LABQUALITY

External Quality Assessment Scheme

Clinical cytology: Non-gynaecological cytology Round 1, 2022

Specimens
Please find enclosed 6 specimens as cases with virtual microscopy images.

Background information
In the multiple- layered scans, cells and other structures are in focus at different layers. The diagnostic features are visible in the still pictures. There are cases of which patient's age, sex and some data of clinical history are given. Samples are ethanol fixed and Papanicolaou stained cytocentrifuge (CCF) or May-Grünwald-Giemsa-stained smear or imprint preparations of cytological material from a university hospital pathology also serving community health care centers and regional hospitals. With virtual microscope images, please use the focus bar if necessary (in the low right corner).

Parameters
Please see page 2.

Result reporting
Please enter the results and methods via LabScala (www.labscala.com). Please use Mozilla Firefox or Google Chrome as a web browser when using LabScala. Do not use Internet Explorer. If you have problems viewing the slides and you see the Aiforia logo only but no slides, please ask your IT department to allow access to webpage http://cloud.aiforia.com.

Cases
S001: LQ779622011
84-year-old male with prostate hyperplasia presented with macroscopic hematuriaa. Voided urine sample. Papanicolaou stained cytospin sample.

The Paris System for Reporting Urinary Cytology Classification

S002: LQ779622012
50-year-old male with subcutaneous lesion in left cheek. Lymphoma diagnosed in past. Clinically atheroma. FNA is taken. On FNA procedure seems very firm. Is it malignant? Papanicolaou stained cytospin sample.

Papanicolaou class

S003: LQ779622013
74-year-old male presented with right sided pleural effusion of approx. volume of one litre. Effusion liquid was darkish yellow. Aspirated liquid was sent for cytological evaluation. Papanicolaou stained cytospin sample and MGG stained air-dried smear.

The International System for Serous Fluid Cytopathology (TIS)

S004: LQ779622014
56-year-old male with hypertension and type 2 diabetes and 41-smoking-year history. Both sided neck nodules were researched. Both parotid glands presented with cystic lesions. Previous FNA was insufficient. New FNA was taken from left parotid gland. Papanicolaou stained cytospin sample.

The Milan Salivary Gland Cytology Classification

2022-10-04

INSTRUCTIONS

Product no. 6702
LQ779622011-016/FI

Subcontracting: Digital image services

The results should be reported no later than **October 25, 2022**.

Inquiries
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FINAS
Finnish Accreditation Service
PT02 (EN ISO/IEC 17043)

Quality Management
ISO 9001:2015

S005: LQ779622015
77-year-old female polymorbid woman with renal insufficiency, Ca-level and PTH level were both increased. Right thyroid lobe with 2.5 cm nodule. FNA from a nodule. Papanicolaou stained cytospin sample.

The Bethesda Thyroid Classification

What antibodies do you want to apply to cell block? (Please add your answer to the comment field)
Thyroglobulin
TTF-1
Calcitonin
Parathormone
Mitochondrial marker
Ki-67

S006 LQ779622016
34-year-old female presented with thyroid nodule at isthmus and left lobe border. Previous FNA at private laboratory was signed out as squamous cell tumor. Now ultrasound evaluation of painful 10 mm mass inside thyroid gland. Skin is normal. Mass is emptied with needle. Is it squamous cell lesion? Infection? Papanicolaou stained cytospin sample.

The Bethesda Thyroid Classification

Parameters
The answers are given according to Milan/Bethesda/Paris/The International System for Serous Fluid Cytopathology (TIS) classification systems or Papanicolaou classification and specific diagnosis. There is also commentary space given. Responses from individual pathologists are requested instead of responses based on group consensus. Interpretations should be made as similarly as possible compared to patient cases. It is possible to return multiple results/case (1-5 respondents). Although in everyday work you must often give several different diagnoses or interpretations, only one diagnosis of each case per respondent is wished. This will make final analysis easier.

It is important to take into account that this external quality assessment scheme does not evaluate cytological examination as a medical consultation. Only the most important parameters, especially cellular atypia, have been chosen to obtain a comprehensive final report.

Papanicolaou classes
0 (not representative)
1 (normal)
2 (benign atypia)
3 (mild suspicion for malignancy)
4 (severe suspicion for malignancy)
5 (malignant)

The Paris System for Reporting Urinary Cytology Classification Terminology answers
Insufficient sample
Negative for High-Grade Urothelial Carcinoma
Atypical Urothelial Cells
Suspicious for High-Grade Urothelial Carcinoma
High-Grade Urothelial Carcinoma
Other Malignancy

Milan Salivary Gland Cytology Classification Terminology answers
Non-diagnostic
Non-neoplastic
Atypia of undetermined significance (AUS)
Neoplasm - Benign neoplasm
Neoplasm - Salivary gland neoplasm of uncertain malignant potential (SUMP)
Suspicious for malignancy
Malignant

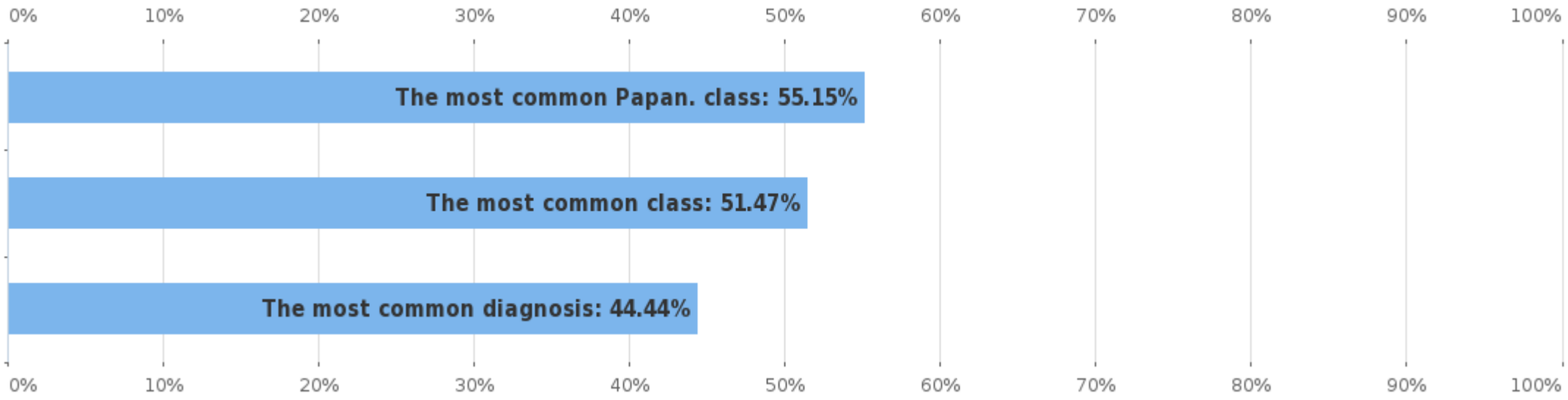
Bethesda Thyroid Classification Terminology answers
Nondiagnostic or Unsatisfactory
Benign
Atypia of Undetermined Significance or Follicular Lesion of Undetermined Significance
Follicular Neoplasm or Suspicious for a Follicular Neoplasm
Suspicious for Malignancy
Malignant

The International System for Serous Fluid Cytopathology (TIS)
Non-diagnostic
Negative for malignancy
Atypia of Undetermined Significance
Suspicious for malignancy
Malignant-Primary
Malignant-Secondary

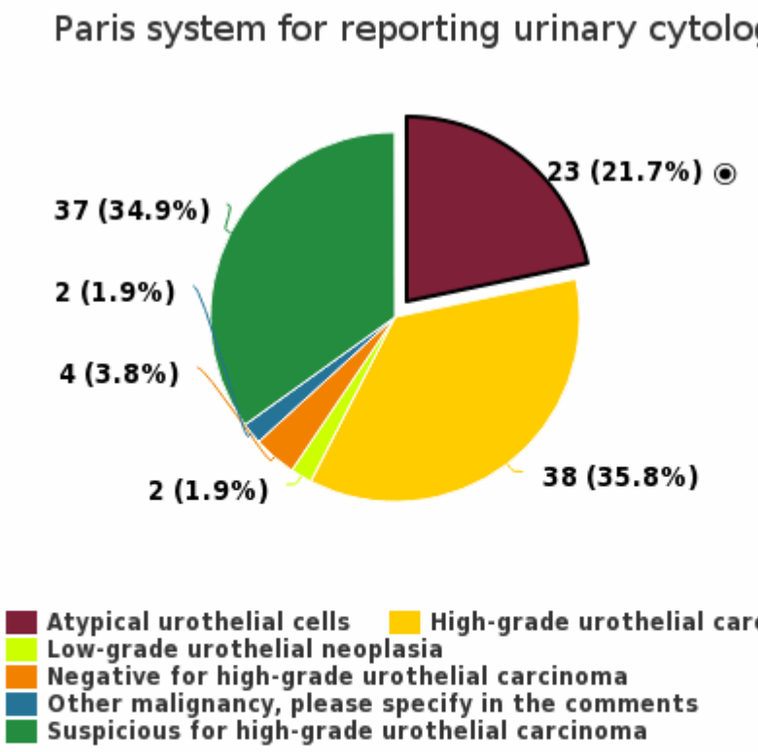
Specific diagnosis
Normal finding
Inflammation
Nonspecific inflammation
Granulomatous inflammation
Fungal infection
Ectopic tissue
Hyperplasia
Metaplasia
Cyst
Atheroma
Other benign change, specify in comments
Benign neoplasm, specify in comments
Premalignant change or in situ malignancy
Lymphatic or hematopoietic malignancy
Suspicious for squamous cell carcinoma
Squamous cell carcinoma
Suspicious for urothelial carcinoma
Urothelial carcinoma
Low-Grade Urothelial Neoplasia
Suspicious for adenocarcinoma
Adenocarcinoma
Suspicious for serous adenocarcinoma
Serous adenocarcinoma
Suspicious for mucinous adenocarcinoma
Mucinous adenocarcinoma
Small cell carcinoma
Poorly differentiated carcinoma
Papillary carcinoma
Malignant mesothelioma
Sarcoma
Other malignant neoplasm, specify in comments
Secondary tumor/metastasis
Unclear change
Specimen not representative
Insufficient material for diagnosis

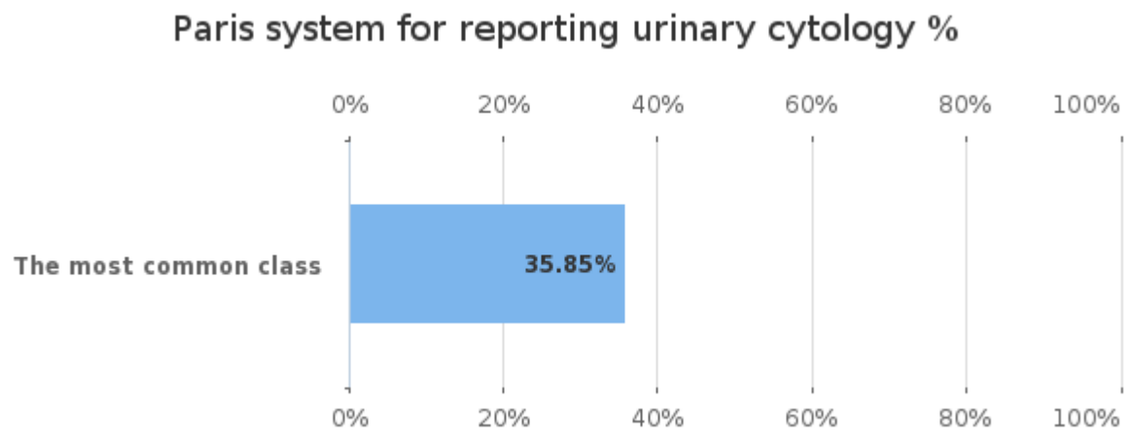
Round	No of participants	No of responded participants	Response percentage %
Non-gynaecological cytology, virtual microscopy, October, 1-2022	105	94	89.52%

Agreement percentage of the responses



Case 1 | Paris system for reporting urinary cytology

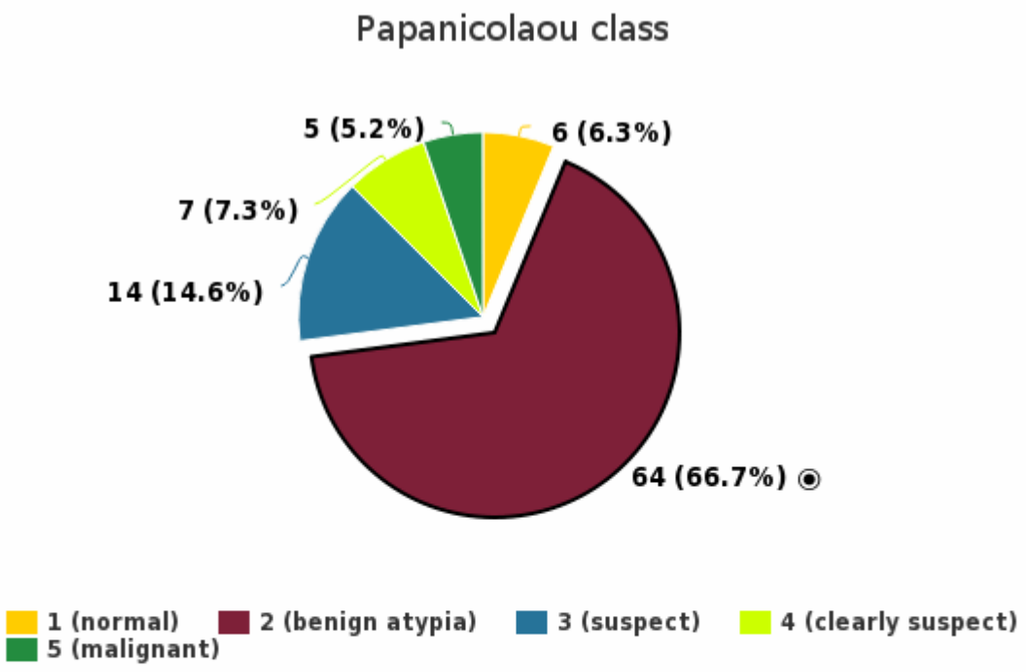


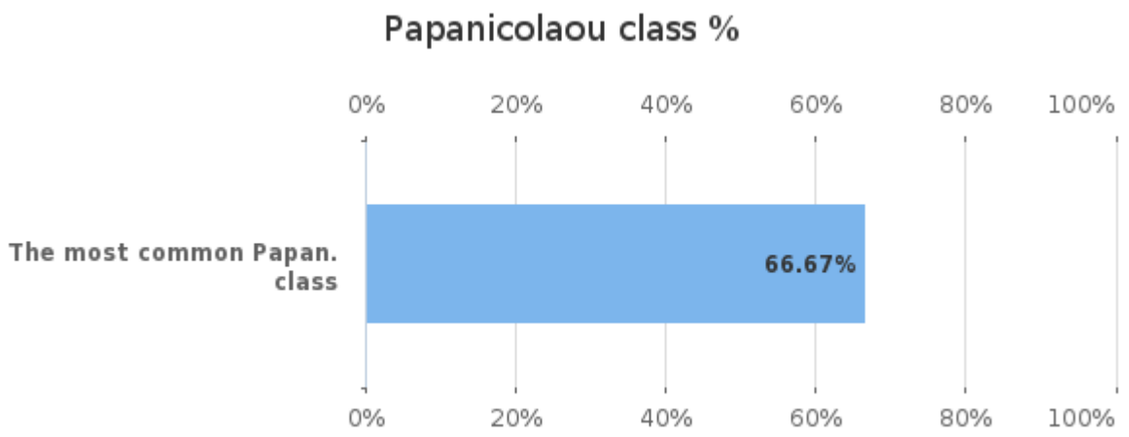


Paris system for reporting urinary cytology	n
Atypical urothelial cells	23
High-grade urothelial carcinoma	38
Low-grade urothelial neoplasia	2
Negative for high-grade urothelial carcinoma	4
Other malignancy, please specify in the comments	2
Suspicious for high-grade urothelial carcinoma	37
Total	**106**

