

# RENAL BIOPSY SURVEY IN CHILDREN

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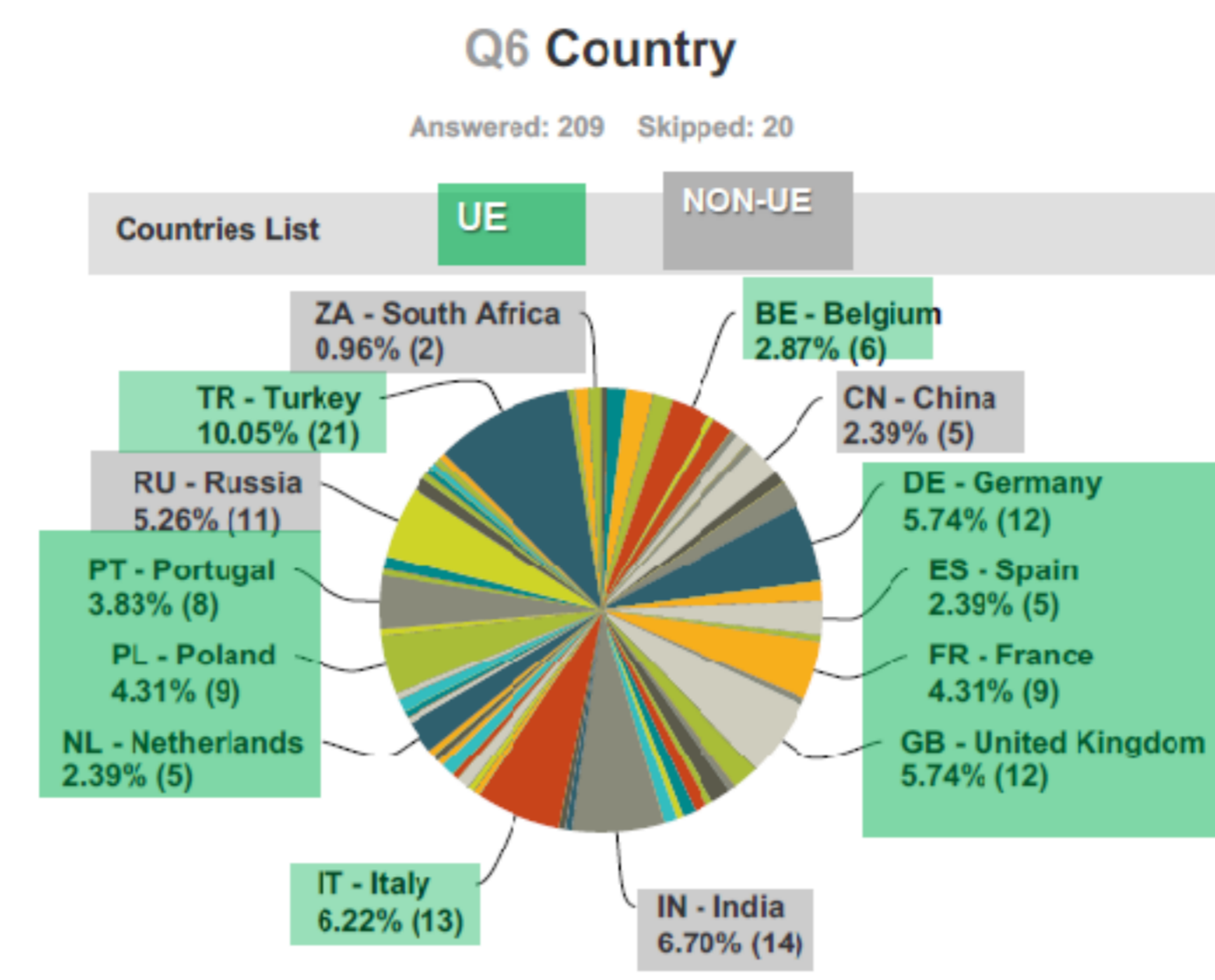
## OBJECTIVES

Renal biopsy (RB) plays a key role in the diagnosis and management of kidney disease. Apart from some national and monocentric reports there is no global guideline on modalities and indications for this diagnostic, prognostic, and relatively safe test.

A questionnaire, including information on the corresponding nephrologist, methods used to perform RB in adults (A) and children (Ch), both on native or grafted kidneys, indications to perform RB both in adults and children and a post-biopsy patient management was sent to the members of the two Societies in March 2014.

