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Digital Transformation in Indonesian FDA (Food and Drug Authority)

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ABSTRACT

The Indonesian Food and Drug Authority (FDA) or BPOM has an essential role in enhancing domestic pharmaceutical, traditional medicine, health supplements, cosmetics, and food industry competitiveness. The Indonesian FDA has implemented drug and food supervision to accelerate the achievement of SDG 16: build effective, accountable, and inclusive institutions at all levels by taking advantage of emerging technological developments to innovate public services. Digital transformation is key to accelerating SDGs in customer experience, operations, employee experience, business model, and digital platform. This study aimed to assess the digital maturity of the Indonesian FDA and provide the business solution on how the Indonesian FDA goes digital into a smart government. The results are expected to assist the organization in analyzing, properly structuring, and understanding the nature of the problem to be addressed, facilitating the creation of short and long-term goals and plans, providing a foundation to assist organizations in assessing realistically where they are in their transformation journey, and making investments in transformation projects more effective. The business solution is also expected to support and give insightful thoughts in digital innovation and acceleration to achieve Indonesia's Digital Transformation.

Keywords: BPOM, Digital Maturity**,** Digital Transformation, E-Government, Indonesian FDA

JEL Classification: I18, M15, O38

INTRODUCTION

Domestic drug and food industry competitiveness, global pandemic resilience are some challenges in Drug and Food control. The rapid growth of information technology creates a powerful online drug and food market that must be controlled. Drug and Food Control needs to be optimized by controlling the safety, quality, and efficacy of medicines and food throughout the product life cycle, an integral part of the chain that cannot be separated. The data obtained from the evaluation results of distribution permits (pre-market), especially those that indicate risk, become input for post-market supervision and vice versa. This cycle starts from prevention (standardization, licensing, certification, coaching to business actors), post-market supervision, to follow-up on the supervision results in the form of coaching, administrative sanctions, or prosecution. This whole cycle is continuous to ensure the production, distribution, consumption of drugs and food that are safe, quality, and productive to create a healthy Indonesian society while also strengthening the drug and food industry. In line with the Indonesian FDA's vision, the Indonesian FDA also empowers MSMEs, especially in traditional medicine, cosmetics, and the food industry.

Along with the rapid development of information and communication technology, the Indonesian FDA began to integrate transformation initiatives into a more modern context by implementing digitalization aspects in the Indonesian FDA bureaucratic reform program since 2015. Indonesian FDA's digital transformation was put forward to realize citizen-centric (citizen-centric) service improvements; improve the efficiency of business processes and operations; improve service quality through digitization; build a data-driven organization for more efficient policy formulation; encourage a collaborative and digitized work culture; as well as increasing collaboration with other Ministries and Institutions, to enhance Indonesian FDA's reputation as a modern world-class institution.

Digital transformation is broader than just changing services to online but integrating all service areas to produce changes in business processes and create "value" that gives satisfaction to service users. The United Nations, through the '"E-Government Survey 2020' has released the level of adoption of the e-government system by various countries. In the report, Indonesia ranks with the E-Government Development Index (EGDI) level at 88th out of 193 countries. This report shows that digitalization in providing services still needs to be further improved and becomes an important thing. Implementing the E-Government Development Index (EGDI) has become a concern for all countries. Indonesia is also still lagging when compared to other ASEAN countries. The E-Government Development Index (EGDI) is measured by considering several components: the coverage and quality of digital government services, the status of digital infrastructure development, and human resources skills in operating e-government services.

The Indonesian government developed E-Government Development Index (EGDI) into Sistem Pemerintahan Berbasis Elektronik (SPBE) or Electronic-Based Government Systems maturity model to determine the maturity levels of Indonesia’s ministries, institutions, and regional governments. SPBE Index, according to the electronic-based government system based on Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE), has become one of the Indonesian FDA's KPI. SPBE assessment covers information and communication technology (ICT) audits, focusing on ICT applications, infrastructure, and security where the standards must comply with established standards. Still, SPBE becomes a parameter for assessing the level of maturity of the entire system in the organization. Indonesian FDA's services domain based on SPBE Framework is depicted in Figure 1.

