



Capacities of Anatomic Pathology Services in the Middle East and North Africa

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BACKGROUND AND AIMS Whether the capacities of anatomic pathology services in the Middle East and North Africa (MENA) are keeping pace with developments in molecular pathology remains unclear, so we aimed to assess the capacities of these services.

METHOD We developed a 64-item, English-language, structured, self-administered questionnaire to assess the capacities of anatomic pathology services. The items were related to services, quality control, research, and disruptions due to the COVID-19 pandemic. We recruited two experts to validate the content of the questionnaire. We then identified pathologists practicing in MENA—from membership lists, social media groups, personal contacts, literature searching, and snowball sampling—and electronically distributed the questionnaire during the last and first week of October and November 2020, respectively.

Table 1. Diagnostic modalities available in N = 161 services.

Modality	Available, n (%)
Frozen sections	94 (58.4)
Gynecologic cytopathology	125 (77.6)
Nongynecologic cytopathology	155 (96.3)
Cell blocks (cytopathology)	118 (75.2)
Postmortem examinations	40 (24.8)
Special staining	153 (95.0)
Immunohistochemistry	122 (75.8)
Electron microscopy	21 (13.0)
Immunofluorescence	47 (29.2)
In situ hybridization	30 (18.6)
Flow cytometry	19 (11.8)
Tissue-based PCR	28 (17.4)
Next-generation sequencing	8 (5.0)
Sanger sequencing	6 (3.7)
Pyrosequencing	3 (1.9)
NanoString	1 (0.6)

RESULTS We received data, from 248 respondents, on 161 services in 20 out of the 25 countries targeted. The services were staffed by an estimated total of 2,301 consultant pathologists and pathologists-in-training. Of 161 services, 155 (96.3%) processed routine specimens and 148 (91.9%) processed large surgical resection specimens, for an estimated total of 1.2 million specimens a year. The diagnostic modalities available in the 161 services are outlined in Table 1. Overall, 122 services (75.8%) performed formal quality control, 116 (72.0%) used standardized reporting datasets, 156 (96.9%) used the TNM staging system, 109 (67.7%) participated in research, and 27 (16.8%) operated a biobanking facility. The majority of services (n = 147, 91.3%) were disrupted by the COVID-19 pandemic to at least a small extent (see Table 2 for causes) and 124 (77.0%) reported a decrease in workload.

CONCLUSIONS The capacities of the vast majority of anatomic pathology services in MENA have not kept pace with developments in molecular pathology, and some services lack even basic diagnostic modalities. The COVID-19 pandemic has exacerbated many of the challenges that services in MENA face.

Table 2. Causes of disruptions reported by N = 161 services.

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Cause	Reported, n (%)
Suspended outpatient services	92 (57.1)
Suspended screening programs	49 (30.4)
Postponed surgeries and elective procedures	123 (76.4)
Rotating schedule for staff members	62 (38.5)
Unavailability of equipment and consumables	30 (18.6)
Budget cuts in laboratory funding	25 (15.5)

