

# Video As An Effective Knowledge Transfer Tool to Increase Awareness Among Health Workers and Better Manage Dengue Fever Cases.

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## Short report

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# Abstract

**Background context.** For a patient with dengue fever, a wrong diagnosis can be fatal. Very few Burkinabé health workers are properly trained to diagnose and treat cases of dengue fever. Recent outbreaks of dengue fever in Burkina Faso, which is also carrying a significant malaria burden, have made updating health workers' knowledge an urgent matter.

**Method.** Following a trial to determine the most appropriate format, a video was specially developed as a knowledge translation tool to update health workers' knowledge. We posted a training video online for front-line medical staff. In four months, it was viewed by 2,993 people. We conducted a qualitative evaluation using the theory of planned behaviour. Twenty interviews were conducted with health professionals who had viewed the video. A content analysis was performed.

**Results.** The use of the knowledge contained in the video was mainly influenced by the fact that its format was adapted to the target audience, that it presented specific and concise information, that it conveyed a relevant message in everyday language, and that the context was one of urgency.

**Conclusion.** The development of video as a knowledge translation tool is an effective and efficient way to update health workers' knowledge and influence their practices. Users received the video enthusiastically because of the epidemic context.

## Introduction

A viral disease transmitted to humans by mosquitoes of the genus *Aedes*, the dengue virus is rampant in tropical and subtropical regions. Over the past two decades, the average annual number of cases of dengue haemorrhagic fever has risen dramatically [1], with a sixfold increase in incidence from 1990 to 2013 [2]. Unfortunately, many cases of dengue fever continue to be misdiagnosed and improperly treated [3]. Dengue fever is often confused with malaria because the symptoms of the two diseases are similar, sometimes leading to misdiagnosis with potentially fatal outcomes.

Located in West Africa, Burkina Faso experienced a dengue epidemic in 2013 [4] and a new outbreak in 2016 [5, 6]. Studies in Burkina Faso have shown that health workers lack knowledge about dengue fever and that few have received training on non-malaria febrile diseases (7,8). There is an urgent need to raise awareness and improve knowledge in Burkina Faso about the management of non-malaria febrile diseases [7].

## Approach

In 2016–2017, an experiment was conducted to evaluate video as a tool for transferring knowledge on dengue fever in Burkina Faso [9]. The aim of the study was to determine which narrative genre (journalistic, dramatization, or computer graphics animation) was most effective in transmitting knowledge about dengue fever to health professionals. The goal was to influence their practice so that

dengue fever cases could be better diagnosed and treated. This study identified which narrative elements (audio and visual) fostered knowledge transmission and retention. The research led to the production of a video based on this evidence. It was posted on a website in October 2017, and a link to this site was sent by the Ministry of Health to all health workers in the country. In four months, the video was viewed by 2,993 people, 910 of whom viewed it in its entirety. Users were invited to provide their contact details for a qualitative evaluation interview. The objective was to learn what influence such a video had on their practice. The tool developed by Boyko [10] based on the theory of planned behaviour inspired the development of the qualitative interview guide to understand a) attitudes, b) subjective norms, and c) perceptions of control over behaviour. Twenty respondents were contacted, and interviews lasting 20 to 40 minutes were conducted by telephone and recorded. These audio files were imported into the qualitative data processing software NVivo 10© and partially transcribed. The comments collected were analyzed using a thematic analysis method that made it possible to identify, group, and structure all the themes addressed in the statements [11].

## Results

### *Attitude*

The reception given to the video by the participants was unanimously positive. They experienced a sense of satisfaction and even elation after viewing it. The video was appreciated for the learning it provided. Not only did it meet a need for information, but it also standardized the front-line medical approach. The video transmitted specific and concise information that increased their knowledge and understanding of dengue fever.

“I can say the video is short and specific; the key points are made briefly, so it can be viewed without losing too much time, and without becoming impatient and abandoning it.” (Midwife)

The positive assessment of the video was also based on the relevance of the message, which was considered essential given the dengue fever outbreaks. It was greatly appreciated that the video was in French and clarified the terminology in current use.

