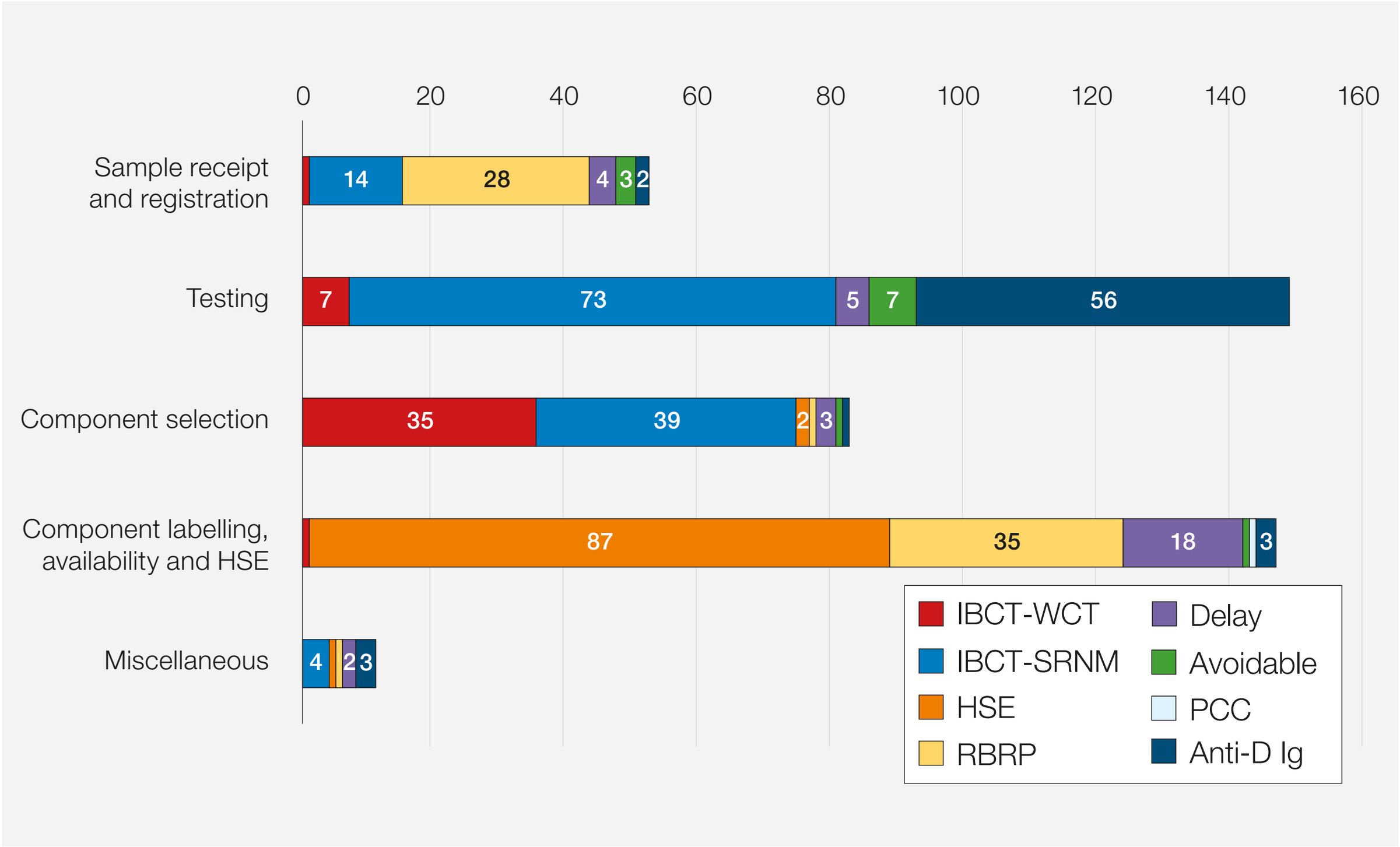
IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 15.3: SHOT laboratory data showing at which stage in the transfusion process the primary error occurred (n=439)