Based on the Ministry of Administrative and Bureaucratic Reform (Kemenpan RB) assessment, the SPBE index of the Indonesian FDA in 2019 was 3.68 with excellent criteria (the 2018 SPBE index was 2.44 with sufficient criteria). Indonesian FDA's digital transformation journey (Figure 2) from 2010 until now has been in the process of digitization, digitization to digital transformation. Although many Indonesian FDA public services are already online, from the SPBE assessment by the Kemenpan RB, there is still a need for improvement. Based on the Ministry of Administrative and Bureaucratic Reform assessment results, aspects of the ICT Domain still need to be improved, namely Data Center Operation, Application System Integration, and Use of Shared Common Applications.

Figure 1. Existing Condition of Indonesian FDA's Services

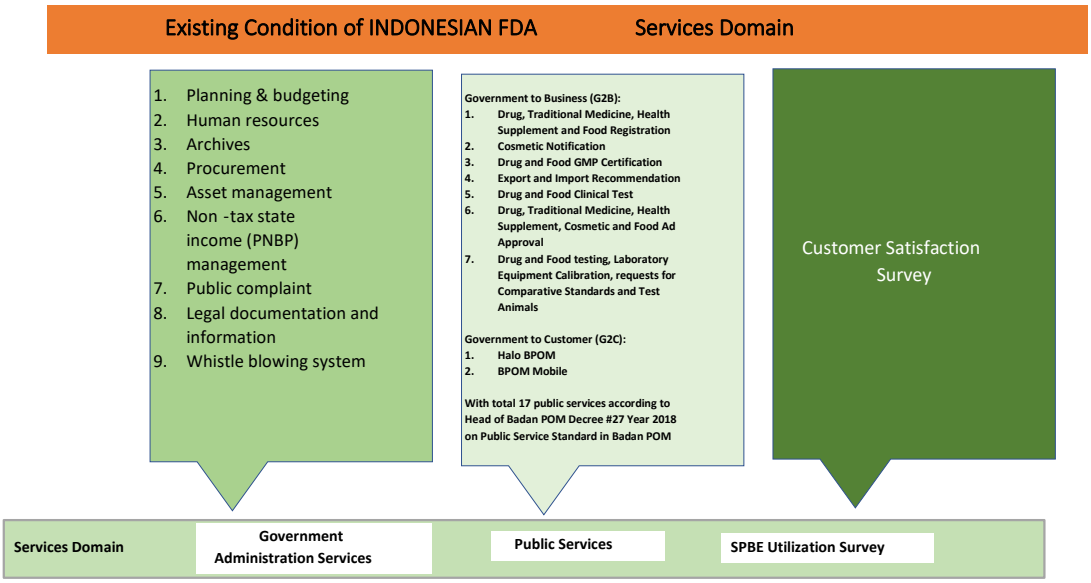

Figure 2. Indonesian FDA's Digital Transformation Journey

Digital Transformation		• Food and Drug registration improvement • BPOM Mobile	• Drug and Food Registration (Pre - market) on progress • Online presence • Planning & budgeting (coordinating with Ministry of Finance and
Digitalization	• Human resources • Cosmetic Notification • Drug, Traditional Medicine, Health Supplement and Food Registration • Export and Import Recommendation • Drug and Food testing • Procurement • Asset management • Non-tax state income(PNBP) management • Public complaint • Legal documentation and information • Drug and Food Surveillance Report	• Drug and Food GMP Certification • Drug and Food Clinical Test • Halo BPOM • Whistle blowing system • Drug, Traditional Medicine, Health Supplement, Cosmetic and Food Ad Approval • Planning & budgeting	• Laboratory Equipment Calibration, requests for Comparative Standards and Test Animals • Food and Drug Safety Information including to MSMEs
Digitization	Archives		
	2010 – 2015	**2016 – 2019**	**2020 - Now**

Today's challenges facing public services are becoming more demanding and complex and coupled with the Covid-19 pandemic. There needs to be a breakthrough and innovative policies to overcome problems while still being oriented to the best public services provided to the community. Decisions and policies primarily related to digitalization must firmly impact the creation of people's welfare.

