BMJ

Strengthening health systems and preparing for pandemics in Ukraine through clinical decision support and online learning

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Introduction

Strong and resilient health systems can help countries better detect and respond to infectious diseases and prevent outbreaks from becoming pandemics.

To improve the capacity of healthcare professionals, BMJ's Clinical Decision Support Training Initiative launched in Ukraine in 2016. It equips frontline and primary care doctors with BMJ's evidence-based resources, BMJ Best Practice (a clinical decision support tool) and BMJ Learning (a multimedia learning platform), to improve their ability to effectively detect, diagnose and manage infectious and non-communicable diseases.

Objectives

1. Train frontline and primary care doctors to use BMJ's resources to support their clinical decisions and improve their medical knowledge

2. Strengthen the continuing medical education (CME) systems in-country and accredit BMJ's resources

3. Integrate the programme within the healthcare infrastructure to ensure the sustainability of the programme

Methodology

We collected quantitative and qualitative data of clinicians' engagement with BMJ Best Practice and BMJ Learning over the three years to assess the impact of the resources in clinical practice and CME.
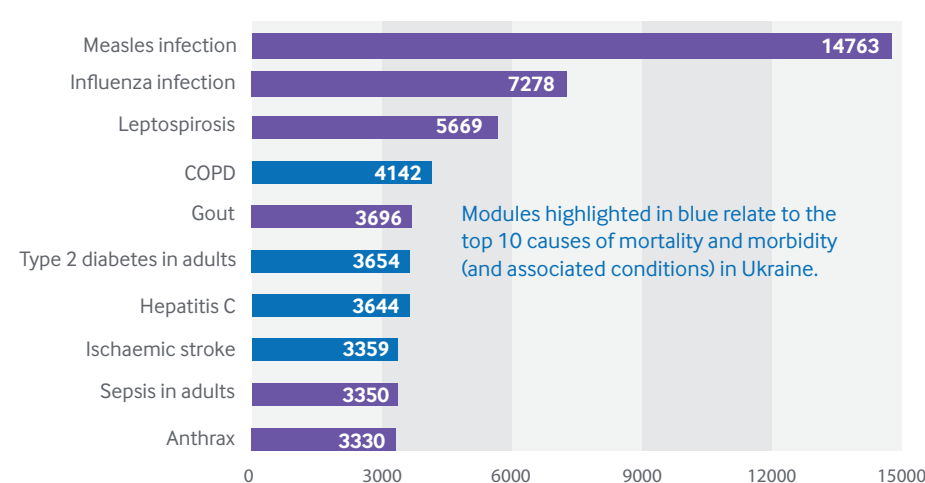
Results | 2016-2019

- 8,728 doctors enrolled
- 509 participating institutions
- July 2017 - Ministry of Health formally endorsed BMJ as a provider of CME
- March 2018-Government of Ukraine established a system for CME that requires doctors to gain 250 credits over five years
- March 2019-BMJ and the Ministry of Health of Ukraine announced a new agreement to continue supporting the programme for 4,000 primary healthcare physicians

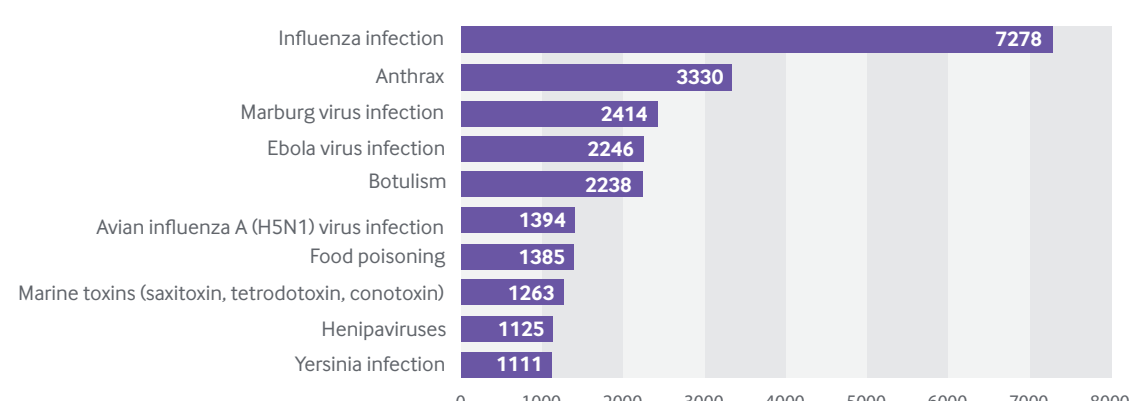## Quantitative analysis:

BMJ Best Practice

- 330,056 BMJ Best Practice topic views, including 31,912 on select agents
- 96% of doctors said BMJ's resources helped them improve patient care

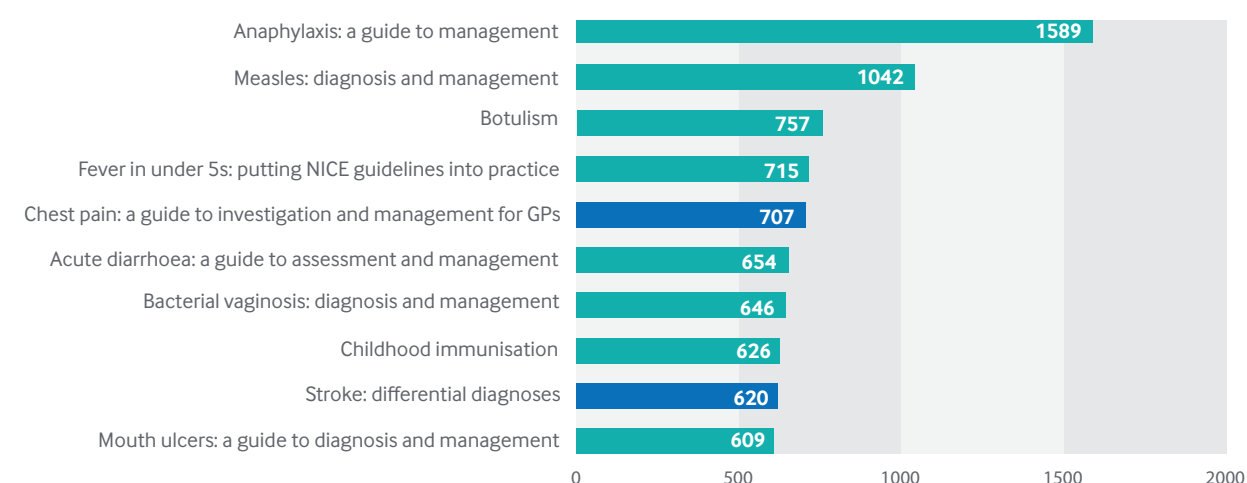**Top 10 topics viewed on BMJ Best Practice (all conditions)**

Topic	Views
Measles infection	14763
Influenza infection	7278
Leptospirosis	5669
COPD	4142
Gout	3696
Type 2 diabetes in adults	3654
Hepatitis C	3644
Ischaemic stroke	3359
Sepsis in adults	3350
Anthrax	3330

Modules highlighted in blue relate to the top 10 causes of mortality and morbidity (and associated conditions) in Ukraine.