Agreement percentage of the responses	%
The most common class	35.85

Case 2 | Papanicolaou class

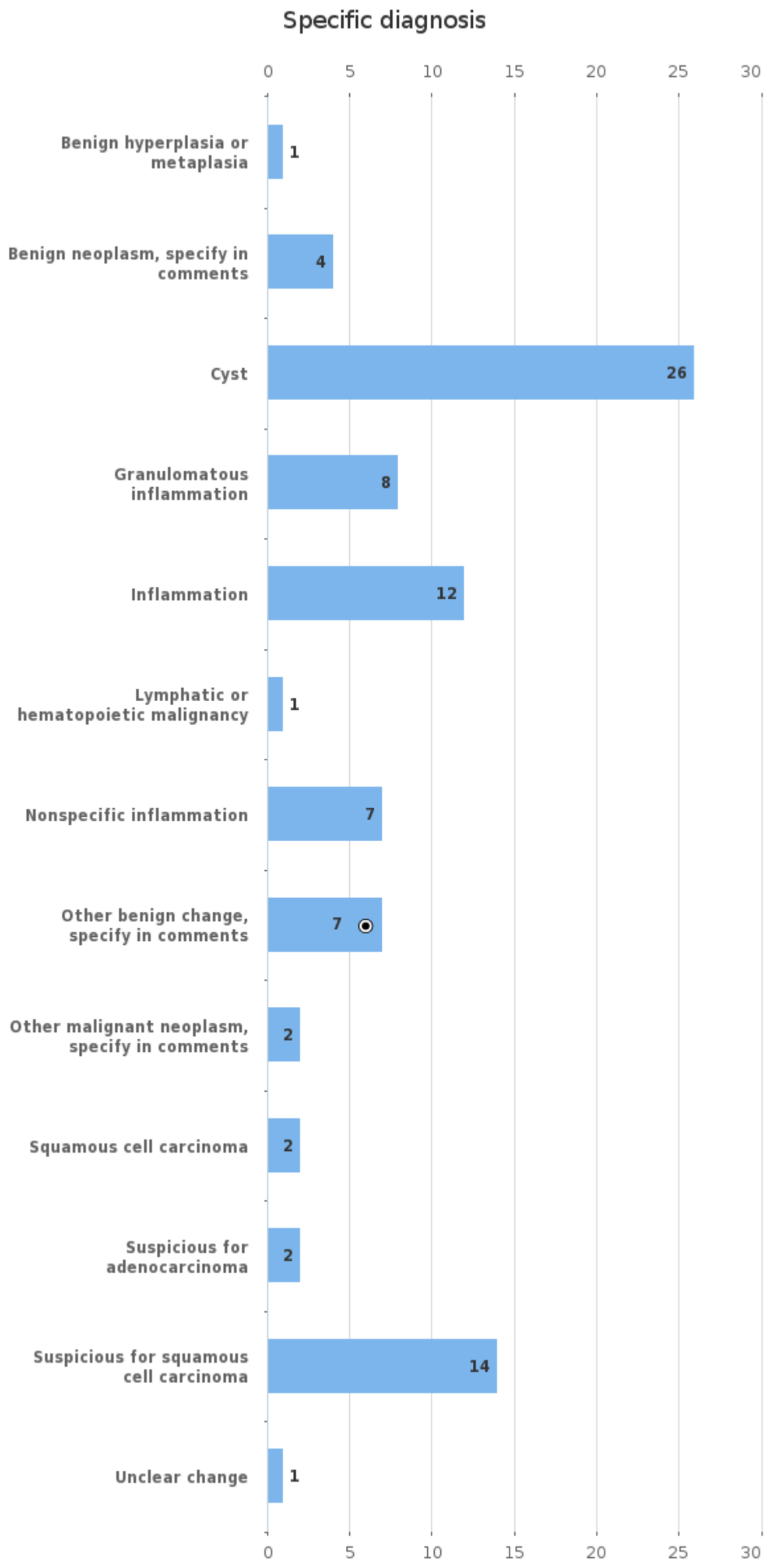


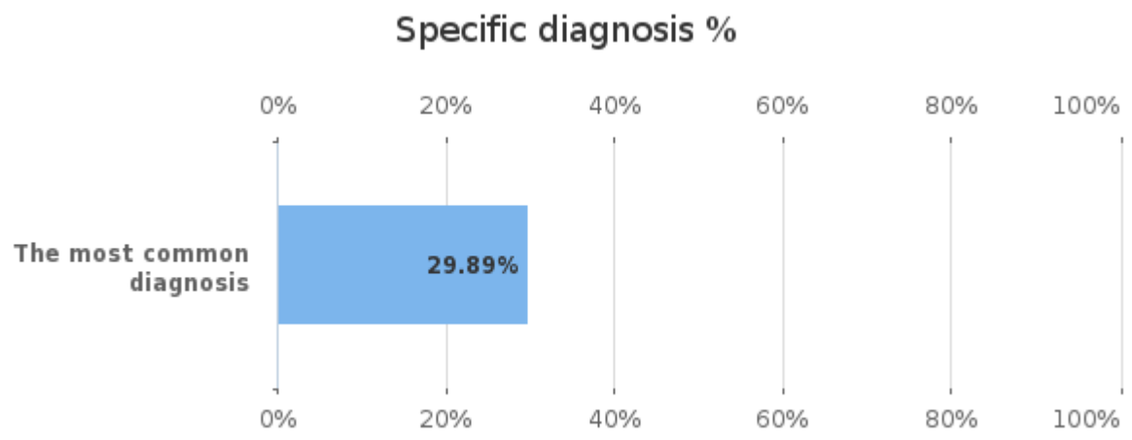


Papanicolaou class	n
1 (normal)	6
2 (benign atypia)	64
3 (suspect)	14
4 (clearly suspect)	7
5 (malignant)	5
Total	**96**

Agreement percentage of the responses	%
The most common Papan. class	66.67

Case 2 | Specific diagnosis



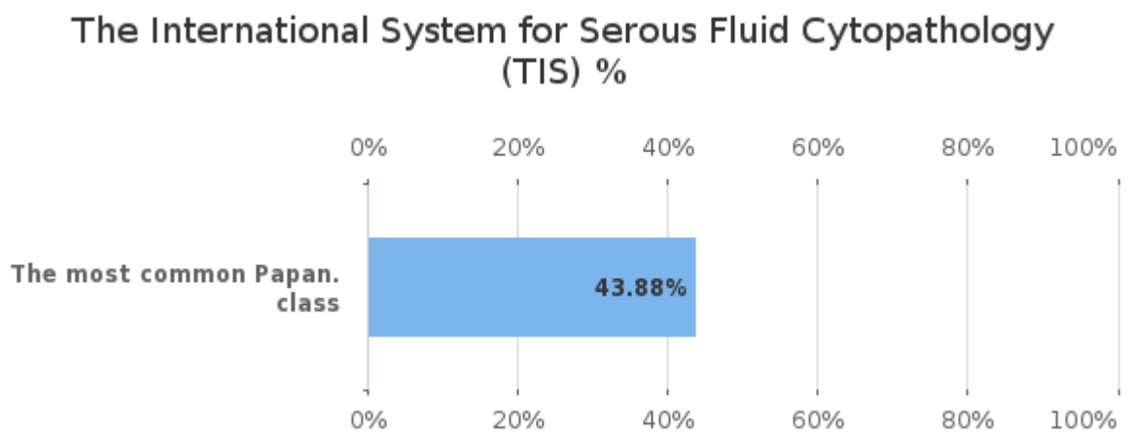


Specific diagnosis	n
Benign hyperplasia or metaplasia	1
Benign neoplasm, specify in comments	4
Cyst	26
Granulomatous inflammation	8
Inflammation	12
Lymphatic or hematopoietic malignancy	1
Nonspecific inflammation	7
Other benign change, specify in comments	7
Other malignant neoplasm, specify in comments	2
Squamous cell carcinoma	2
Suspicious for adenocarcinoma	2
Suspicious for squamous cell carcinoma	14
Unclear change	1

Agreement percentage of the responses	%
The most common diagnosis	29.89

Total	**87**

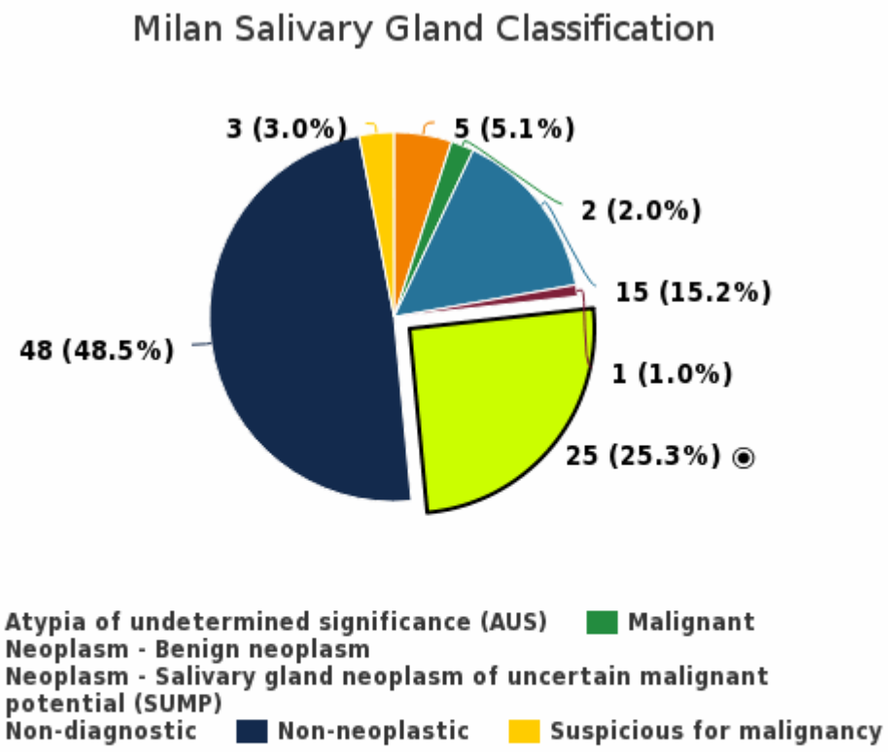
Case 3 | The International System for Serous Fluid Cytopathology (TIS)

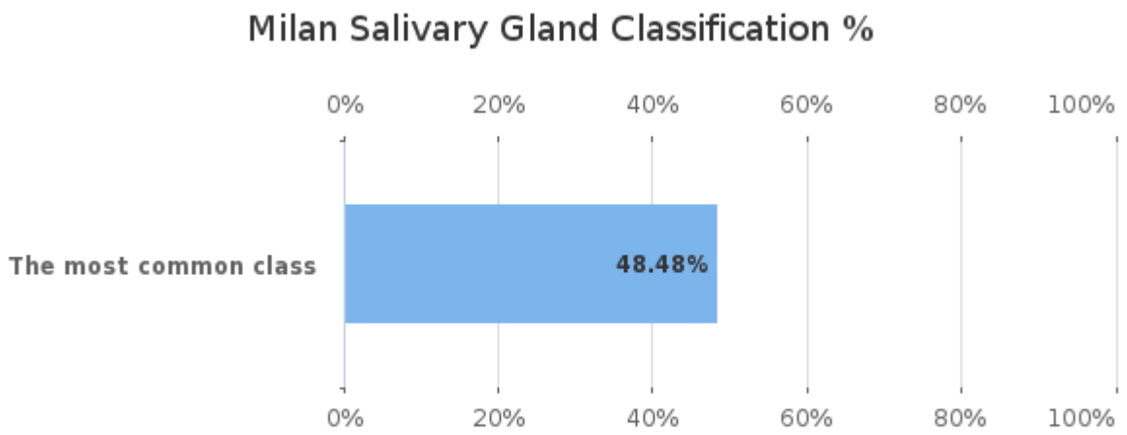


The International System for Serous Fluid Cytopathology (TIS)	n
Negative for malignancy	11
Atypia of Undetermined Significance	11
Suspicious for malignancy	33
Malignant-Secondary	43
Total	**98**