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LITERATURE REVIEW

Digital Transformation

There are numerous definitions of digital transformation provided by academics, government officials, and business experts. As follows, some of them have well explained and defined the term "digital transformation" (Verina & Titko, 2019):

- The convergence of advanced technologies, the integration of physical and digital systems, the dominance of innovative business models and new processes, and intelligent products and services characterize digital transformation. (European Commission, 2019).
- The economic and societal effects of digitization and digitalization are referred to as digital transformation. Digitization is converting analog data and processes into a machine-readable format. Digitalization uses digital technologies and data and their interconnection, resulting in new or altered activities. (EOCD, 2018).
- Digital transformation uses technology to radically improve an organization's performance or reach. In a digitally transformed business, digital technologies enable improved processes, engaged talent, and new business models (Deloitte, 2018).
- Digital transformation requires the organization to deal with change overall, making change a core competency as the enterprise becomes customer-driven end-to-end. Such agility will facilitate ongoing digitization initiatives but should not be confused with them (Bloomberg, 2018).

Why is digital transformation necessary? People want their needs fulfilled at their fingertips in this increasingly instant era. As a public servant, the government is required to continually develop in providing the best service for the convenience of the citizens. As a citizen, you must continuously build your mindset and be responsive to changes for a better life. In addition, today, the world continues to compete to be a pioneer in terms of innovation.

Digital transformation is carried out to provide services that can adapt according to the expectations and needs of the community. For this reason, the government realizes that public services no longer rely solely on the perspective of the bureaucracy but must also pay attention to the interests of the community. This public interest-oriented bureaucracy aligns with the New Public Service paradigm with the principles of prioritizing the public interest, acting democratically, and serving rather than directing.

Digital transformation is an adaptation that the government continues to accelerate its implementation, not least in the public service sector. It aims to provide quality, fast, easy, affordable, and measurable services to the community, especially during the current pandemic. One of the ways to revive the post-pandemic national economy is to improve government business processes through digital government transformation. The adoption of information technology at all levels of government can address the challenges of improving the quality of institutions, governance, and public services. The Covid-19 pandemic situation can be a momentum to accelerate this digital transformation. The pandemic positions the Electronic-Based Government System (SPBE) as the foundation for collaboration with government agencies with four strategies: strengthening SPBE governance, integrating public services, preparing digital technology, and building competent and innovative human resources.

Digital Mastery Framework

George Westerman, Didier Bonnet, and Andrew McAfee's Digital Mastery framework are based on two essential qualities to thrive in digital transformation: digital leadership and digital capacity. The efforts and actions that executives/leaders have undertaken to

transform their companies/organizations' operations are digital capacities. It considers three factors: customer experience, operations, and company model. This capability goes beyond websites and mobile apps to truly transform the customer experience, operational processes (digital technology helps organizations build capabilities that improve efficiency and agility, power new customer engagements, and enable new business models), and new business models, ranging from reconfiguring delivery models to developing new pro forma models. Westerman and Bonnet updated the latest digital capabilities element in 2020. The updated framework emphasizes employee experience and business model innovation, and the digital platform, which powers the other components and, when structured and managed well, enables further innovation.

Leadership capabilities are digital mastery—how executives/leaders are driving change. The only effective way to drive transformation is top-down, with senior solid executive leadership combined with methods involving employees in making the change happen. It examines four elements: transformative digital vision, approach to engagement, digital governance, and technology leadership capabilities. Vision sets the aspirations for the company, but many companies/organizations lack this essential part of driving a transformation—approach to engagement, which is the process of energizing employees to make the vision a reality. Governance provides the guardrails and steering wheel needed to keep the transformation on track. Finally, to drive the transformation forward by leveraging the strong relationships that Digital Masters foster between their IT and business leaders and how these companies/organizations use that relationship to drive change in their internal platforms and digital skills.