IBCT-WCT=incorrect blood component transfused-wrong component transfused; IBCT-SRNM=IBCT-specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin

Figure 15.4: SHOT near miss laboratory errors showing at which stage in the transfusion process the primary error occurred with outcome (n=200)



IBCT=incorrect blood component transfused; WCT=wrong component transfused; SRNM=specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; Ig=immunoglobulin

Figure 15.5: IBCT-SRNM laboratory testing errors separated by error subcategory (n=73)

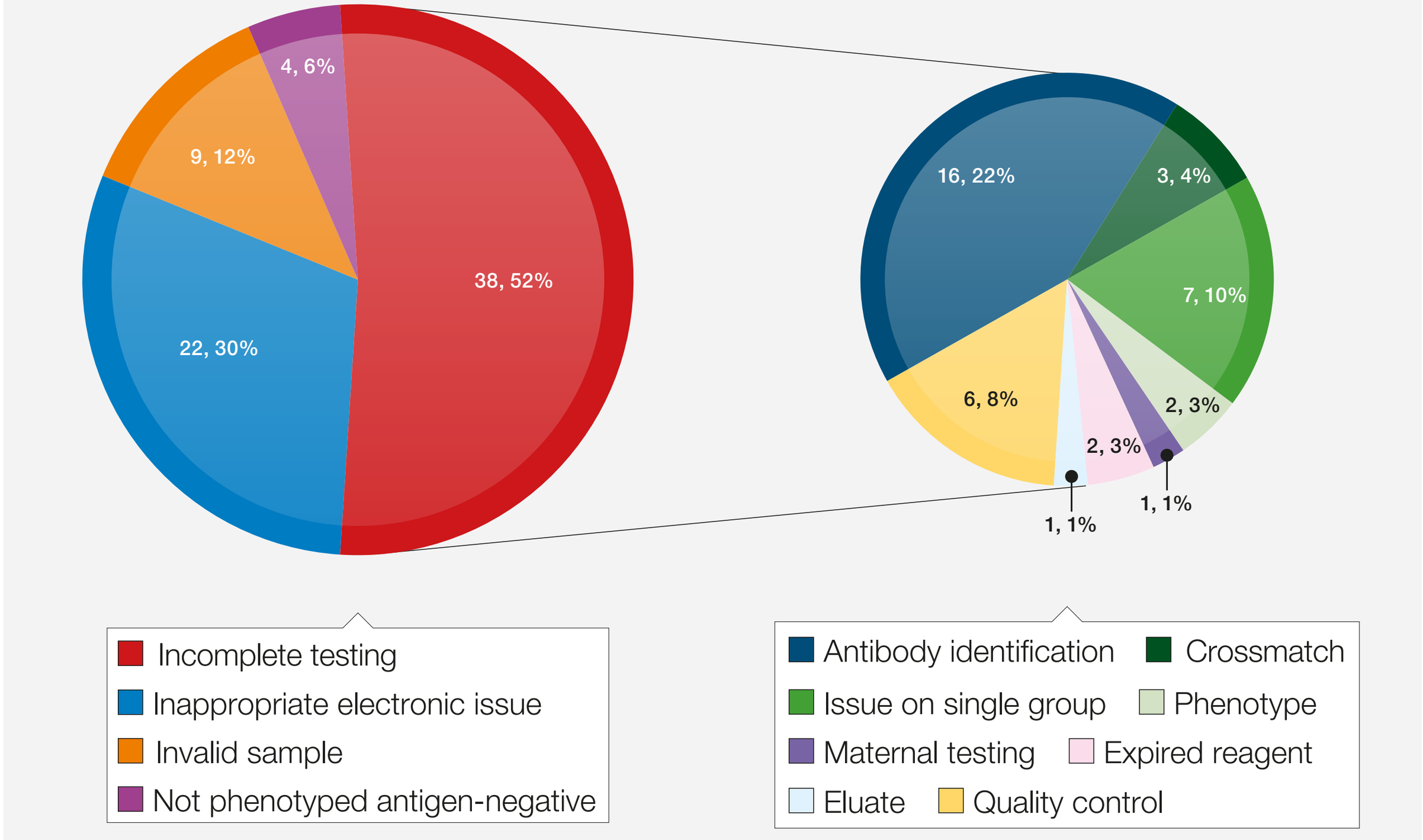


Figure 14.1: Laboratory component labelling and exit check

Component check

1

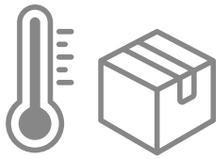
- ☑ Type of component
- ☑ ABO- and D-compatible with patient's blood group
- ☑ Donation number matches component issued on LIMS and on compatibility label
- ☑ Patient demographics on compatibility label identical to request form/LIMS
- ☑ Within expiry period (up to anticipated time of transfusion end)
- ☑ Patient specific requirements met (if applicable)
- ☑ Required phenotype met (if applicable)
- ☑ Component quality (e.g. no leaks, tears or clots)



Storage check

2

- ☑ Storage requirements met
- ☑ Storage equipment within temperature control



Component ready for collection

3

- ☑ Inform clinical area (verbally or electronically)