Agreement percentage of the responses	%
The most common Papan. class	43.88

Case 4 | Milan Salivary Gland Classification

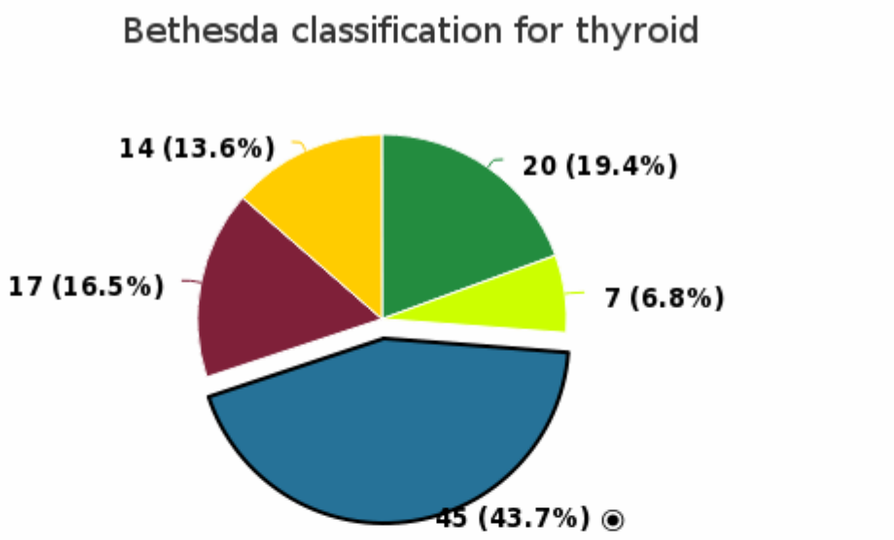


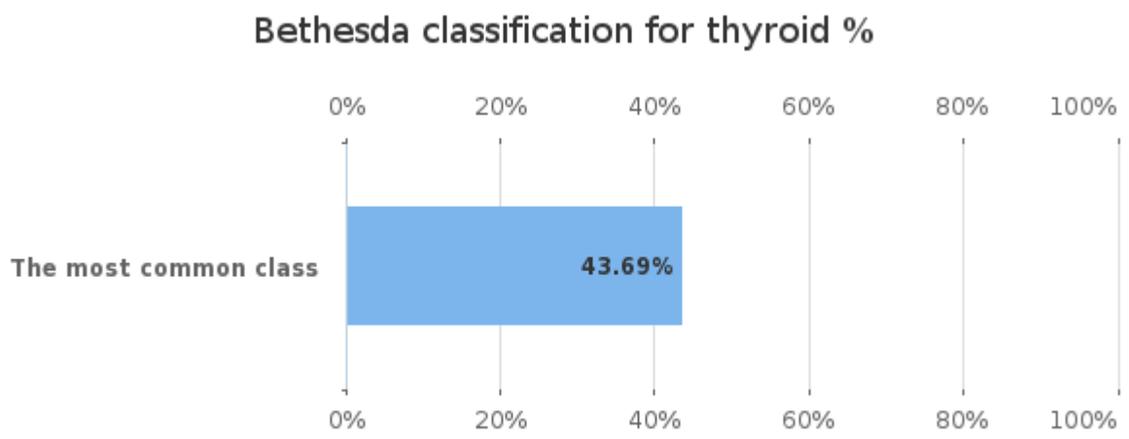


Milan Salivary Gland Classification	n
Atypia of undetermined significance (AUS)	5
Malignant	2
Neoplasm - Benign neoplasm	15
Neoplasm - Salivary gland neoplasm of uncertain malignant potential (SUMP)	1
Non-diagnostic	25
Non-neoplastic	48
Suspicious for malignancy	3
Total	**99**

Agreement percentage of the responses	%
The most common class	48.48

Case 5 | Bethesda classification for thyroid

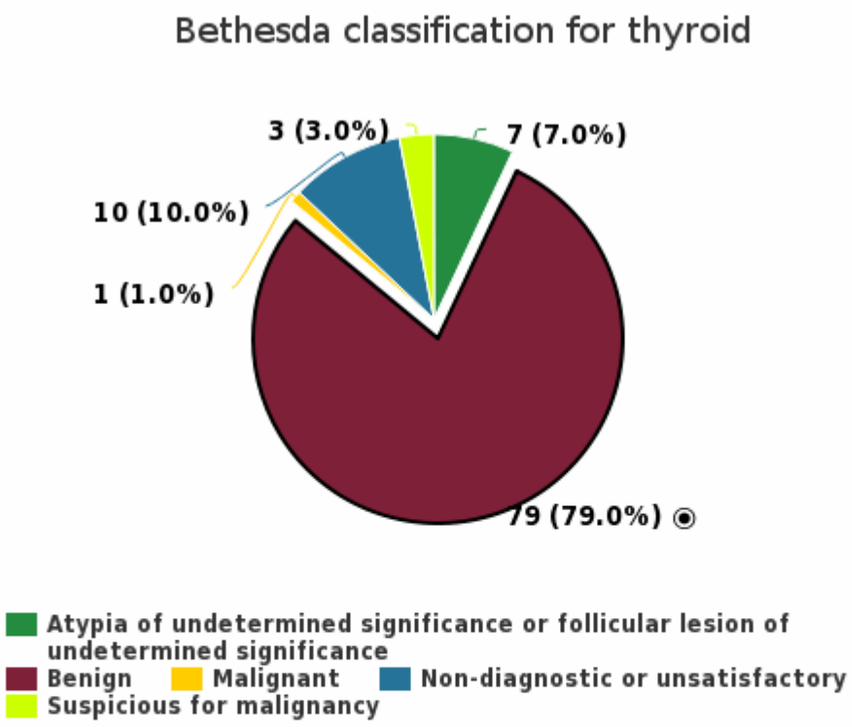


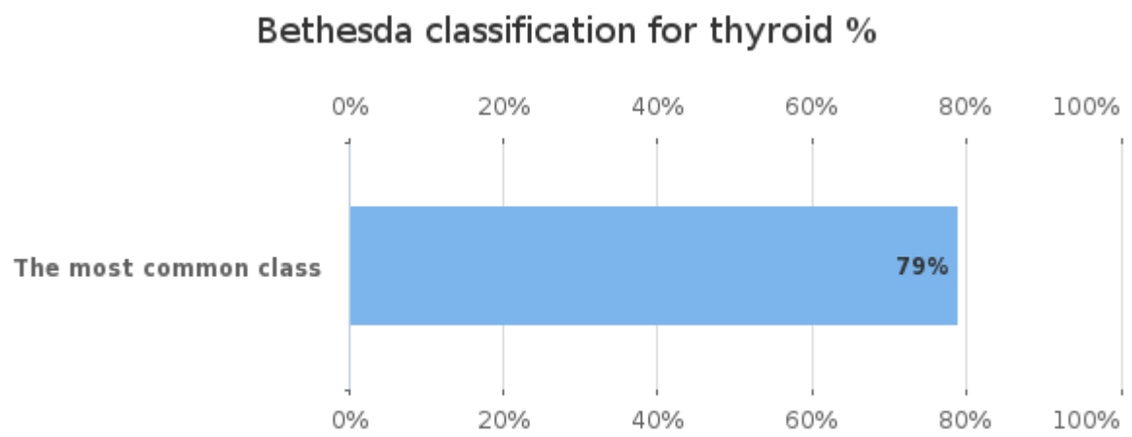


Bethesda classification for thyroid	n
Atypia of undetermined significance or follicular lesion of undetermined significance	20
Benign	7
Follicular neoplasm or suspicious for a follicular neoplasm	45
Malignant	17
Suspicious for malignancy	14
Total	**103**

Agreement percentage of the responses	%
The most common class	43.69

Case 6 | Bethesda classification for thyroid

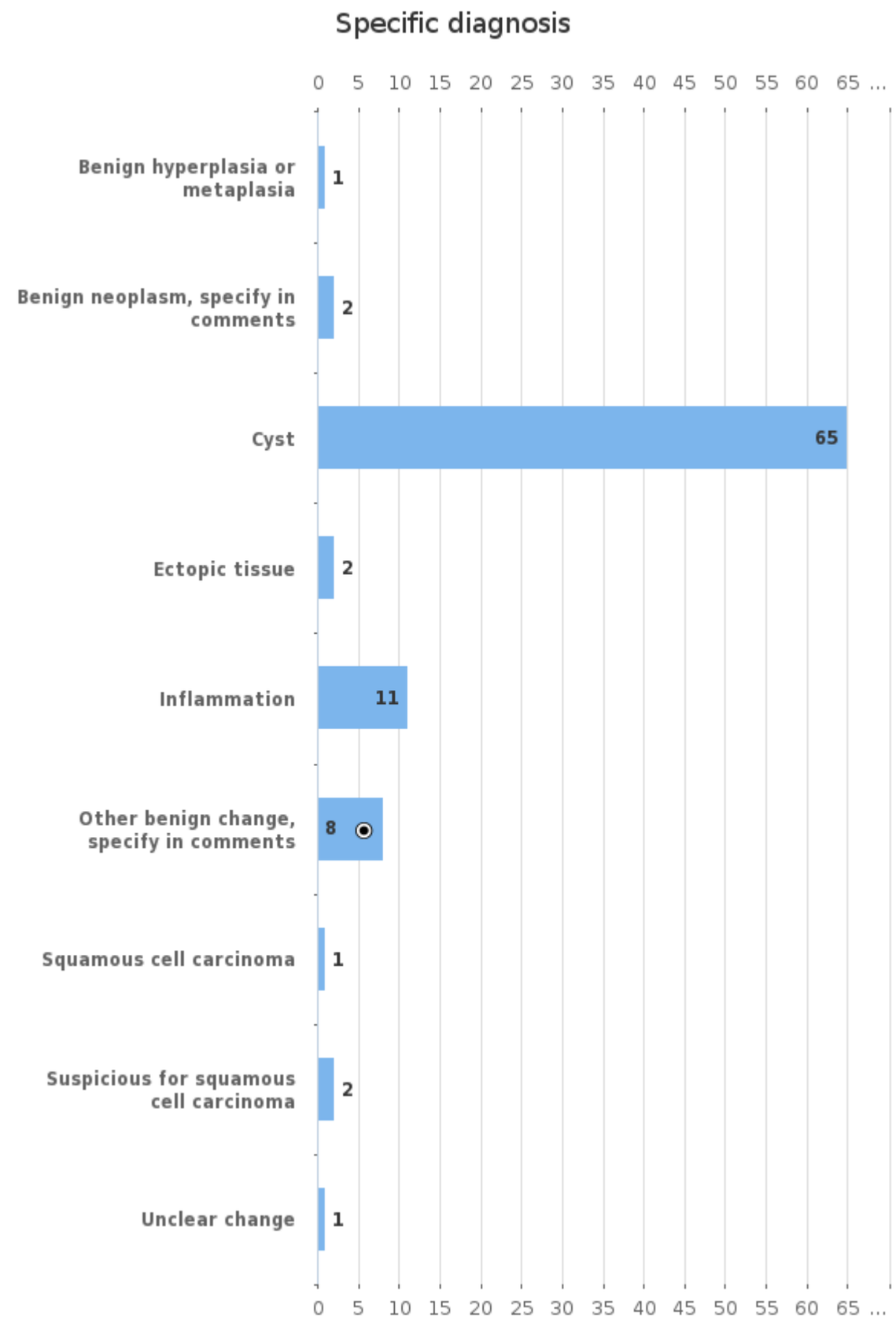


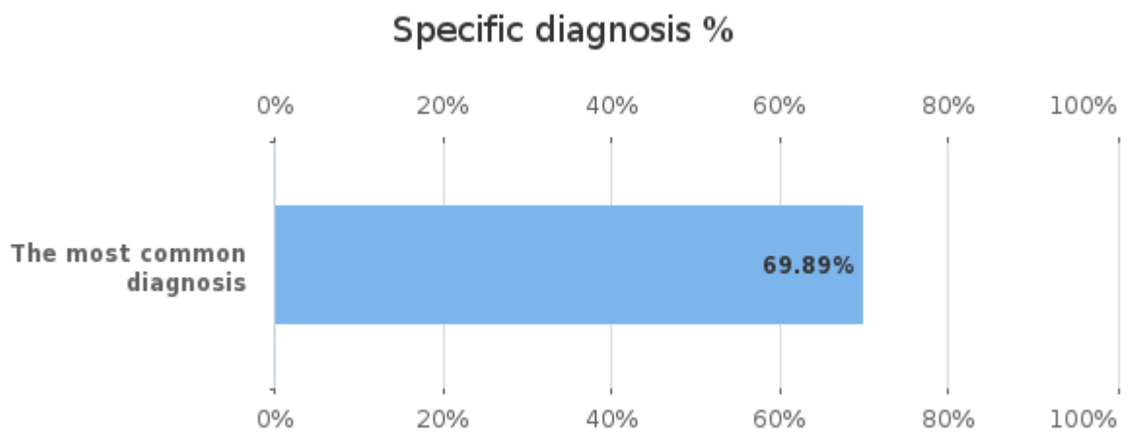


Bethesda classification for thyroid	n
Atypia of undetermined significance or follicular lesion of undetermined significance	7
Benign	79
Malignant	1
Non-diagnostic or unsatisfactory	10
Suspicious for malignancy	3
Total	**100**

Agreement percentage of the responses	%
The most common class	79

Case 6 | Specific diagnosis





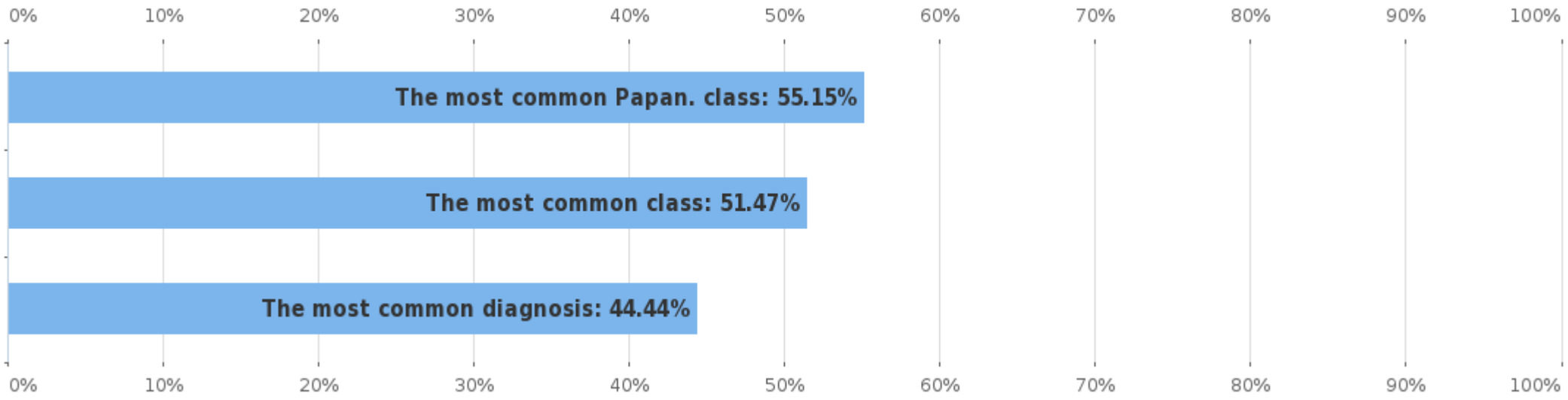
Specific diagnosis	n
Benign hyperplasia or metaplasia	1
Benign neoplasm, specify in comments	2
Cyst	65
Ectopic tissue	2
Inflammation	11
Other benign change, specify in comments	8
Squamous cell carcinoma	1
Suspicious for squamous cell carcinoma	2
Unclear change	1
Total	**93**