Digital Transformation Compass

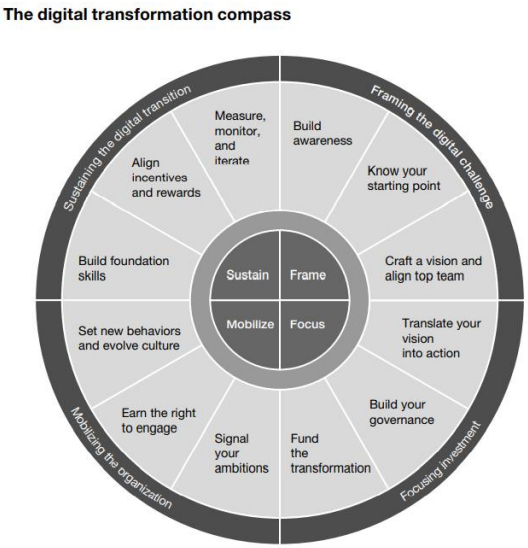
The digital transformation compass was created by Westerman, Bonnet, and McAfee as a framework to assist organizations in digital transformation (Westerman et al., 2014, p. 173). The methodology described in this framework was created based on the experiences and best practices of the 'digital masters.' Large companies in traditional industries that use digital processes to improve their business are digital masters.

The Compass (shown in Figure 3) guides the organization through the steps to be taken, which are classified into four groups, each of which deals with a different aspect of the transformation:

1) FRAME - The first area of digital transformation is framing the digital challenge. It includes activities to build and raise awareness of digital potentials, particularly among company leaders, and how they can convert the AS-IS state into the TO-BE vision.
2) FOCUS - The second area is focusing on investment. It implies that the organization must secure funding and sponsorship for the transformation from appropriate people/sources and that relevant activities and governance must define it.
3) MOBILIZE – Mobilizing the organization entails organizational and cultural change at all levels, involving all employees.
4) SUSTAIN – Sustaining the digital transition deals with staying on top as a digital master.

Each area has three steps that guide the company through the digital transformation process. First, companies/organizations may have already implemented some digital initiatives, and they must determine what they are still missing and focus on completing it.

Figure 3. Digital Transformation Compass (Westerman, 2014)



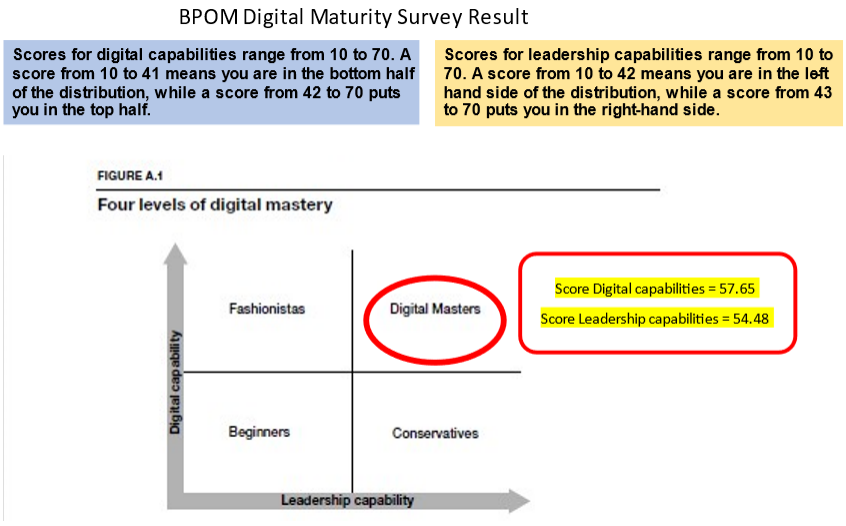
RESEARCH METHOD

The methodology in this study is to use the qualitative approach, which is carried out through an online survey, as well as literature and document studies.

RESULTS

An online survey to assess the Indonesian FDA's digital transformation process and digital maturity was conducted for employees involved in SPBE planning and implementation and bureaucratic reform. The survey results show that the Indonesian FDA is already in the digital master stage (Figure 4). The findings also show a distribution of Indonesian FDA Digital Maturity Survey results; there are still individuals who choose Indonesian FDA at the beginner stage (7%) and Fashionista level (13%) regarding their digital mastery level. This difference may be due to differences in understanding the stages of digitization and the experience of implementing digital transformation among employees (Nasution, R. A.,2020).

Figure 4. Indonesian FDA Digital Maturity Survey Result



The digital transformation compass survey result (Figure 5) shows some aspect or element is at a high level and the other at a medium level, which gives room for improvement.