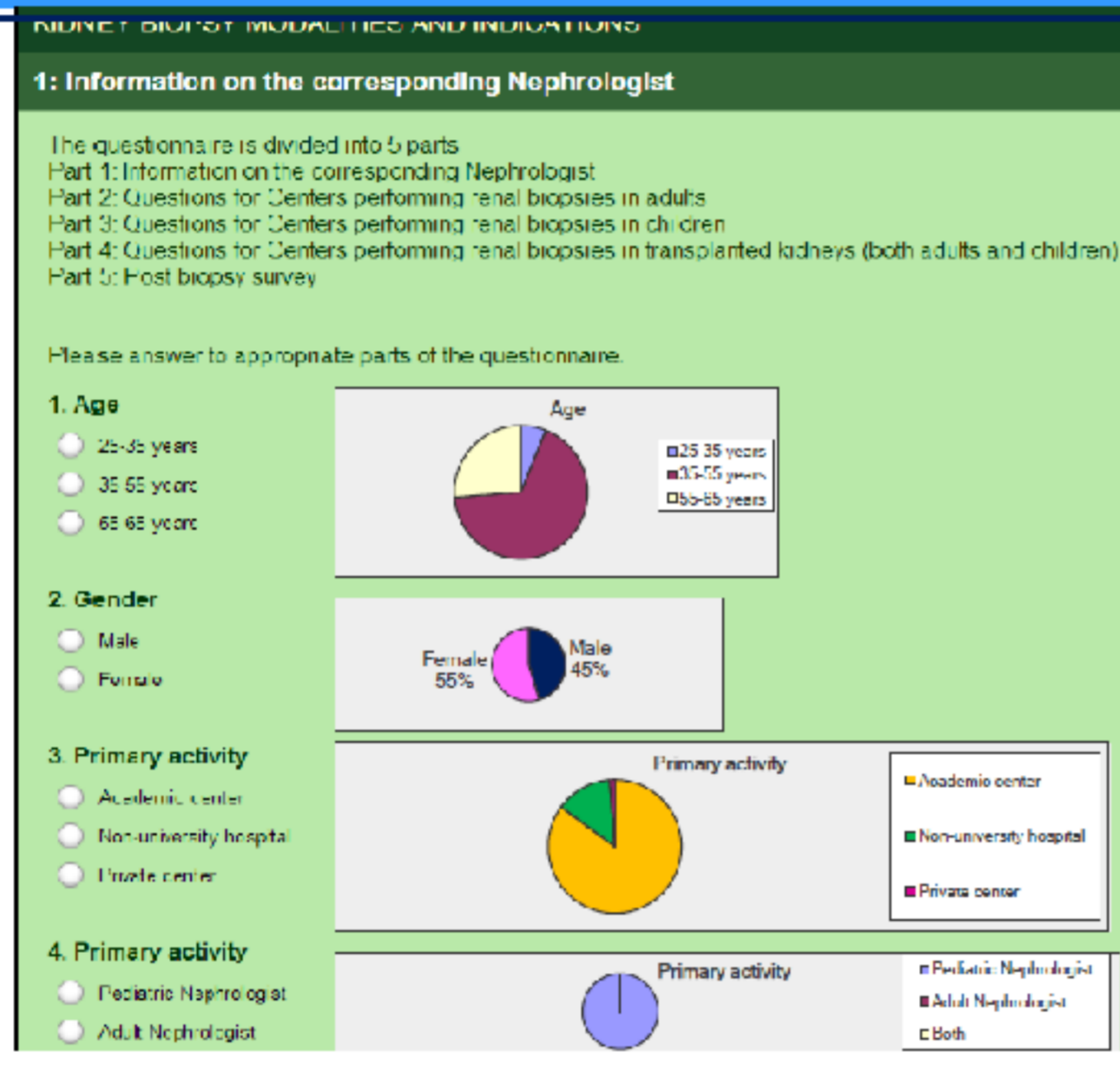
## METHODS

A total of 629 questionnaires from all over Europe and Turkey and from non-EC countries were received. Non-EC country data were not included in this report. Here we report the results obtained from 229 paediatric nephrologists (PN).