Agreement percentage of the responses	%
The most common diagnosis	69.89

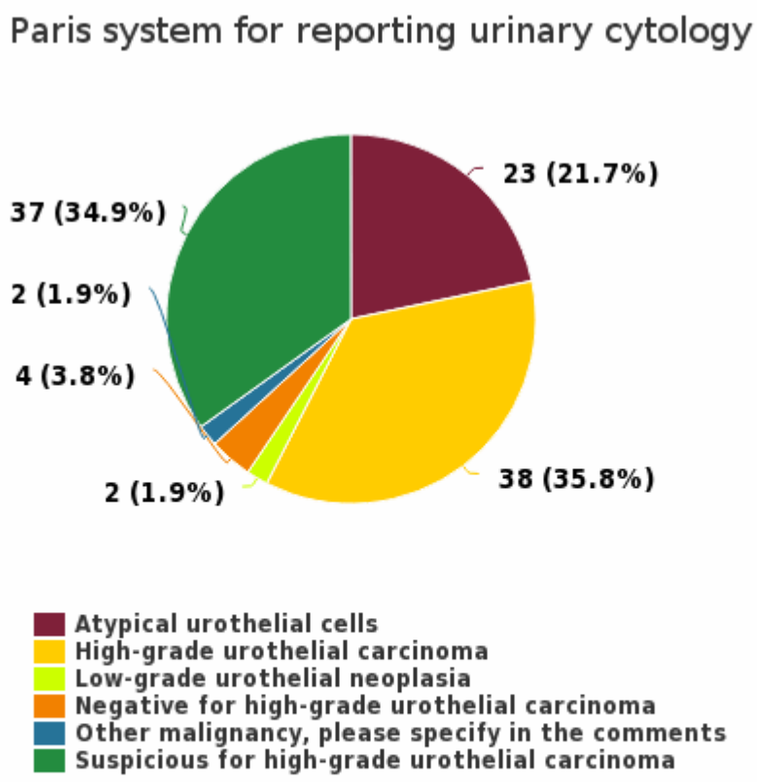
Non-gynaecological cytology, virtual microscopy, October, 1-2022

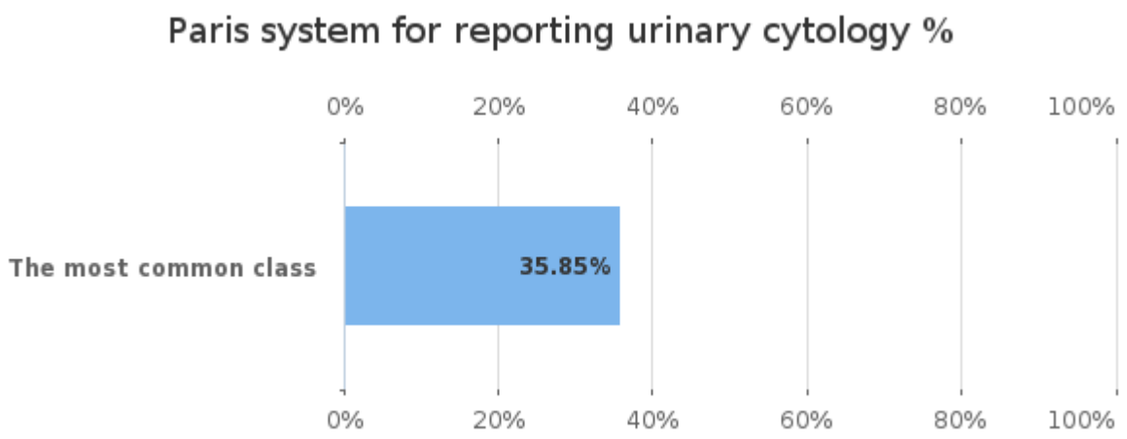
Round	No of participants	No of responded participants	Response percentage %
Non-gynaecological cytology, virtual microscopy, October, 1-2022	105	94	89.52%

Agreement percentage of the responses



Case 1 | Paris system for reporting urinary cytology

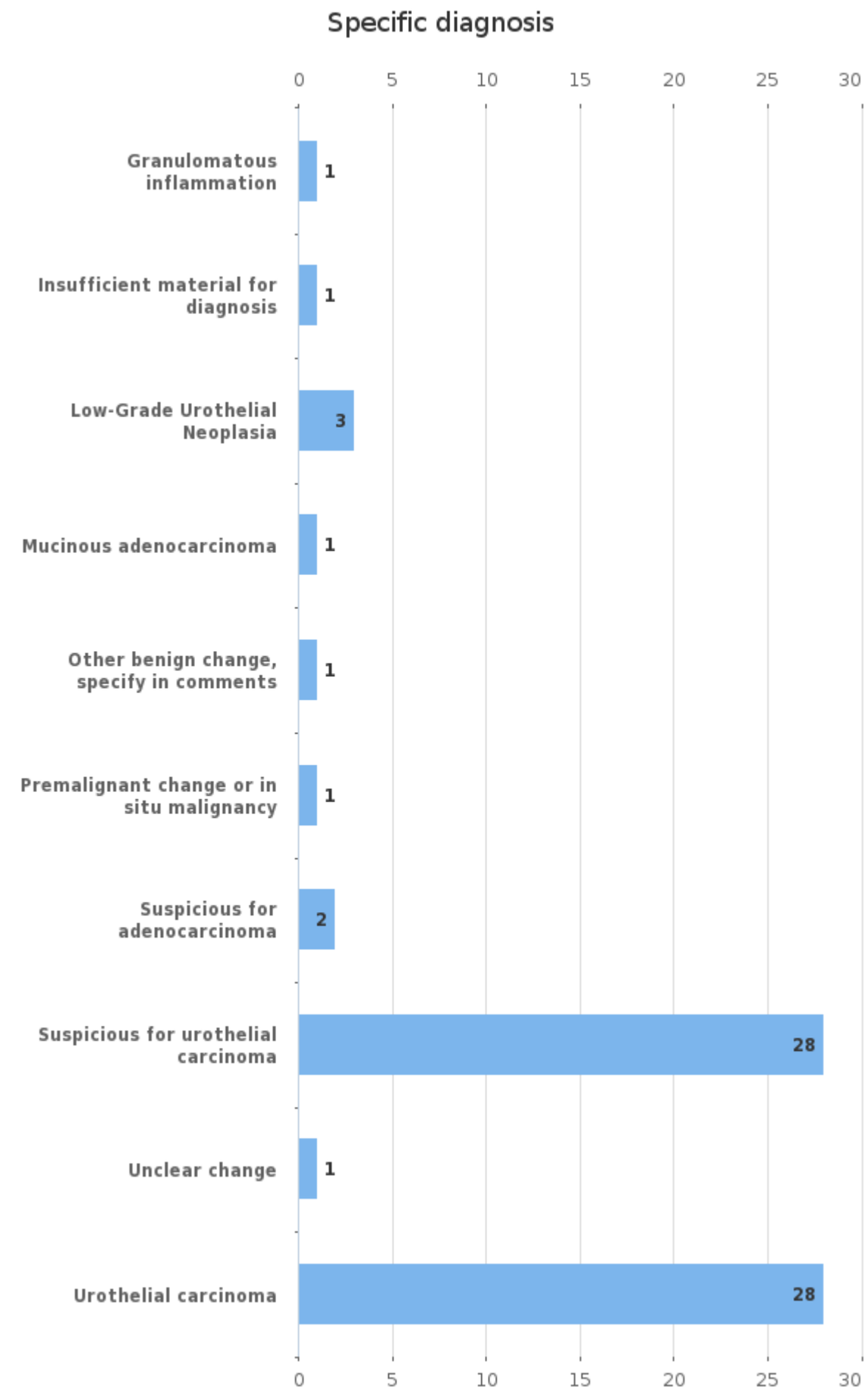


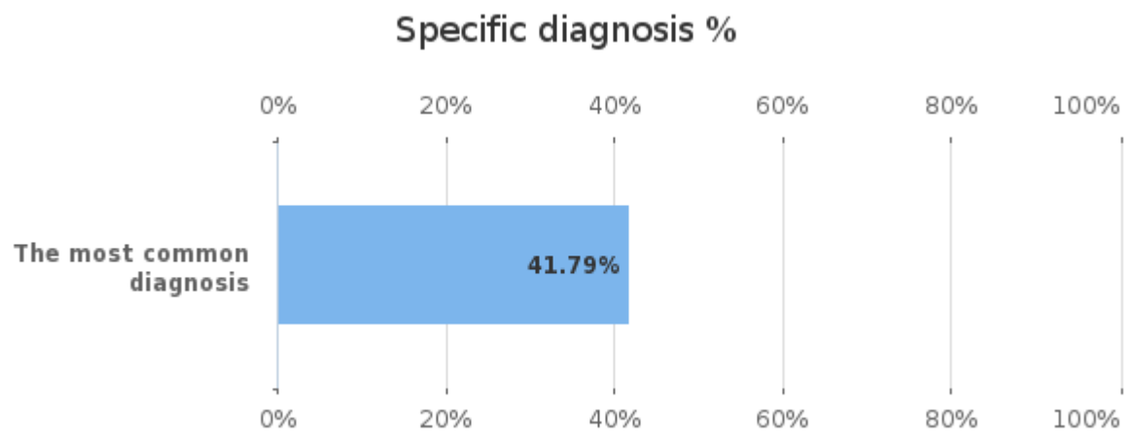


Paris system for reporting urinary cytology	n
Atypical urothelial cells	23
High-grade urothelial carcinoma	38
Low-grade urothelial neoplasia	2
Negative for high-grade urothelial carcinoma	4
Other malignancy, please specify in the comments	2
Suspicious for high-grade urothelial carcinoma	37
Total	**106**

Agreement percentage of the responses	%
The most common class	35.85

Case 1 | Specific diagnosis

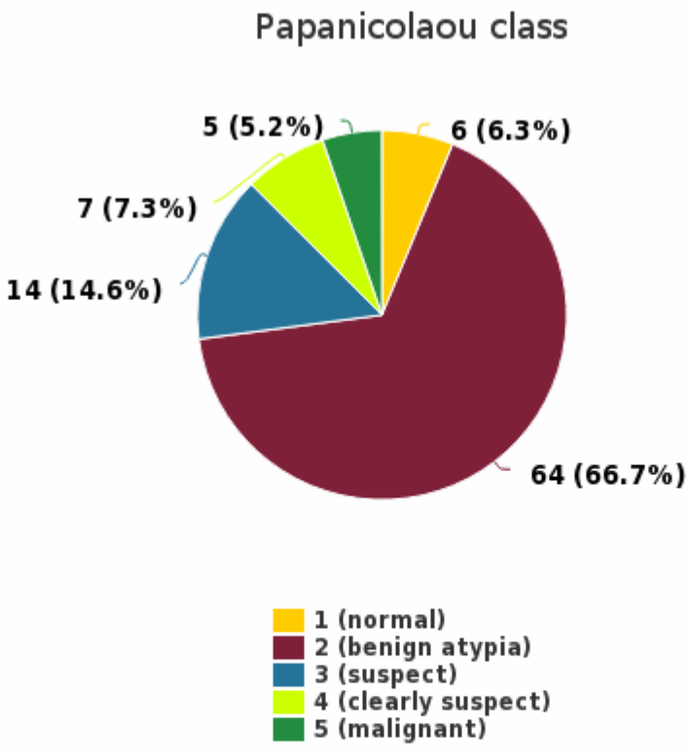


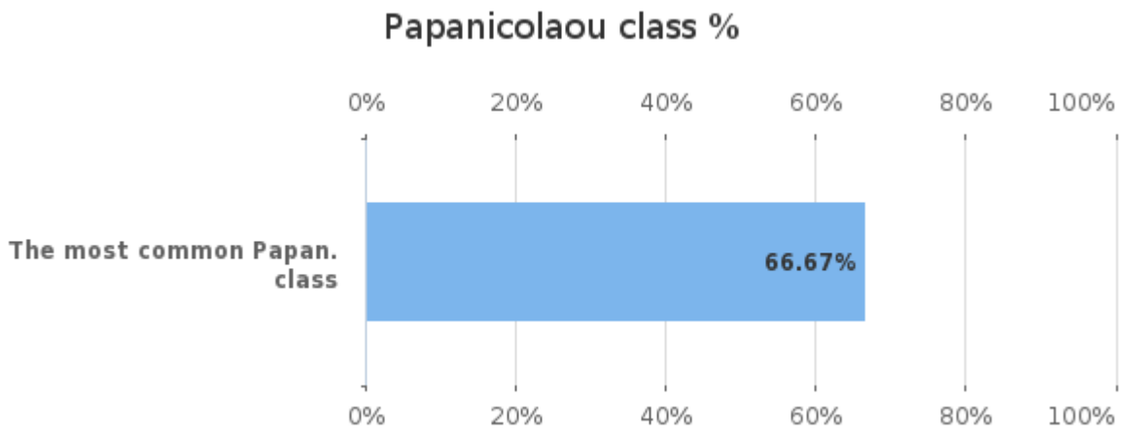


Specific diagnosis	n
Granulomatous inflammation	1
Insufficient material for diagnosis	1
Low-Grade Urothelial Neoplasia	3
Mucinous adenocarcinoma	1
Other benign change, specify in comments	1
Premalignant change or in situ malignancy	1
Suspicious for adenocarcinoma	2
Suspicious for urothelial carcinoma	28
Unclear change	1
Urothelial carcinoma	28
Total	**67**