Figure 5. Indonesian FDA Digital Transformation Compass Survey Result

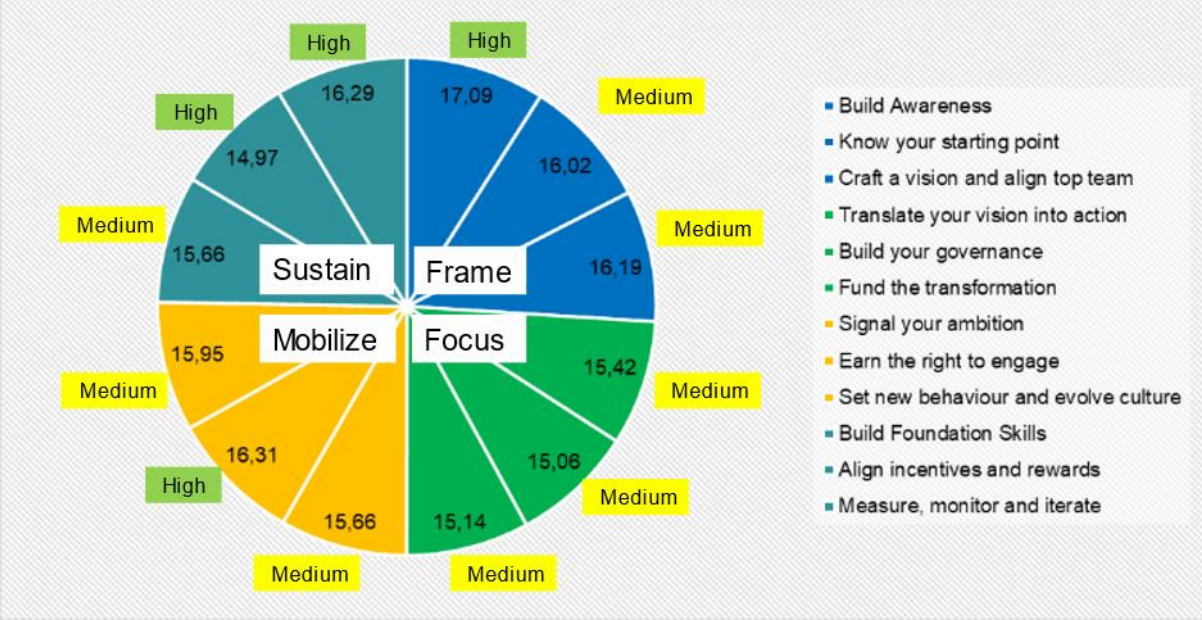


Table 1. Indonesian FDA Digital Transformation Compass Classification

Digital Compass		Classification
Frame	Build Awareness	Indonesian FDA has already understood the digital transformation challenge
	Know your starting point	Indonesian FDA already know where and what the transformation trajectory is
	Craft a vision and align top team	Indonesian FDA need to isolate the root causes of their concerns and work with their team to remedy
Focus	Translate your vision into action	Indonesian FDA should review their digital transformation roadmap and scorecard for content and alignment
	Build your governance	Indonesian FDA should check governance principles and program leadership
	Fund the transformation	Indonesian FDA should ensure that their funding and business case are aligned (fund from government or grant
Mobilize	Signal your ambition	Indonesian FDA should isolate which part is a problem and work with their team to remedy
	Earn the right to engage	Indonesian FDA have built sufficient momentum in the organization
	Set new behavior and evolve culture	Indonesian FDA should isolate which part is a problem and work with their team to remedy
Sustain	Build Foundation Skills	Indonesian FDA has started implementing projects aimed at developing capabilities, but more is needed
	Align incentives and rewards	Indonesian FDA's reward structures are aligned with digital objectives, but there's still room for improvement
	Measure, monitor, and iterate	Indonesian FDA has the necessary KPIs in place