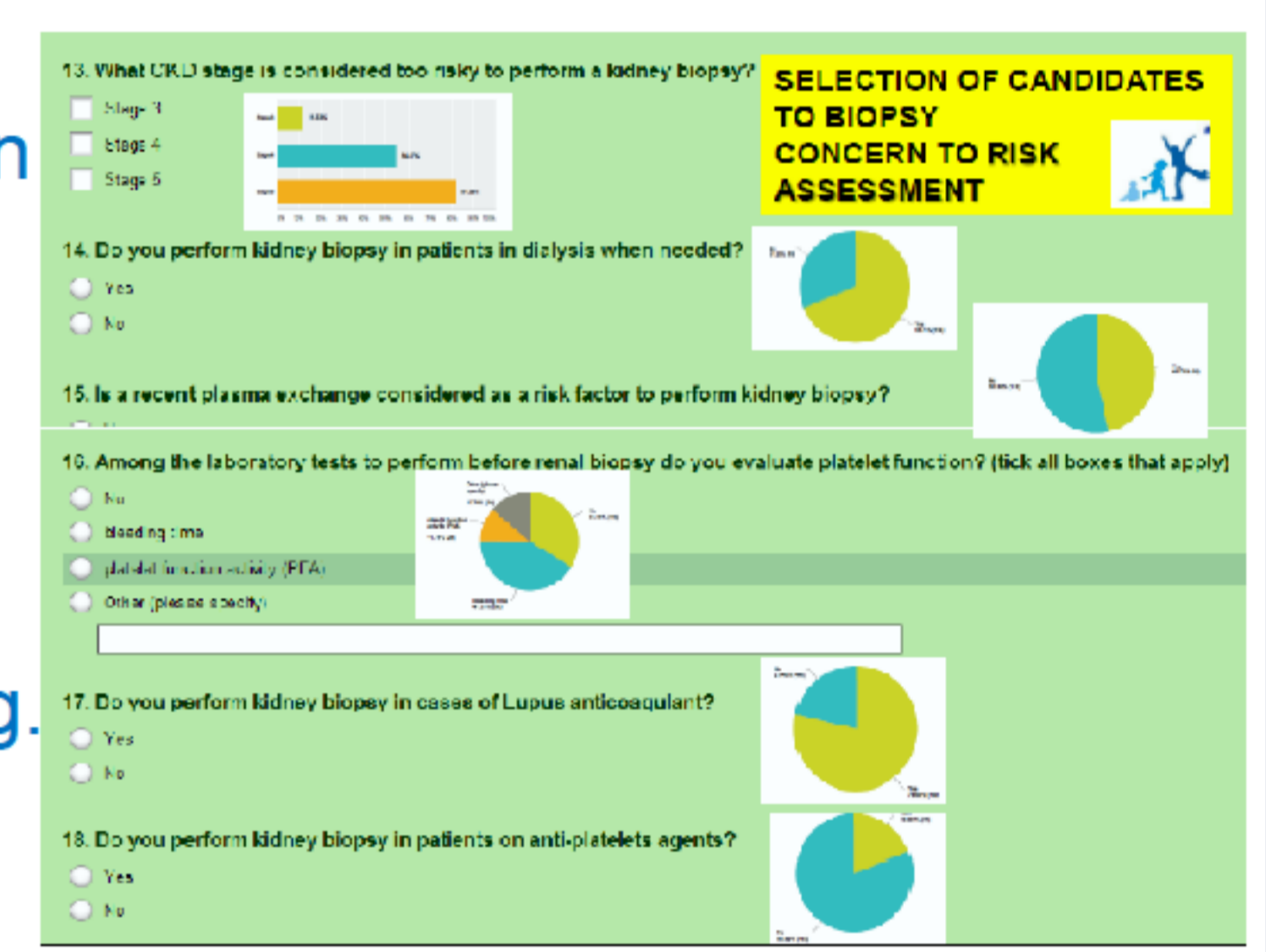


## RESULTS

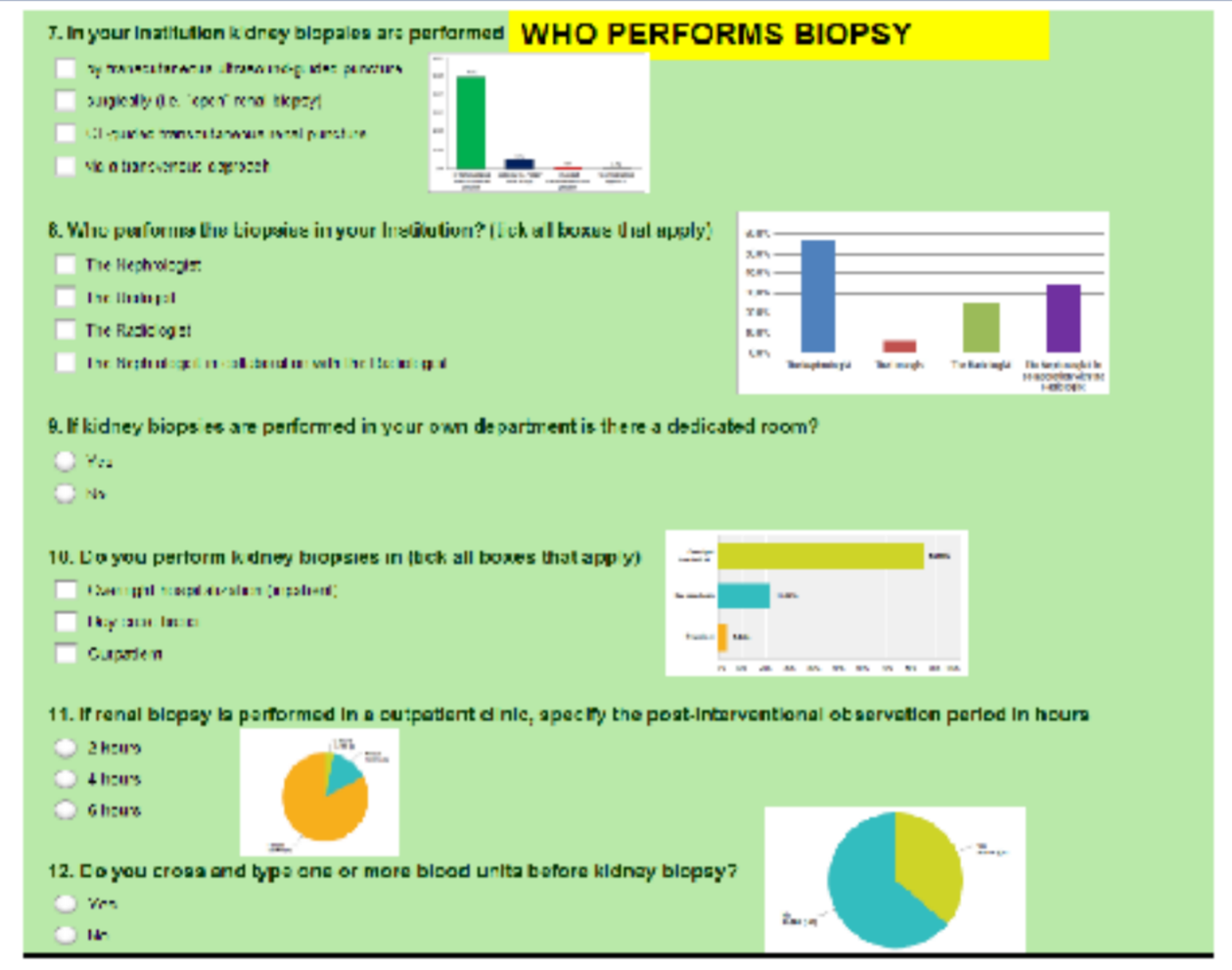
67% are aged between 35-55years, M/F ratio is 0.7, 86% working in academic centers. The number of RB/yr is variable (21% of the centers performed >50 RB/yr, 36% 20-50 RB/yr, 43% less than 20 RB/yr).