Agreement percentage of the responses	%
The most common diagnosis	41.79

Case 2 | Papanicolaou class

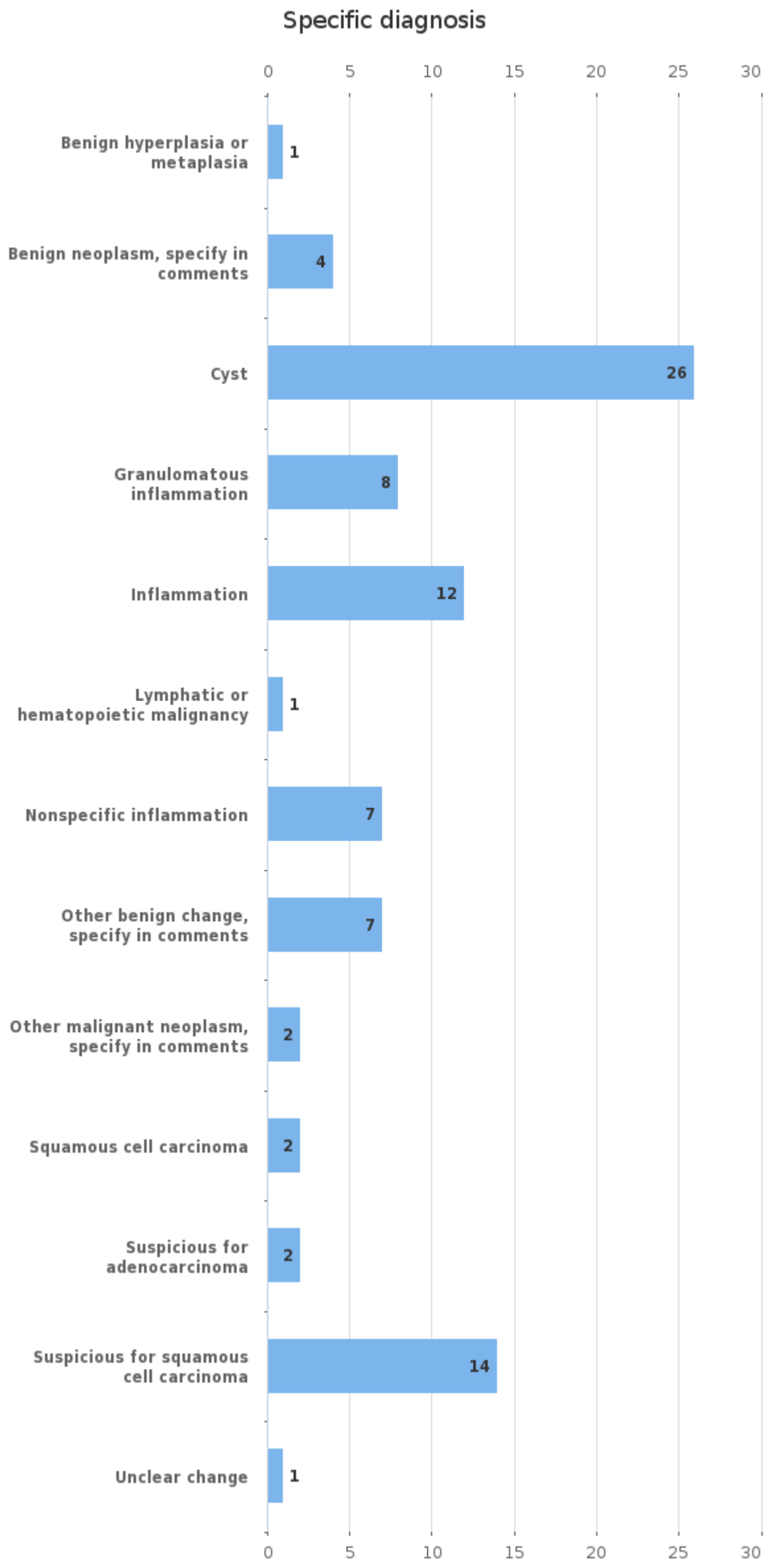


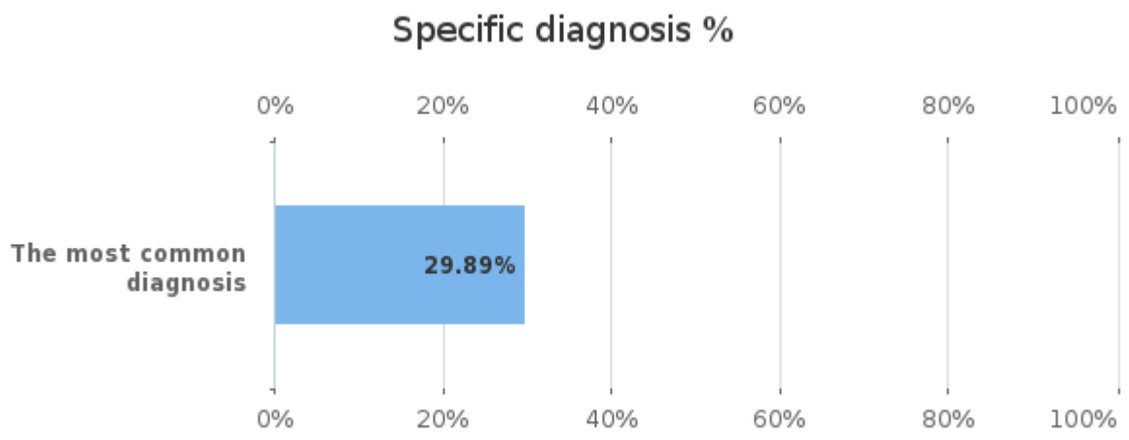


Papanicolaou class	n
1 (normal)	6
2 (benign atypia)	64
3 (suspect)	14
4 (clearly suspect)	7
5 (malignant)	5
Total	**96**

Agreement percentage of the responses	%
The most common Papan. class	66.67

Case 2 | Specific diagnosis



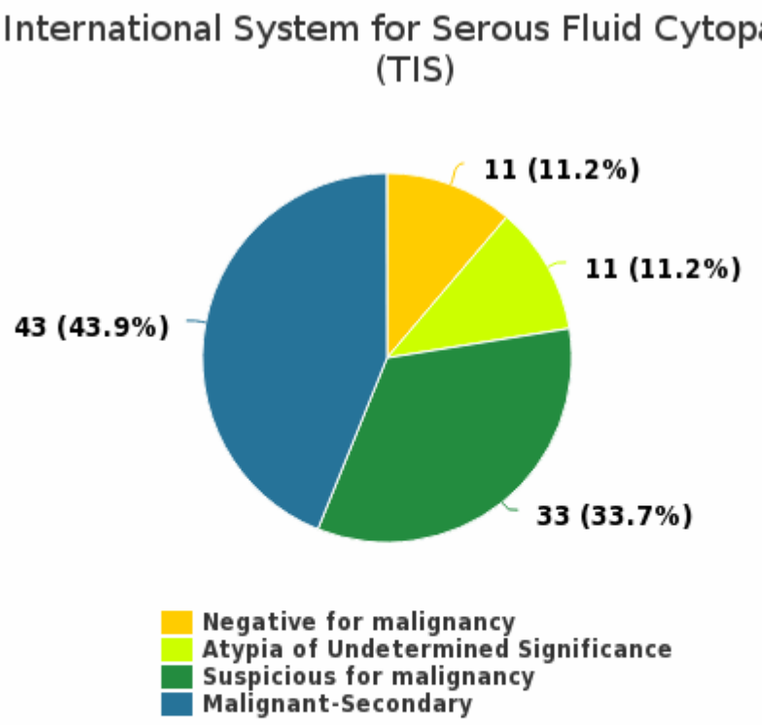


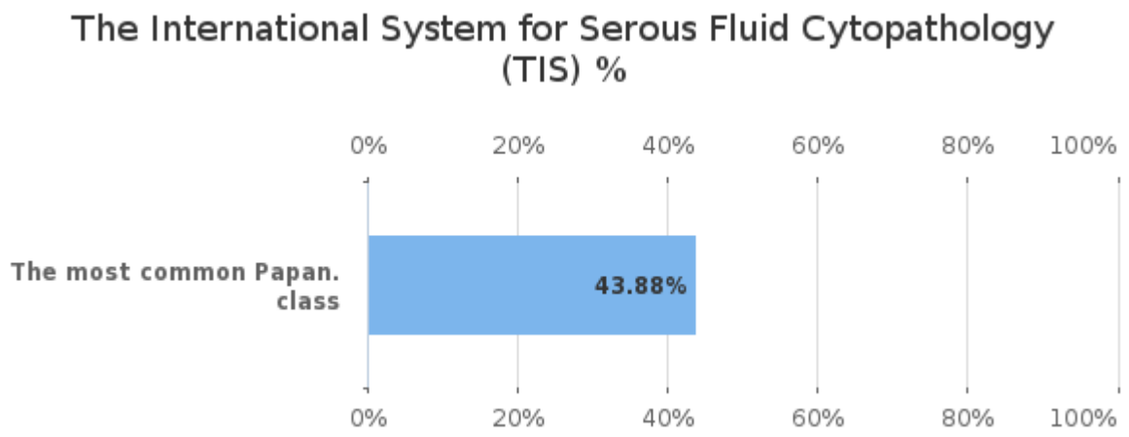
Specific diagnosis	n
Benign hyperplasia or metaplasia	1
Benign neoplasm, specify in comments	4
Cyst	26
Granulomatous inflammation	8
Inflammation	12
Lymphatic or hematopoietic malignancy	1
Nonspecific inflammation	7
Other benign change, specify in comments	7
Other malignant neoplasm, specify in comments	2
Squamous cell carcinoma	2
Suspicious for adenocarcinoma	2
Suspicious for squamous cell carcinoma	14
Unclear change	1

Agreement percentage of the responses	%
The most common diagnosis	29.89

Total	**87**

Case 3 | The International System for Serous Fluid Cytopathology (TIS)

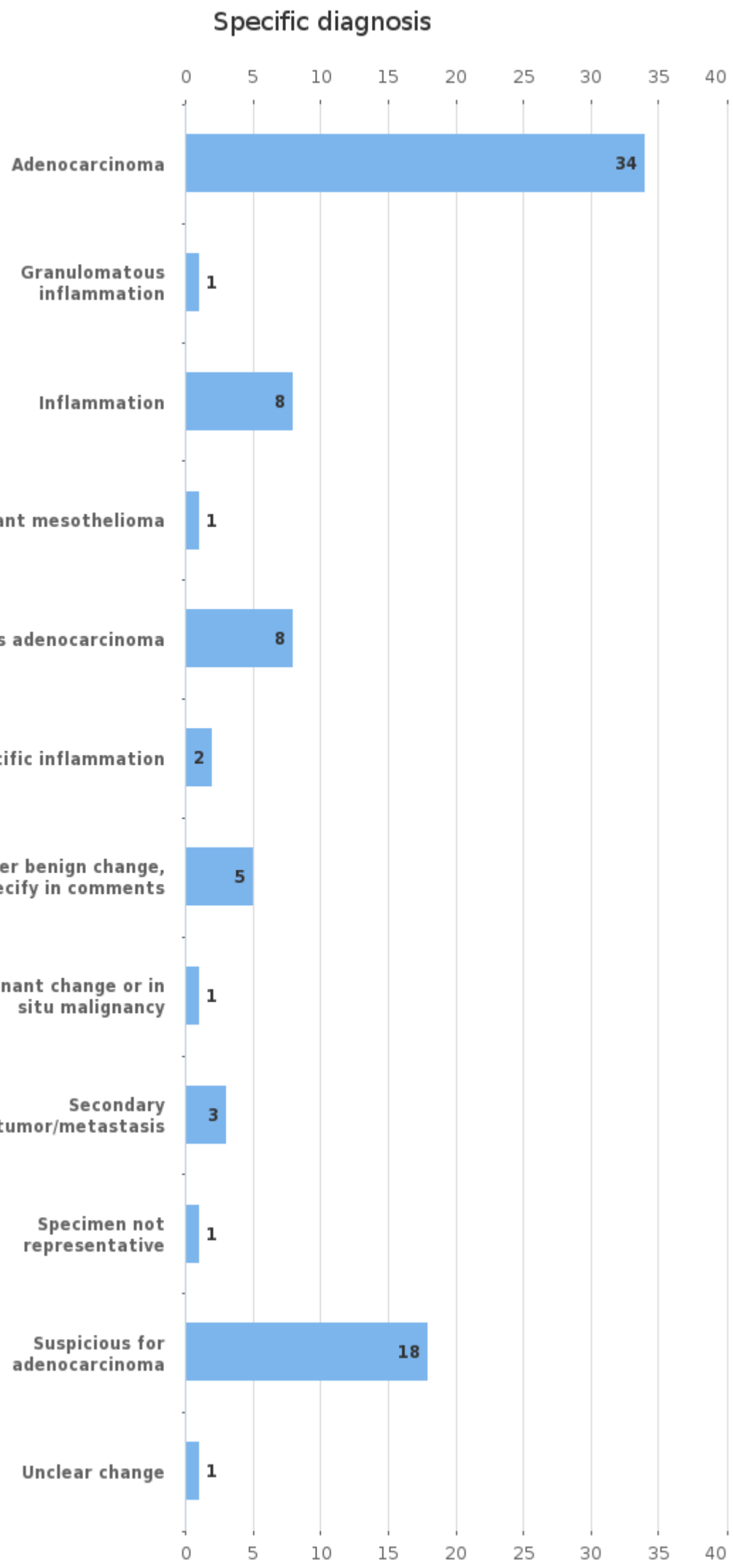


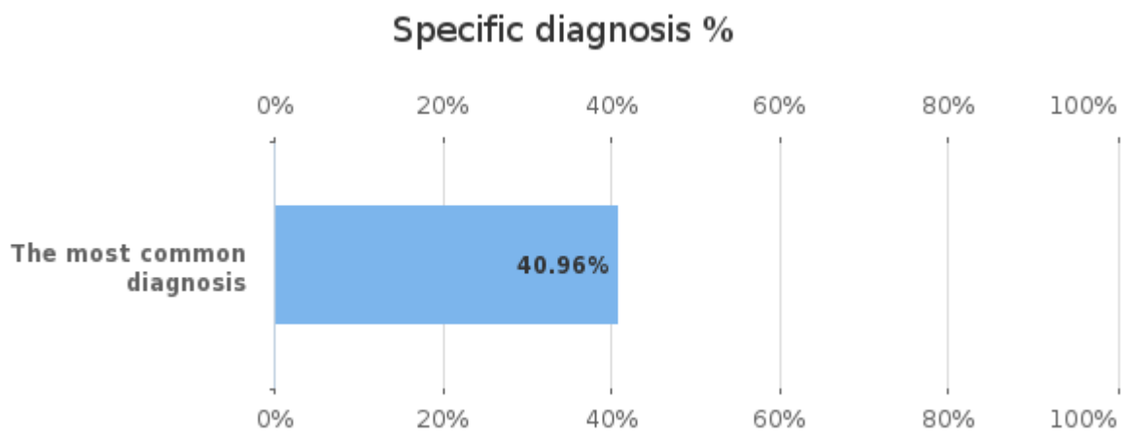


The International System for Serous Fluid Cytopathology (TIS)	n
Negative for malignancy	11
Atypia of Undetermined Significance	11
Suspicious for malignancy	33
Malignant-Secondary	43
Total	**98**