Figure 14.2: Laboratory incidents and near misses by category of outcome n=796

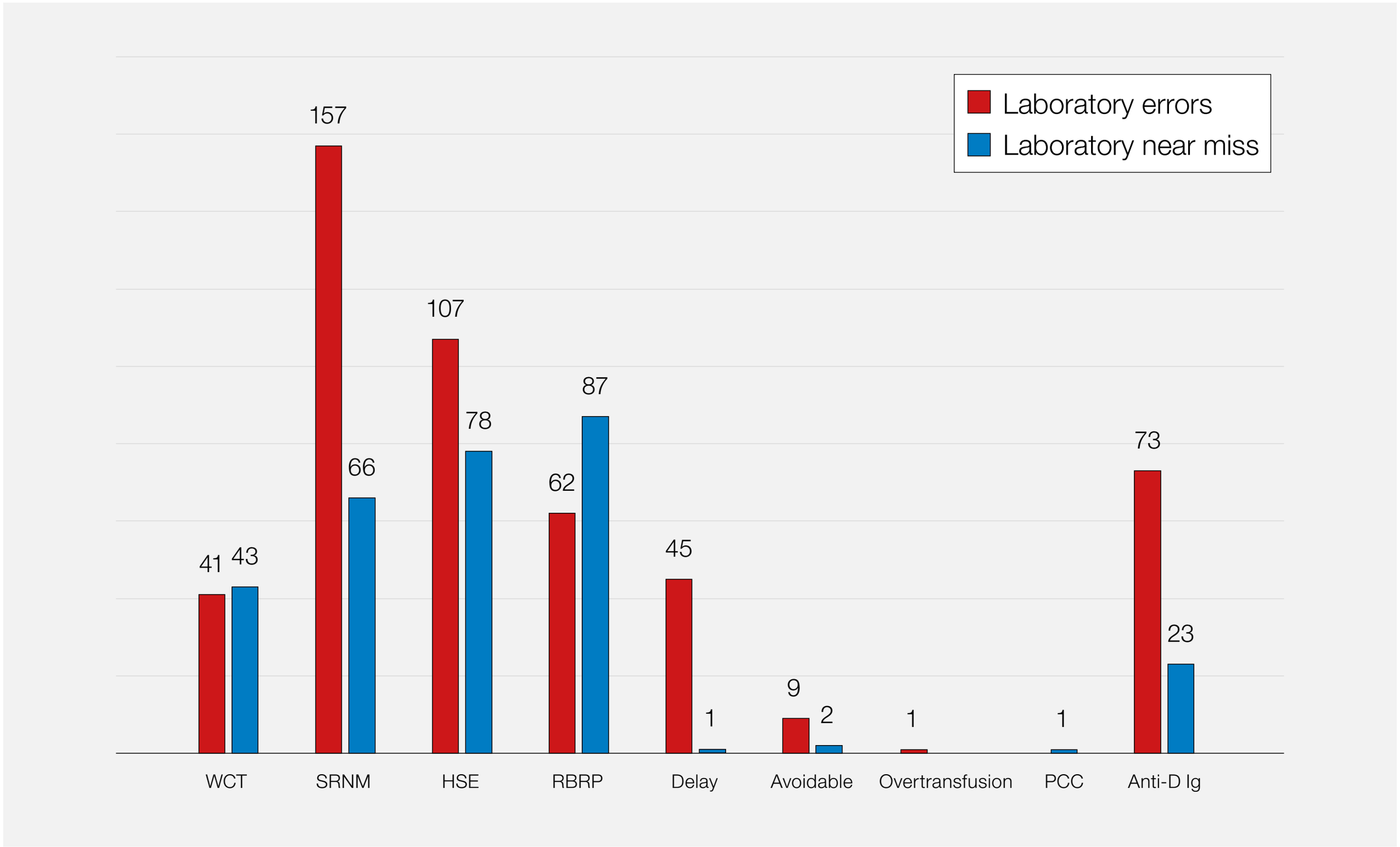
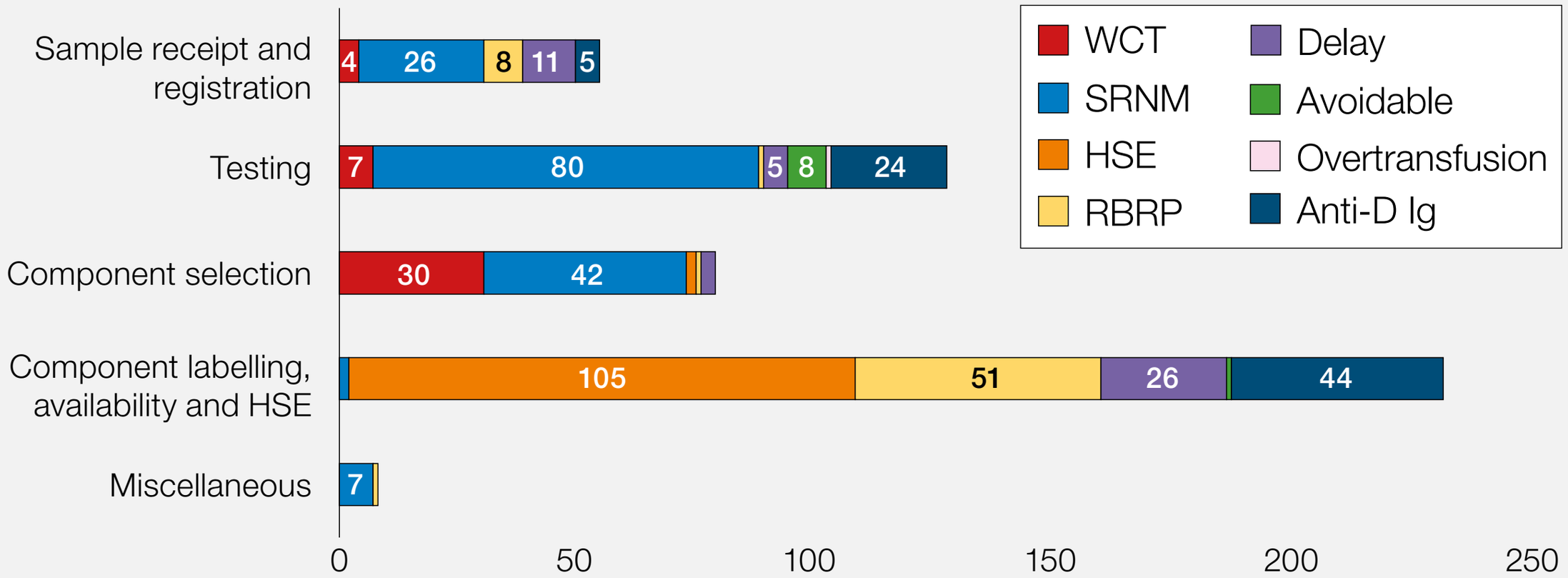