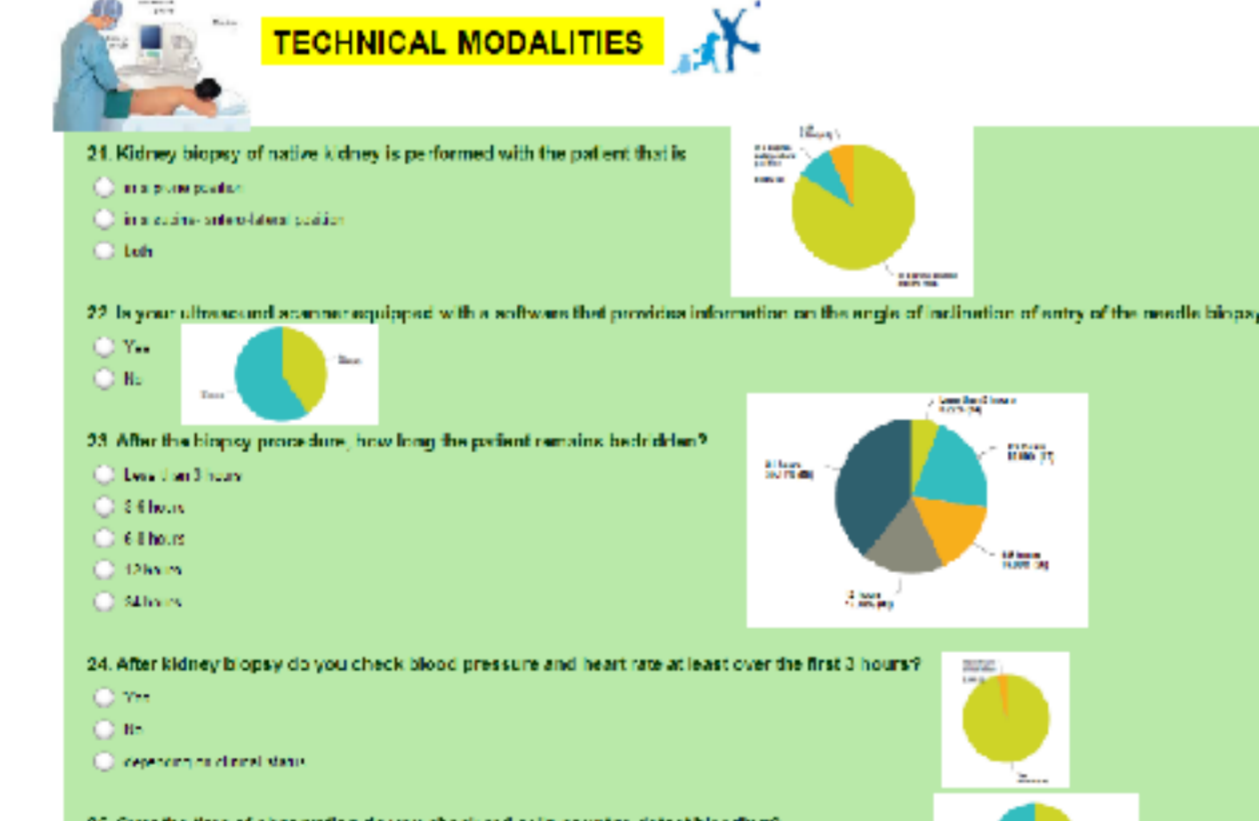
- Stage 5 CKD is considered a high risk condition to perform RB (80.6% of the answers). However, if RB is needed, it is performed even in children undergoing dialysis (63% of answers).
- Plasma exchange is considered as a risk factor for RB by 46% of the nephrologists.
- Platelet function is evaluated by 64% with different modalities (the most frequent is bleeding time).
- Only 20.4% of the PN perform RB in children on anti-platelets agents, the others wait for 2-14 days after drug withdrawal (in 50% of the cases for a mean time of 7 days)
- Desmopressin is used by 15% of Nephrologists to reduce the risk of bleeding.