Agreement percentage of the responses	%
The most common Papan. class	43.88

Case 3 | Specific diagnosis

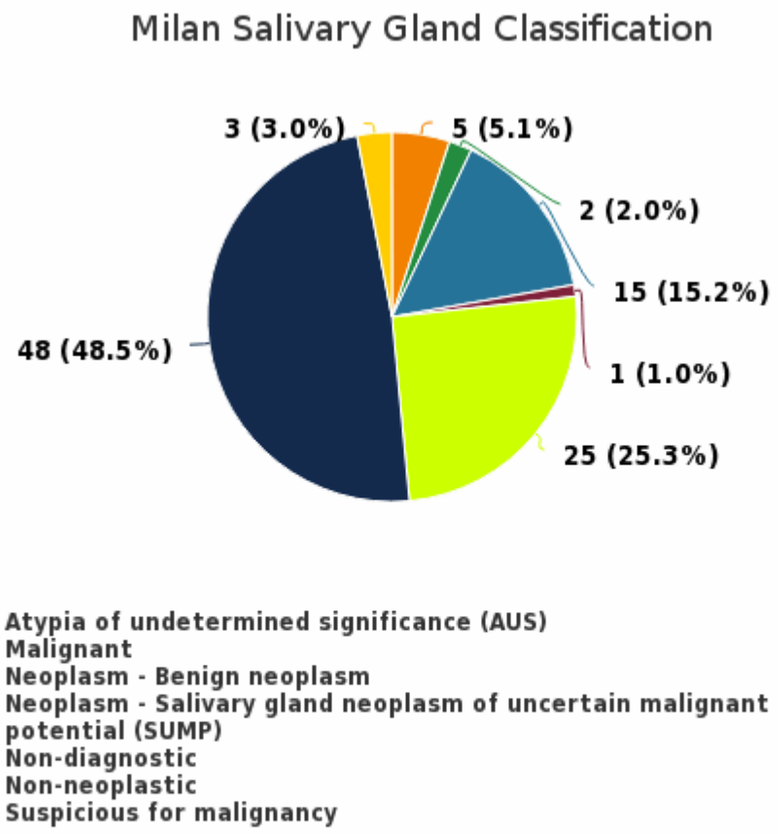


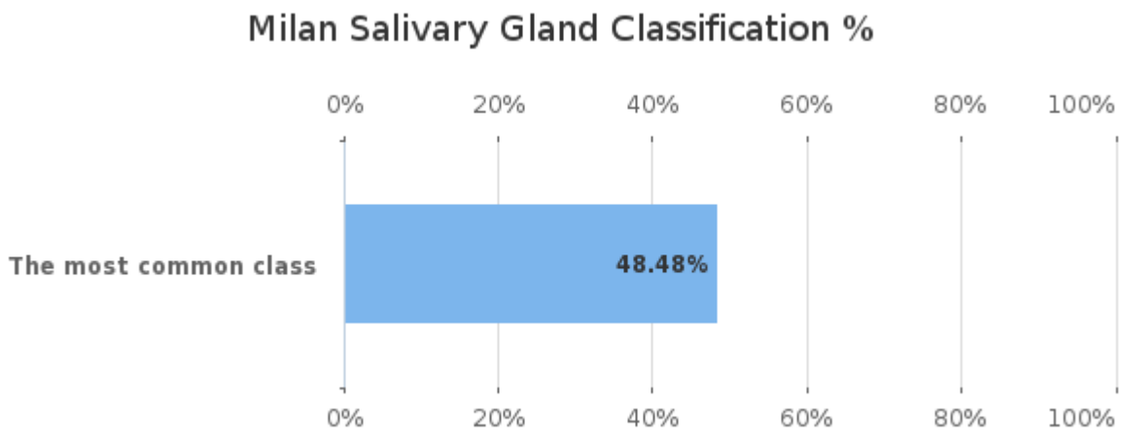


Specific diagnosis	n
Adenocarcinoma	34
Granulomatous inflammation	1
Inflammation	8
Malignant mesothelioma	1
Mucinous adenocarcinoma	8
Nonspecific inflammation	2
Other benign change, specify in comments	5
Premalignant change or in situ malignancy	1
Secondary tumor/metastasis	3
Specimen not representative	1
Suspicious for adenocarcinoma	18
Unclear change	1
Total	**83**

Agreement percentage of the responses	%
The most common diagnosis	40.96

Case 4 | Milan Salivary Gland Classification

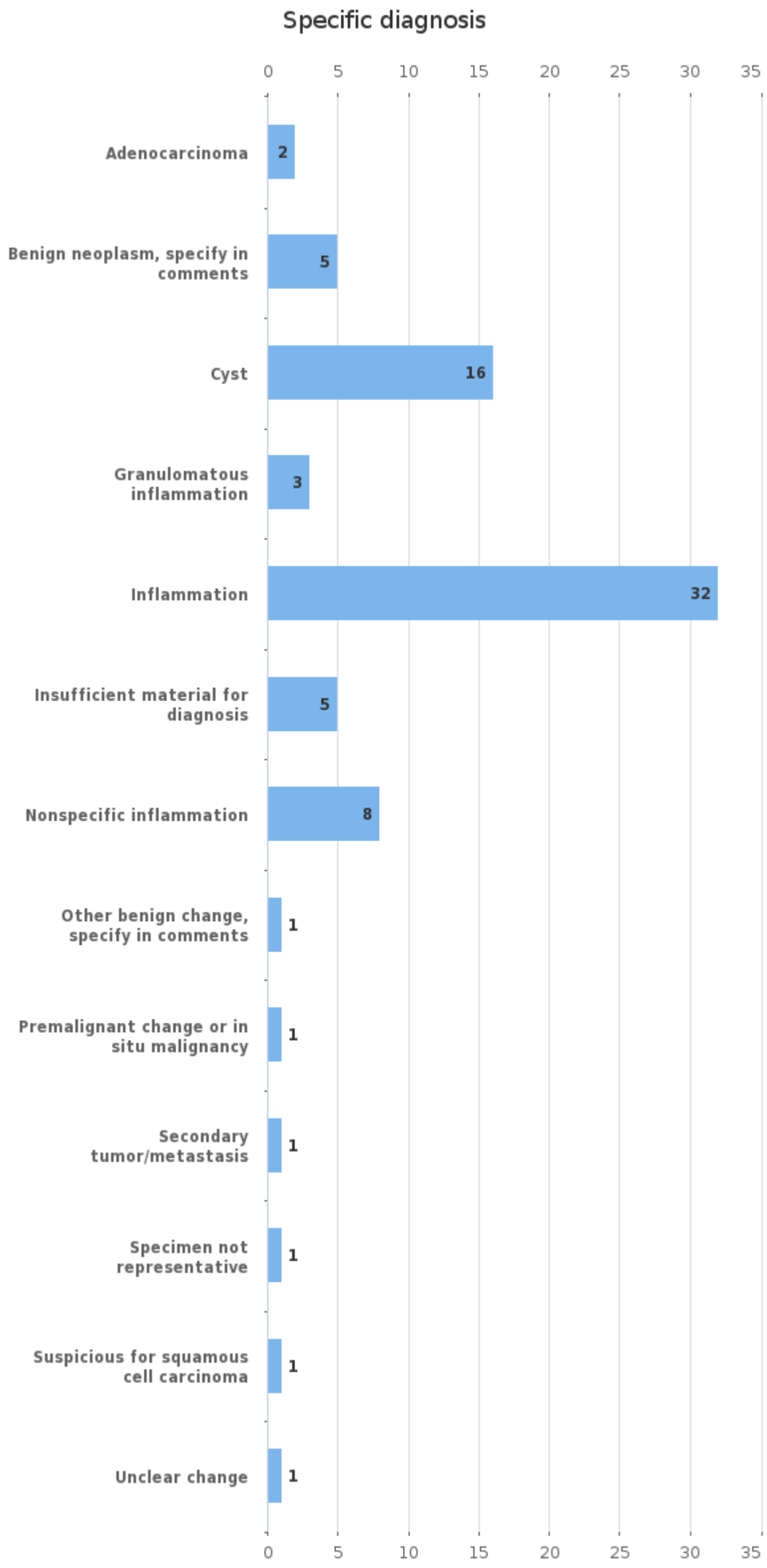


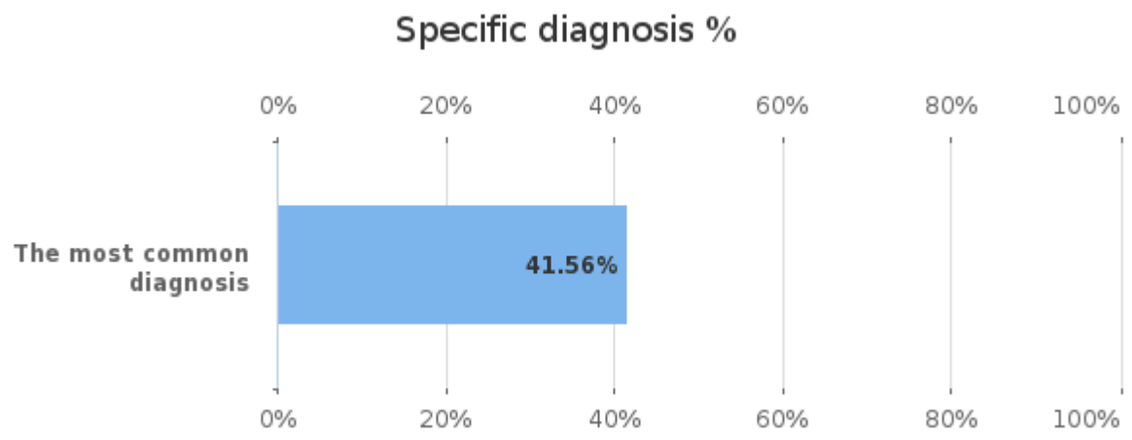


Milan Salivary Gland Classification	n
Atypia of undetermined significance (AUS)	5
Malignant	2
Neoplasm - Benign neoplasm	15
Neoplasm - Salivary gland neoplasm of uncertain malignant potential (SUMP)	1
Non-diagnostic	25
Non-neoplastic	48
Suspicious for malignancy	3
Total	**99**

Agreement percentage of the responses	%
The most common class	48.48

Case 4 | Specific diagnosis



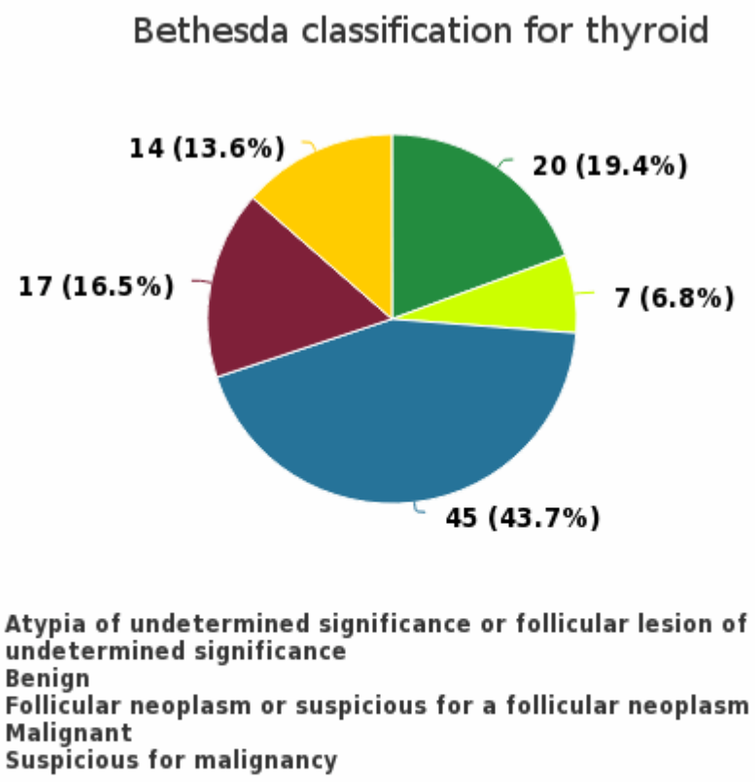


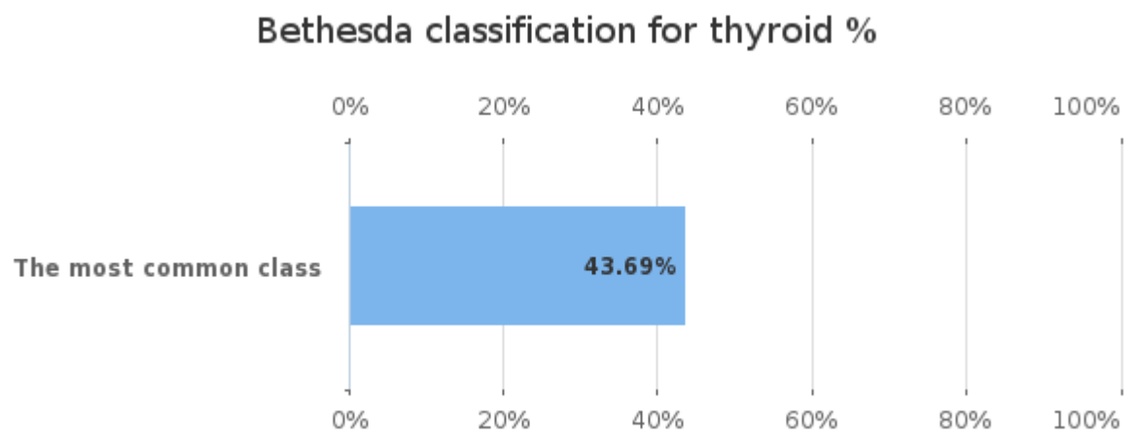
Specific diagnosis	n
Adenocarcinoma	2
Benign neoplasm, specify in comments	5
Cyst	16
Granulomatous inflammation	3
Inflammation	32
Insufficient material for diagnosis	5
Nonspecific inflammation	8
Other benign change, specify in comments	1
Premalignant change or in situ malignancy	1
Secondary tumor/metastasis	1
Specimen not representative	1
Suspicious for squamous cell carcinoma	1
Unclear change	1