“We ourselves, the health workers, tended to say ‘*palu-dingue*’ [malaria-dengue]. So it was really useful for changing that, and now I, too, correct anyone who says *palu-dingue*.” (Midwife)

Respondents’ attitudes were also strongly influenced by the epidemic context. Health workers had been worried since the 2013 dengue epidemic. The video could serve as a tool for raising awareness or alerting the medical community. Some reported having witnessed fatal cases of dengue fever, which made the epidemic all the more tangible and the desire to fight it more personal.

“The video was welcome. I received the video when dengue fever was at a very high level at the CMA [satellite medical centre] in Nouna. There were cases every day.” (Nurse)

The lessons learned, the summary format, the relevance of the message, as well as the epidemic context thus appeared to make respondents receptive to integrating the video's content into their practice.

### ***Subjective norms***

Subjective norms suggest the social environment can influence the individual's behaviour and intention to act. Respondents expressed a strong sense of belonging to the health professional community by systematically sharing the video they had viewed through social networks, to encourage others to integrate this knowledge as well.

"Dengue fever is a disease of global concern. It was important for everyone to learn what this disease is, and if there are ways [to cope with it], for everyone to adopt them for protection. It was with this in mind that I received the link and wanted to share it with my colleagues so everyone could become aware."  
(Pharmacist)

The respondents did not view the reactions of their colleagues and superiors as hindering the use of the knowledge, as they were confident those reactions would be positive.

### ***Perception of control over one's behaviour***

Health workers' perceptions of how much control they had over their behaviour influenced their intention to act. Respondents working in clinics all emphasized the healthcare provider's autonomy. In their view, there was no restriction on applying scientific data, as long as those data were considered credible, which was the case here.

"The staff member is quite autonomous; he doesn't need third-party authorization to be able to diagnose, because he's the one in charge, so there's nothing to worry about." (District medical officer)

It should be noted that half the respondents indicated that the information in the video was in line with Ministry of Health guidelines, which reinforced its integration into their practice. However, only three of those respondents treated patients directly. The rest were in management positions, and it was to be expected that they would be more aware of national guidelines. The other half of respondents deplored the lack of information on dengue fever and its treatment. The video was likely to change practices:

"If things go well with the Ministry of Health, there's no problem putting this into practice. But this year, we're not really informed about dengue fever. That's what's making it difficult to manage dengue."  
(Midwife)

"I think what's in the video doesn't contradict the directives we were given. It just reinforces what was issued by the Department of Diseases, so in my view, there shouldn't be any problem as long as it complies with the national directives." (Manager, evaluation follow-up)

The healthcare providers thus had the autonomy required to integrate new knowledge into their practice and affirmed that they had full control over what they did in consultations.

# Conclusions

Given the epidemic context, users welcomed the video enthusiastically. As recommended [12], the video was developed based on evidence to serve the training needs of health professionals in Burkina Faso, with a view to influencing their practice and increasing the number of cases of dengue fever diagnosed. Their intention to use the knowledge in the video was fostered by their positive attitude towards it. This attitude was mainly influenced by the fact that the video presented specific and concise information, transmitted a relevant message in everyday language, and responded to the crisis context. Subjective norms did not appear to play a significant role in the intention to use knowledge, while their perception of control over their own behaviour was affected by the national dengue fever management guidelines; however, these guidelines were unknown to half the respondents. In such a context, video is an effective and efficient knowledge transfer tool to update health workers' knowledge and influence their practices.

# Declarations

## Ethic approval and consent to participate

This study was approved by the health research ethics committees of the Government of Burkina Faso (decision no. 2015/10/06) and of the University of Montreal Hospital Research Centre (decision no. 15-190).

The consent of the participants was obtained orally

## Consent for publication

Not applicable

## Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author, Professor Christian Dagenais: [christian.dagenais@umontreal.ca](mailto:christian.dagenais@umontreal.ca) , on reasonable request.

## Competing interests

The authors declare that they have no competing interests.

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## Authors' contributions

CD conducted the research and investigation process. He prepared and wrote the manuscript.

CH contributed to the collection and analysis of data and the revision of the different versions of the manuscript

VR participated in the formulation of the project, to the revision of the different versions of the manuscript. He participated in obtaining financial support for the project

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