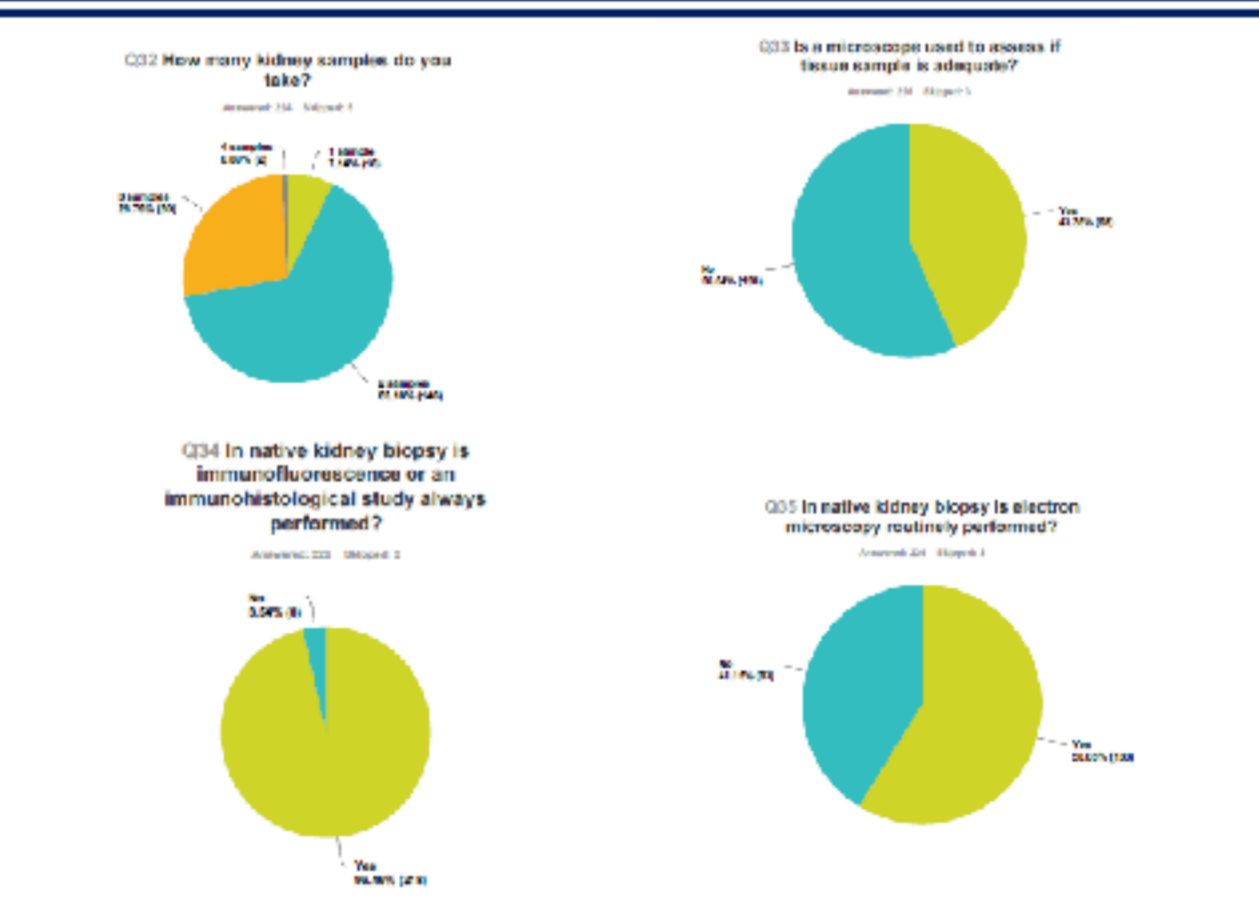
The most common modality of RB is transcutaneous ultrasound-guided puncture, only 8.7% perform RB surgically (all in infants). RB is performed in most cases by PN, in 26% of by the radiologist, and in 30.4% by PN helped by the radiologist. Of note, in 7.2% RB is performed by the urologist.