Agreement percentage of the responses	%
The most common diagnosis	41.56

Total	**77**

Case 5 | Bethesda classification for thyroid

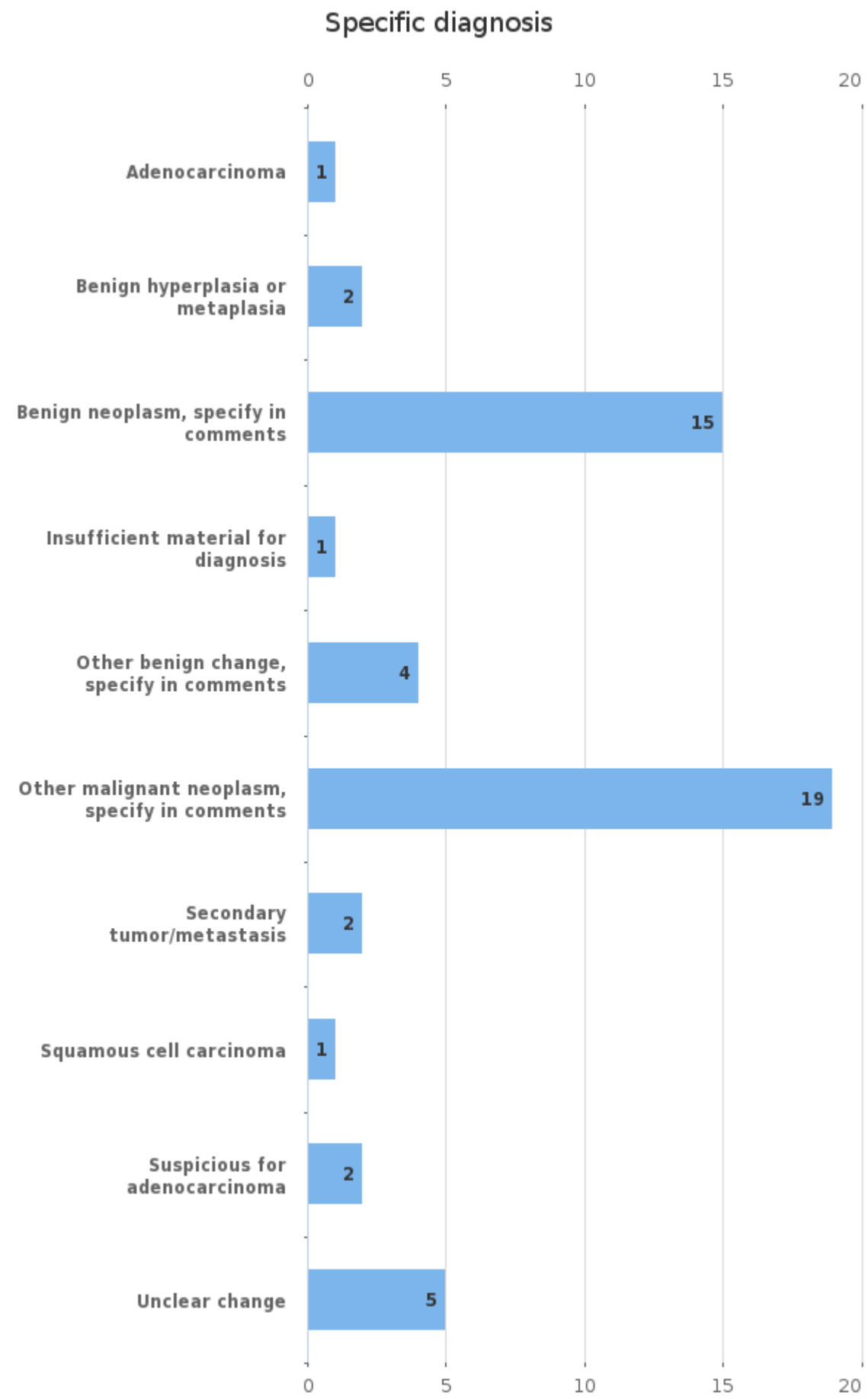


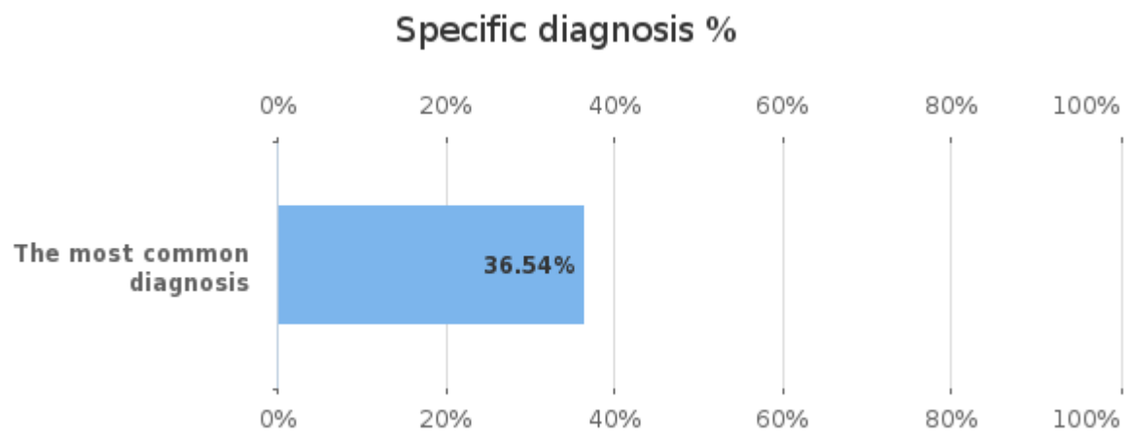


Bethesda classification for thyroid	n
Atypia of undetermined significance or follicular lesion of undetermined significance	20
Benign	7
Follicular neoplasm or suspicious for a follicular neoplasm	45
Malignant	17
Suspicious for malignancy	14
Total	**103**

Agreement percentage of the responses	%
The most common class	43.69

Case 5 | Specific diagnosis

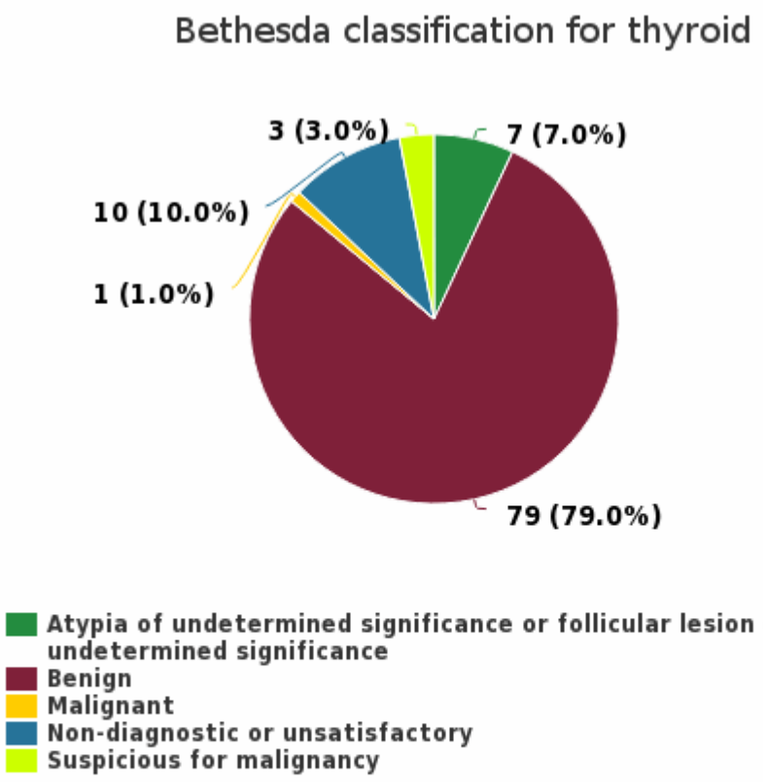


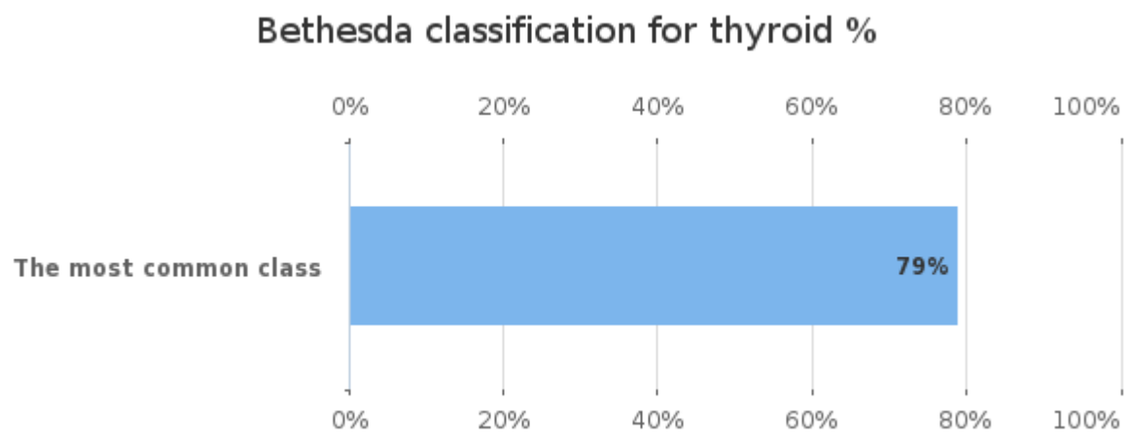


Specific diagnosis	n
Adenocarcinoma	1
Benign hyperplasia or metaplasia	2
Benign neoplasm, specify in comments	15
Insufficient material for diagnosis	1
Other benign change, specify in comments	4
Other malignant neoplasm, specify in comments	19
Secondary tumor/metastasis	2
Squamous cell carcinoma	1
Suspicious for adenocarcinoma	2
Unclear change	5
Total	**52**