Top 10 topics viewed on BMJ Best Practice (select agents)

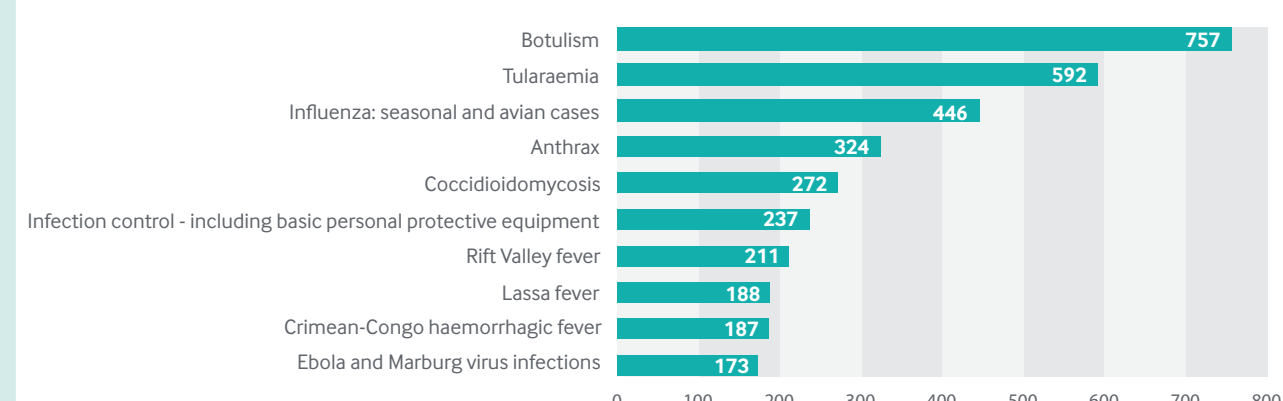| Topic	Views
Influenza infection	7278
Anthrax	3330
Marburg virus infection	2414
Ebola virus infection	2246
Botulism	2238
Avian influenza A (H5N1) virus infection	1394
Food poisoning	1385
Marine toxins (saxitoxin, tetrodotoxin, conotoxin)	1263
Henipaviruses	1125
Yersinia infection	1111

BMJ Learning

- 44,101 modules completed including 5,056 on select agents
- An average 37% improvement in pre-test vs post-test scores, with average scores rising from 49% to 86%

Top 10 modules completed in BMJ Learning (all conditions)

Module	Completed
Anaphylaxis: a guide to management	1589
Measles: diagnosis and management	1042
Botulism	757
Fever in under 5s: putting NICE guidelines into practice	715
Chest pain: a guide to investigation and management for GPs	707
Acute diarrhoea: a guide to assessment and management	654
Bacterial vaginosis: diagnosis and management	646
Childhood immunisation	626
Stroke: differential diagnoses	620
Mouth ulcers: a guide to diagnosis and management	609

Top 10 modules completed in BMJ Learning (select agents)

Module	Completed
Botulism	757
Tularaemia	592
Influenza: seasonal and avian cases	446
Anthrax	324
Coccidioidomycosis	272
Infection control - including basic personal protective equipment	237
Rift Valley fever	211
Lassa fever	188
Crimean-Congo haemorrhagic fever	187
Ebola and Marburg virus infections	173

Qualitative feedback

Qualitative analysis suggests that BMJ's resources have supported doctors to:

- Improve the diagnosis and management of infectious diseases
- Engage in CME
- Provide evidence-based information to their patients
- Alter their screening and prescribing practices

"I have referred to the 'Management of chronic hepatitis B infection' topic and thanks to the clear information, ongoing management of my patients has become more straightforward. Hepatitis B and C cases are not always diagnosed, referred or reported correctly in Ukraine. BMJ Learning will help doctors address these shortcomings."

Dr Larissa Bredneva

Dr Linnikov Svyatoslav has used BMJ's resources to overcome vaccine hesitancy. "If the information was put forward by a pharmaceutical company, then people may be more hesitant to believe it. But because the research is from BMJ, people trust it."

Dr Linnikov Svyatoslav

Conclusions/lessons learned

- Online learning and clinical decision support are useful resources to support healthcare professionals in improving diagnosis and management of diseases
- Content that is accessible (translated, simple, available offline etc) is key for engagement, access and sustainment
- Strengthening CME systems important
- Discuss sustainability plans from the start of the programme

Contact information

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