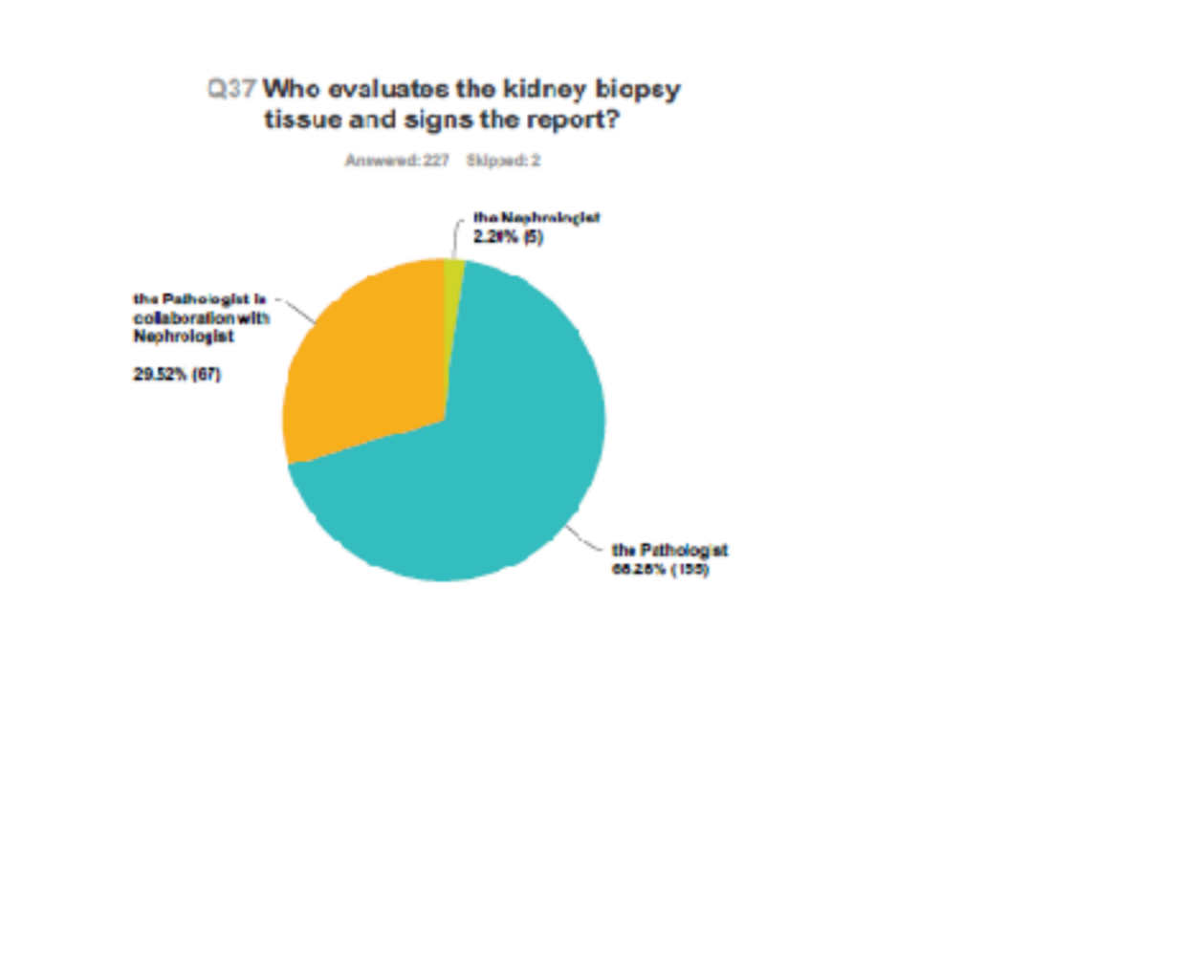
RB is performed in 80% of children in a prone position by using a 16 gauge needle (73%) mostly automatic (64%). The ultrasound scanner is provided in 40% of the cases with a software that provides information on the angle of needle entry.