Figure 14.3: SHOT laboratory data showing at which stage in the transfusion process the primary error occurred n=495



WCT=wrong component transfused; SRNM=specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; Ig=immunoglobulin
Numbers <4 are too small to be annotated on the figure: Testing: RBRP=1, overtransfusion=1; Component selection: HSE=2, RBRP=1, Delay=3; Component labelling, availability and HSE: SRNM=2, avoidable=1; Miscellaneous: RBRP=1

Figure 14.4: UPTAKE areas to be covered in a robust competency assessment

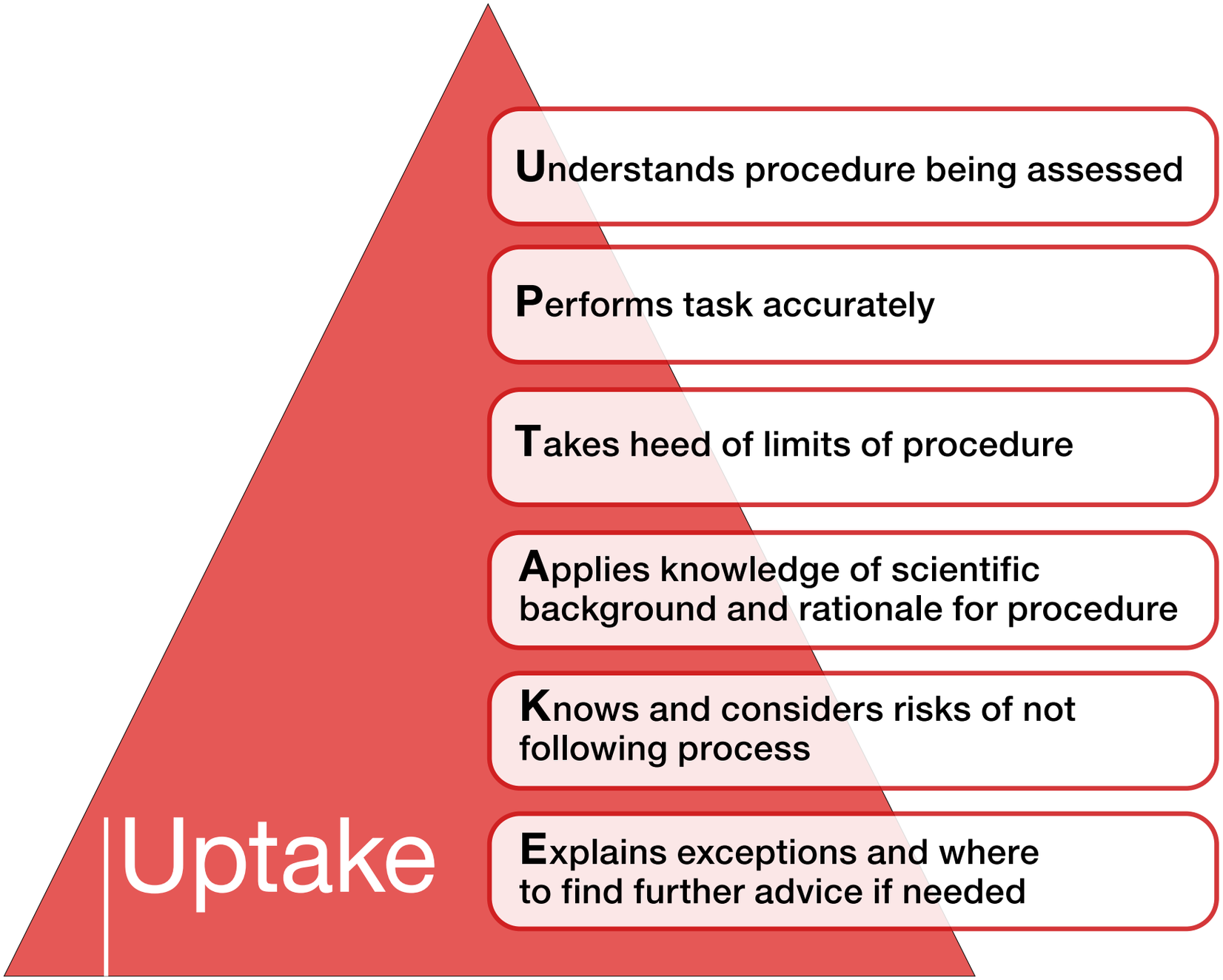
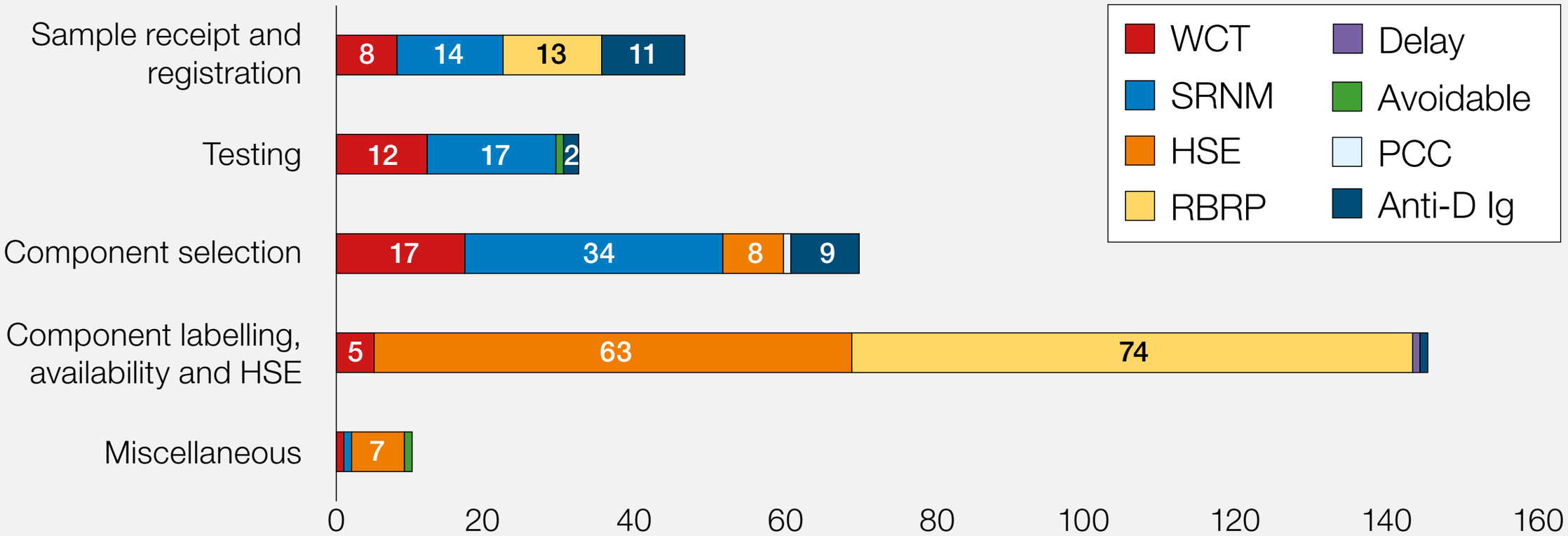


Figure 14.5: SHOT near miss laboratory errors showing at which stage in the transfusion process the primary error occurred with outcome n=301



WCT=wrong component transfused; SRNM=specific requirements not met; HSE=handling and storage errors; RBRP=right blood right patient; PCC=prothrombin complex concentrate; Ig=immunoglobulin
Numbers <2 are too small to be annotated on the figure. All segments with no data label=1