Agreement percentage of the responses	%
The most common diagnosis	36.54

Case 6 | Bethesda classification for thyroid

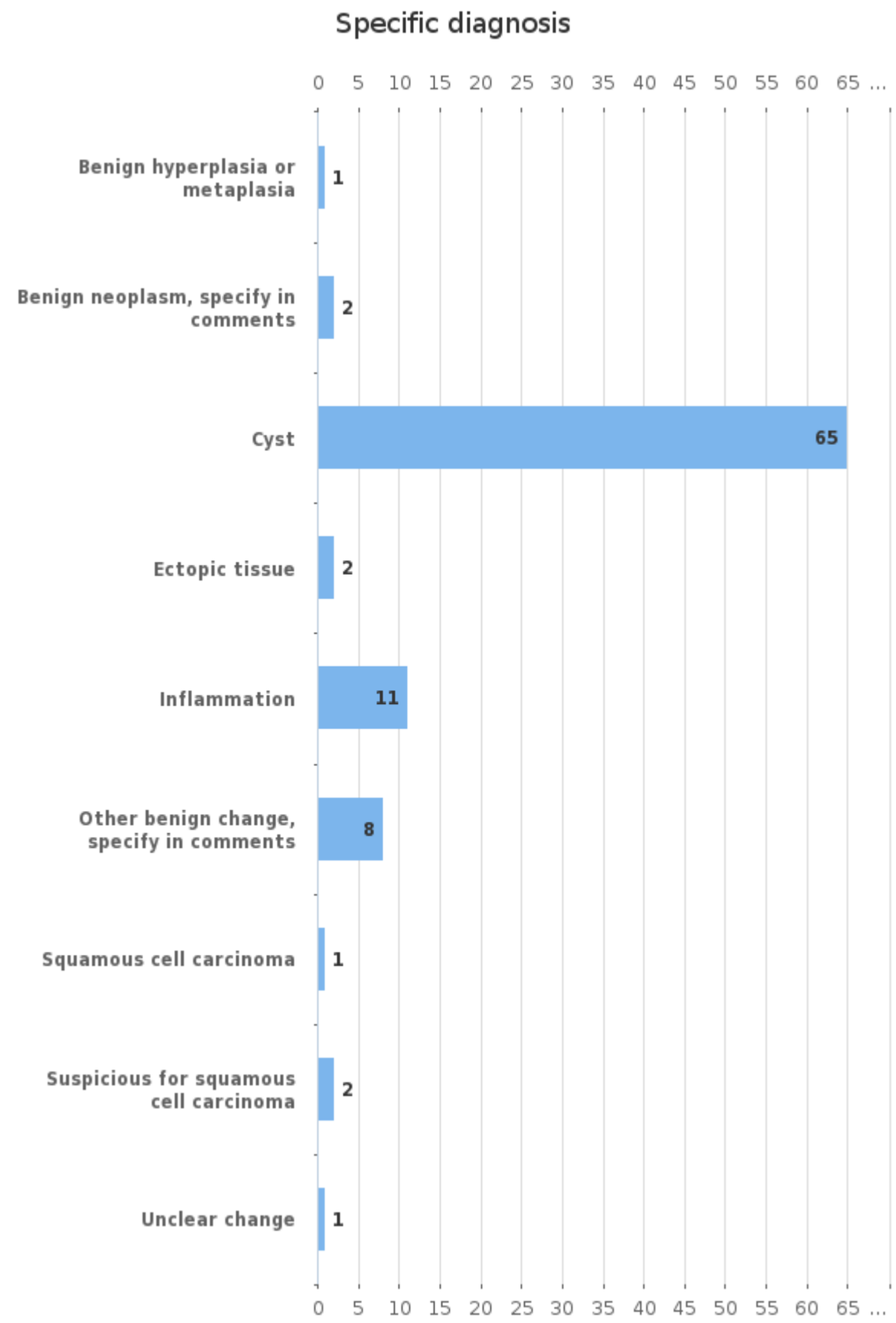


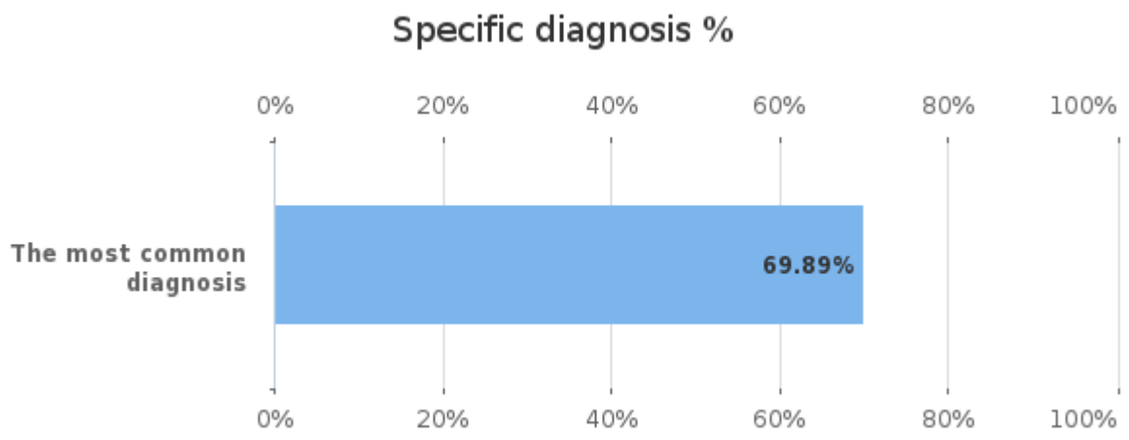


Bethesda classification for thyroid	n
Atypia of undetermined significance or follicular lesion of undetermined significance	7
Benign	79
Malignant	1
Non-diagnostic or unsatisfactory	10
Suspicious for malignancy	3
Total	**100**

Agreement percentage of the responses	%
The most common class	79

Case 6 | Specific diagnosis





Specific diagnosis	n
Benign hyperplasia or metaplasia	1
Benign neoplasm, specify in comments	2
Cyst	65
Ectopic tissue	2
Inflammation	11
Other benign change, specify in comments	8
Squamous cell carcinoma	1
Suspicious for squamous cell carcinoma	2
Unclear change	1
Total	**93**

Agreement percentage of the responses	%
The most common diagnosis	69.89

LABQUALITY

External quality assessment scheme

Clinical cytology: Non-gynaecological cytology Round 1, 2022

Samples S001-S006 (LQ779622011 - LQ779622016) were virtual microscopy slides of alcohol fixed Papanicolaou stained cytocentrifuge preparations or May-Grünwald-Giemsa-stained smears of cytological material from a university hospital. The whole specimen slide had been scanned. In addition, still pictures were provided. There were six cases of which patient's age, sex and all available data of clinical history were given. These specimens were only seen as virtual microscopy images.

Report info
The final report contains distribution of diagnoses and diagnostic agreement. Laboratory's own result is marked with a black radio button (⊙). Common instruction guidelines how to interpret the reports can be found under "LabScala user instructions" in LabScala.

It is important to take into the account that this external quality assessment scheme does not evaluate histopathological or cytological examination as a medical consultation. It is intended for interlaboratory comparison including features that may vary between respondents. In case you have any questions regarding the reports, please contact the EQA coordinator.

Comments - Expert
The distributions of the reported organ specific classifications (Paris, TIS, Bethesda, Milan) (cases 1,3-6), Papanicolaou classes (case 2) and specific diagnoses are presented in tables and graphs. The overall mean agreement was 51.47% for the organ specific classifications, 55.15% for the Papanicolaou classes, and 44.44% for the most common specific diagnoses. Reference interpretations are presented in the tables and comments.

Case 1 (LQ779622011)
84-year-old male with prostate hyperplasia presented with macroscopic hematuriaa. Voided urine sample. Papanicolaou stained cytospin sample.

DX: Atypical urothelial cells (The Paris System for Reporting Urinary Cytology)

There were few atypical urothelial cells with enlarged hyperchromatic nuclei. One month later non-invasive papillary urothelial carcinoma, high grade,was diagnosed from a biopsy sample. Numerous cytological samples contained variable amount of atypical urothelial cells fulfilling the diagnoses of either AUC or suspicious for urothelial carcinoma.

The accepted Paris System categories (atypical urothelial cells, suspicious for high grade urothelial carcinoma and cytological high-grade urothelial carcinoma) were answered by 98 (92.4%) participants (atypical urothelial cells n=23, 21.7%, suspicious for high grade urothelial carcinoma n=38, 35.8%, cytological high-grade urothelial carcinoma n=37, 34.0%). The accepted specific diagnoses were suspicious for urothelial carcinoma (n=28, 41.79%) and urothelial carcinoma (n=28, 41.79%).

Case 2 (LQ779622012)
50-year-old male with subcutaneous lesion in left cheek. Lymphoma diagnosed in past. Clinically atheroma. FNA is taken. On FNA procedure seems very firm. Is it malignant? Papanicolaou stained cytospin sample.

2022-11-09

Final report

Product number: 6702
LQ779622011-016/FI

Subcontracting: Sample preparation, Digital image services

Items sent	2022-10-04
Round closed	2022-10-25
Final report	2022-11-09

Request for corrections
Typing errors on laboratory's result forms are the laboratory's responsibility. Labquality accepts responsibility only for result processing.
Requests must be notified by writing within three weeks from the date of this letter.

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FINAS
Finnish Accreditation Service
PT02 (EN ISO/IEC 17043)

Quality Management LQ ISO 9001

DX: Reactive changes, possibly atheroma, clinical correlation is recommended/Pap Class 2

The sample is relatively cellular with lower number of inflammatory cells, fat cells, epithelioid cells and squamous cells. The original report noted on a possibility of inflamed atheroma. Despite of lymphoma history, there are no signs of lymphoproliferative disease. The surgical excision and histological verification were recommended due to lower sensitivity and specificity of FNA in subcutaneous lesions. The atheroma diagnosis was given in the histological sample.

The accepted Pap Classes were Pap Class 2 (benign atypia) answered by 64 (66.67%) participants. Pap Class 3 (14 (14.6%) participants) is also accepted as surgical resection required lesions may be locally categorized as Pap Class 3. The accepted specific diagnoses are cyst (n=26), benign tumor, specify in comments (n=4) and other benign findings, specify in comments (n=7). Unfortunately, atheroma diagnosis was not listed, but 41 participants have listed atheroma/epidermal cyst in their comments.

Case 3 (LQ779622013)
74-year-old male presented with right sided pleural effusion of approx. volume of one litre. Effusion liquid was darkish yellow. Aspirated liquid was sent for cytological evaluation. Papanicolaou stained cytospin sample and MGG stained air-dried smear.

DX: Suspicious for malignancy (TIS)

The specimen contained lymphocyte-dominant inflammatory infiltrate with sparse eosinophils. There were reactive mesothelial cells and some cytoplasm-rich atypical cells. Morphological findings were sparse, but suspicious for adenocarcinoma. Cell block was hypocellular. Immunohistochemically, atypical cells were TTF-1 and BerEP4 positive with some cytokeratin 5/6 positive and calretinin negative mesothelial cells on background. Bronchial washing sample, EBUS-sample and following pleura effusion sample were diagnosed as pulmonary adenocarcinoma.

The accepted TIS categories (suspicious for malignancy and malignant – secondary) were answered by 76 (77.6%) participants (malignant - secondary n=43, 43.9%, suspicious for malignancy n=33, 33.7%). The accepted specific diagnoses were as follows: adenocarcinoma (n=34), suspicious for adenocarcinoma (n=18), secondary tumor/metastasis (n=3).

The case was presented as case 1 last year (2021). The answers were as follows: The accepted TIS categories (suspicious for malignancy and malignant – secondary) were answered by 74 (70.5%) participants (malignant - secondary n=46, 43.8%, suspicious for malignancy n=28, 26.7%). Accepted specific diagnoses were as follows: adenocarcinoma (n=42), suspicious for adenocarcinoma (n=25), secondary tumor/metastasis (n=2). Correlate your answers from both rounds.

Case 4 (LQ779622014)
56-year-old male with hypertension and type 2 diabetes and 41-smoking-year history. Both sided neck nodules were researched. Both parotid glands presented with cystic lesions. Previous FNA was insufficient. New FNA was taken from left parotid gland. Papanicolaou stained cytospin sample.

DX: Neoplasm - Benign (The Milan System for Reporting Salivary Gland Cytopathology)/ Warthin´s tumor /specific diagnosis)

Comments: There is neutrophil rich infiltrate with debris in the cytospin sample. There are intermingled single oncocytes there too. Cell block was made, and it contained two papillae with oncocyte rim and lymphatic core. The findings were consistent with inflamed/abscessed Warthin´s tumor. In a surgical specimen, cystically degenerated inflamed/abscessed Warthin´s tumor was diagnosed.

The accepted diagnostic category according to The Milan System for Reporting Salivary Gland Cytopathology was Neoplasm – Benign answered only by 2 (2%) participants. In addition, non-diagnostic sample (n=25, 25.3%) and atypia of undetermined significance (n=5, 5.1%) are accepted as they lead to repeated sample. The accepted specific diagnoses were as follows: benign tumor, specify in comments (n=5), insufficient sample (n=5), nonrepresentative sample (n=1) and unclear change (n=1). In comments, there were 20 Warthin´s tumor diagnoses suggestions.

Case 5 (LQ779622015)
77-year-old polymorbid woman with renal insufficiency, Ca-level and PTH level were both increased. Right thyroid lobe with 2.5 cm nodule. FNA from a nodule. Papanicolaou stained cytospin sample.

What antibodies do you want to apply to cell block? (Please add your answer to the comment field)
Thyroglobulin
TTF-1
Calcitonin
Parathormone
Mitochondrial marker
Ki-67

DX: Follicular Neoplasm or Suspicious for Follicular Neoplasm (The Bethesda System for Reporting Thyroid Cytopathology)

Specimen is very cellular with oncocytic cytoplasm-rich cells in small groups, microfollicular, trabecular as well as diffuse growth pattern. The nuclei are enlarged, hyperchromatic with size and shape variability. TTF-1 positivity in cell block approved thyroid gland origin. p53 was positive partially, but calcitonin, thyroglobulin and mitochondrial marker were negative. Ki-67 was low. The findings were consistent with oncocytic follicular neoplasm. Histologically, oncocytic carcinoma was diagnosed after surgical removal.

The accepted answer according to The Bethesda System for Reporting Thyroid Cytopathology is Follicular Neoplasm or Suspicious for Follicular Neoplasm answered by 45 (43.7%) participants. Atypia of Undetermined Significance or Follicular Lesion of Undetermined Significance (n=20, 19,4%) category is also accepted. The accepted specific diagnoses were as follows: benign tumor, specify in comments (n=15) and malignant tumor, specify in comments (n=19).

Immunohistochemical stainings were asked as follows:

Thyroglobulin	10 participants
TTF-1	14 participants
Calcitonin	13 participants
Parathormon	17 participants
Mitochnodrial marker	4 participants
Ki-67	3 participants

In this kind of setting, the thyroid gland origin is needed to be approved and medullary carcinoma and parathyroid lesions must be excluded immunohistochemically.

Case 6 (LQ779622016)
34-year-old female presented with thyroid nodule at isthmus and left lobe border. Previous FNA at private laboratory was signed out as squamous cell tumor. Now ultrasound evaluation of painful 10 mm mass inside thyroid gland. Skin is normal. Mass is emptied with needle. Is it squamous cell lesion? Infection? Papanicolaou stained cytospin sample.

DX: Morphologic description only (with clinical correlation recommendation)/AUS/FLUS – Benign in The Bethesda System for Reporting Thyroid Cytopathology

Cytology sample contained squamous cell epithelium without atypia, numerous lymphocytes and neutrophils as well as cyst debris material. Findings were consistent with squamous cell layered cystic lesion with mild atypia. Cell block was acellular. The original diagnosis was only descriptive without Bethesda category. Bethesda system is recommended not to be used in non-thyroid lesions. Bethesda category AUS/FLUS may be an option.

Histologically, benign squamous cell cyst was found. No malignancy. Squamous cell lesions are rare in the thyroid gland. Secondary tumor should be always excluded. Primary squamous cell tumors are rare. Squamous cell epithelium may be metaplastic or medial cyst related. Histologically verification is recommended, and malignancy possibility should be excluded.

Bethesda category AUS/FLUS was answered only by 7 (7%) respondents. Non-diagnostic or insufficient sample was also acceptable answer (n=3, 3%) as it requires follow up. Bethesda Benign category (n=79, 79%) requires 6 groups of at least 10 follicular epithelial cells in each, but also squamous epithelial cells if rich and without atypia can be graded as benign if clinical correlation is performed. Accepted specific diagnoses were cyst (n=65), benign hyperplasia or metaplasia (n=1), uncertain findings (n=1) and other findings (n=8).

The case was presented as case 4 last year (2021). The answers were as follows: Bethesda category AUS/FLUS was answered only by 4 (3.6%) respondents. Non-diagnostic or insufficient sample was also acceptable answer (n=24, 21.8%) as it requires follow up. Bethesda Benign category (n=79, 71.8%) requires 6 groups of at least 10 follicular epithelial cells in each, but also squamous epithelial cells if rich and without atypia can be graded as benign if clinical correlation is performed. Accepted specific diagnoses were cyst (n=54), benign hyperplasia or metaplasia (n=5), insufficient sample (n=5), uncertain findings (n=2) and other findings (n=13). Correlate your answers from both rounds.

End of report