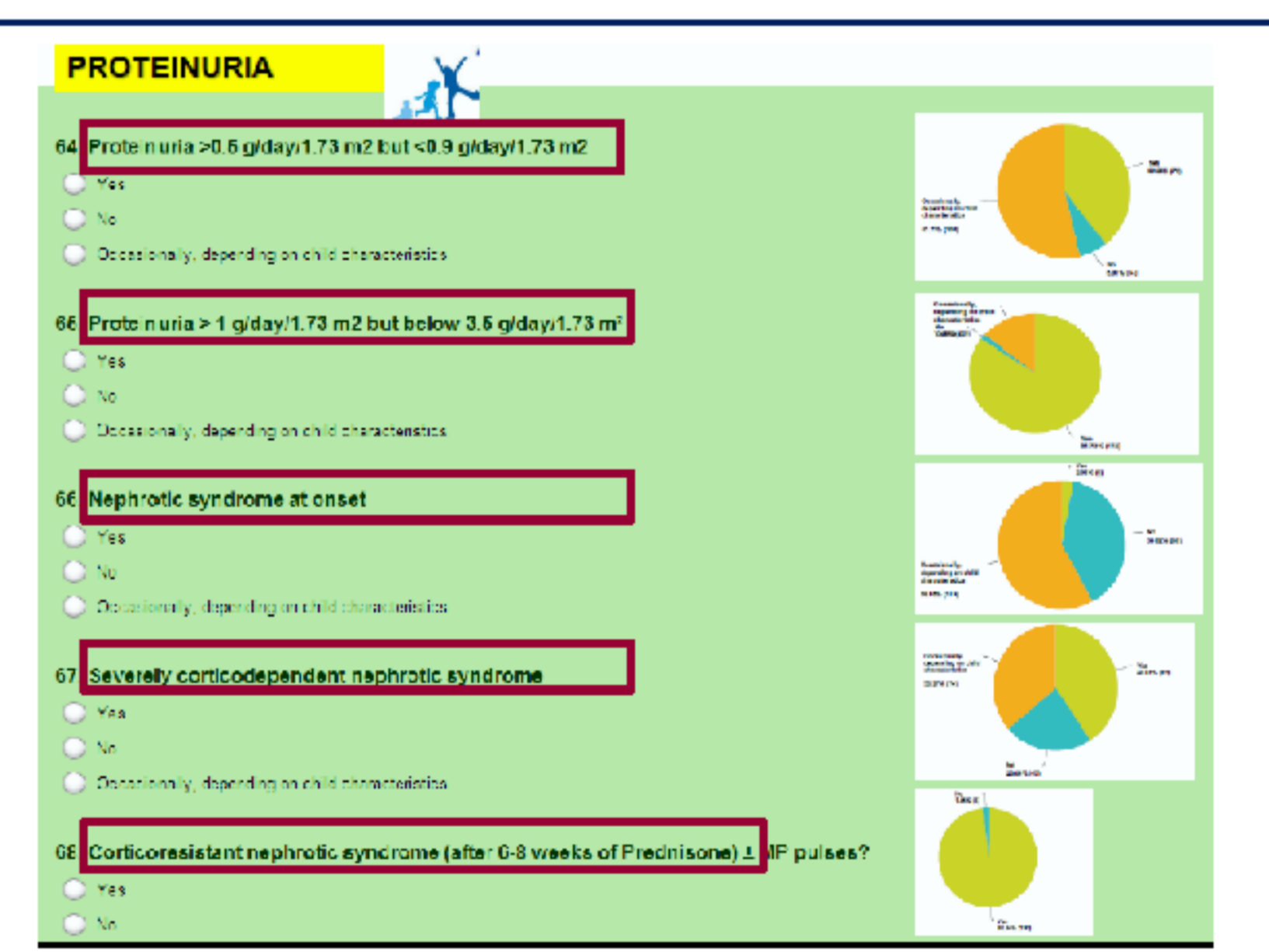
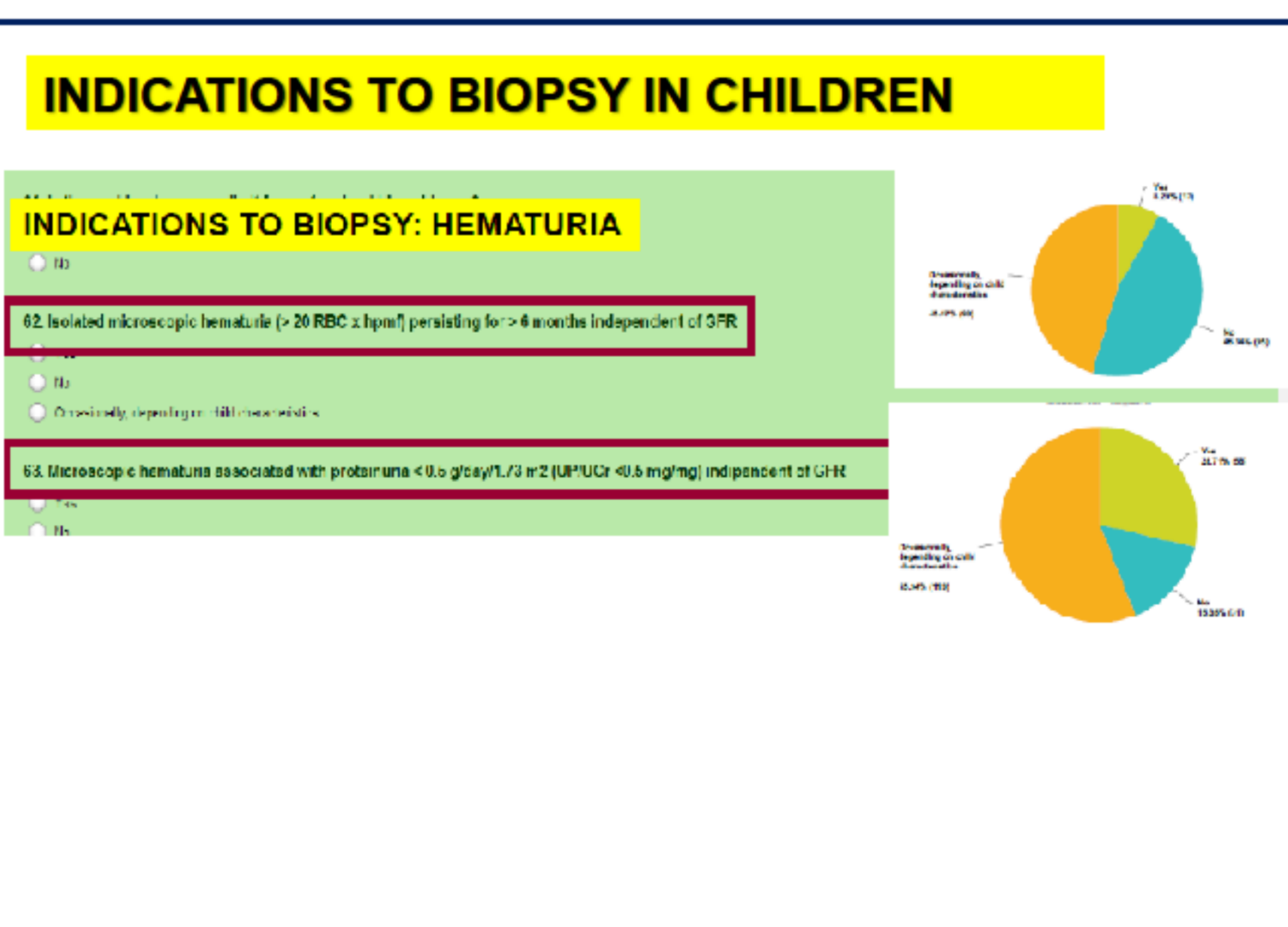
Two samples are taken in 69% of the cases and in 60% immediately checked under microscope to assess the quality of the tissue sample. While IF study is performed in almost all centers, electron microscopy is routinely used only in 62% often in referral centers.



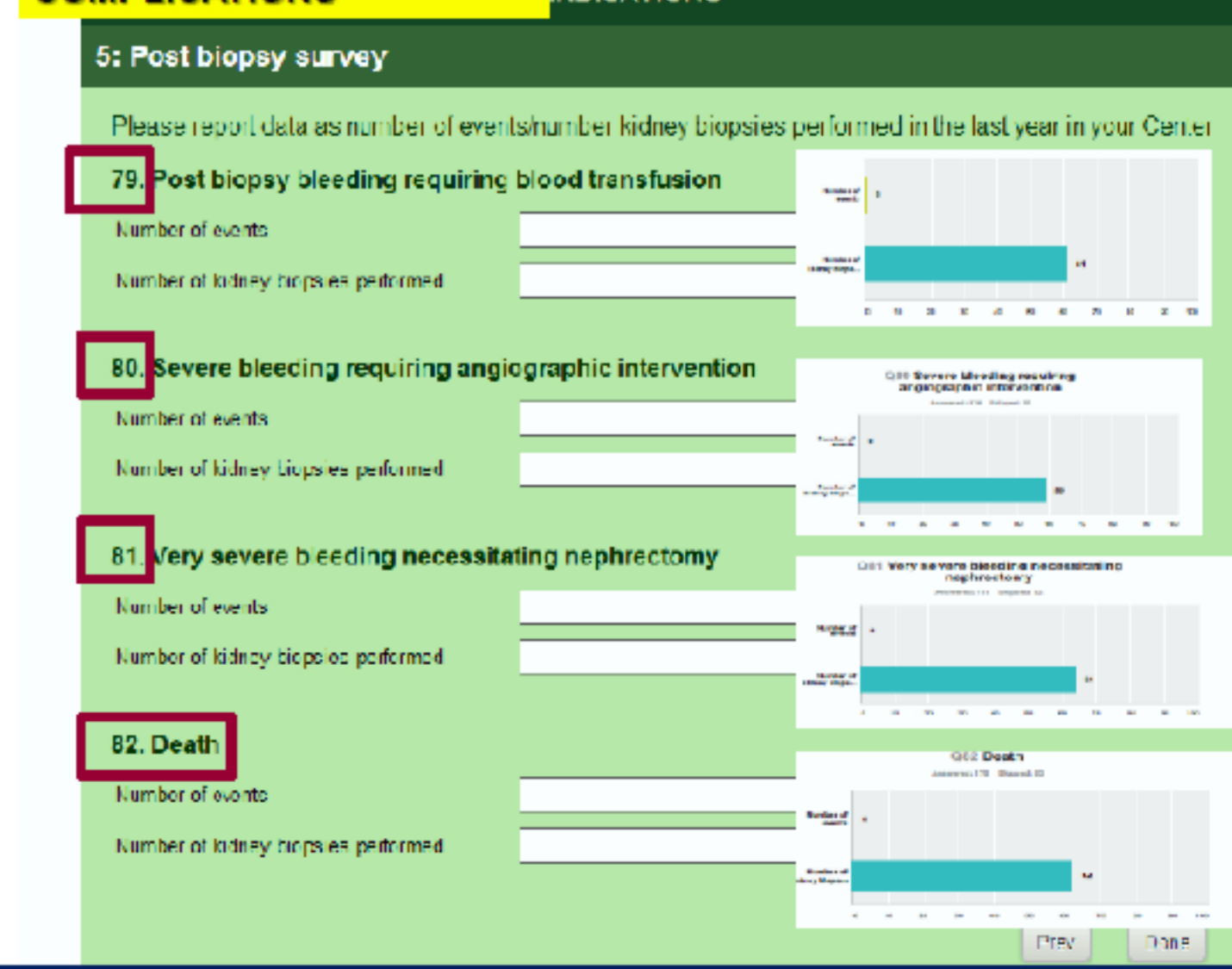
The evaluation of kidney tissue sample is performed in 65% of the cases by the pathologist, in 33% by the PN in collaboration with the pathologist. In 85% of the cases RB is performed in overnight hospitalized children. The others discharge the children after at least 6 hours of observation.



- The children remain bedridden for 24 hours in almost 40% of the cases and blood pressure and heart rate is checked over the first 3 hours in almost all.
- A red blood cell count is performed by 58% of the PN with a different timing (from 2 to 24 hours).
- In 69% of biopsied children an ultrasound scan is performed 12-14 hours after the manoeuvre to check for bleeding. In 20% an ultrasound scan/doppler check is performed after 6 months to assess the presence of artero-venous fistula.



Significant bleeding complications requiring angiographic intervention were reported very rarely however nephrectomy was performed in exceptional cases



## CONCLUSIONS

This is the largest survey on renal biopsy procedure in children and the results will be useful for preparing a position paper from European experts.