DISCUSSION

Digital masters cultivate two capabilities: digital capability, which enables them to use innovative technologies to improve elements of the business, and leadership capability, which enables them to envision and drive organizational change in systematic and profitable ways. Together, these two capabilities allow a company/organization to transform digital technology into a business advantage. Digital Masters see technology to change the way they do business—their customer engagements, internal operations,

business models, employee experience, and digital platform. As COVID-19 accelerates the shift to digital activity, the Indonesian FDA is carrying out various initiatives for optimal public services in accelerating the handling of COVID-19 in Indonesia, including emergency use authorization (EUA) approval, providing Guidelines for Public Services in the Drug and Food Sector in Conditions of the COVID-19 Pandemic, using an online platform for internal meeting and customer consultation, providing e-Book that can also be accessed through the Indonesian FDA library website, develop biohazard laboratories for COVID-19 test and for employee experience Indonesian FDA develop online attendance application. Indonesian FDA can maximize the resources to adapt.

Gaining a true digital advantage also requires leadership. Top-down leadership means setting direction, building momentum, and ensuring that the organization follows through. Indonesian FDA leaders stayed involved throughout the transformation to make a case for change, drive the change forward, and redirect activities and behaviors against the vision. And they continually looked for ways to extend the vision and move the organization to the next level of digital advantage. All Digital Master find ways to build a clear vision of a radically different future, engage their employees in the goal, foster strong bonds between technical and business people, and steer the course through solid governance.

The current challenge at the Indonesian FDA is that many applications made by each unit are not yet fully integrated, primary data and information are also scattered. Supporting data for drug and food control currently distributed in each Indonesian FDA unit must be aligned appropriately, analyzed, and interpreted to become an essential and meaningful source of information as a basis for policymaking and decision-making for Indonesian FDA leaders. The number of applications recorded at the Indonesian FDA until July 2021 is 270, with the following details being 141 applications from the central unit, 129 applications from regional units. According to Napitupulu, D., & Sensuse, D. I. (2014), Critical Success Factors for e-Government Implementation include strong leadership, good planning, enough funding, good team skills and expertise, good governance, and make better business process.

As a new trend in organizational development, digital transformation alters how work is done from a technological and operational standpoint. The government must adapt to the times to provide better, faster, more efficient, and effective public services. Implementing e-government will suppress fraudulent practices in the bureaucracy, such as illegal levies, bribery, and even corruption, collusion, and nepotism. Methodological frameworks should help guide organizations to transform digitally, and they can be used to make the change right. Change management is a very complex issue in e-government implementation. E-government services are frequently dispersed across multiple IT systems and organizations (Nograšek, J., 2011). Events outside of government cause changes, such as government policies and legislation, public-private partnerships, etc. Finally, there is a lot of resistance to change in government. According to Sacheva S. (2009), there are multiple causes why people resist change in an e-Governance Scenario. A few of them are long implementation cycles, unknown drivers, lack of clarity on vision, top management support, process change, standardization, and interoperability. Another issue is that e-government is primarily viewed as a technological mission rather than organizational transformation. The rapid advancement of digital technologies has fundamentally changed competitive industry dynamics. Organizations must transform their businesses to cope with an increasingly volatile environment and fully capitalize on the opportunities presented by new technologies. Digital transformation initiatives are joint across industries, but they frequently fail due to inert organizational cultures that prevent change (Hartl, E., & Hess, T., 2017).

The Digital Transformation Compass framework demonstrates the relationship between strategy and operational processes and the importance of assessing resource capability in employee skills and motivation to carry out the digital transformation (Furjan, M. T., Strahonja, V., & Tomičić-Pupek, K., 2018). In this research, the author analyzes the digital transformation journey and maturity to frame the digital transformation process of the Indonesian FDA within them to guide them to achieve the goal of increasing their digital maturity. We gained a good perspective on the transformation process by framing the Indonesian FDA's digital transformation by Digital Transformation Compass. The digital transformation compass recognizes the importance of organizational factors such as leaders and cultural influencers.

CONCLUSION

According to the Digital Maturity survey result, the Indonesian FDA is at the Digital Master level, but there is room to increase digital and leadership capabilities. Digital capabilities can improve by transforming customer experience, business model, operations, employee experience, and digital platform. Leadership capabilities can improve by transforming digital vision, governance, and technology leadership. Based on DT Compass, we can see the need for improvement and prepare digital initiatives in:

1) Frame (understanding our position, craft a vision, and align top team),
2) Focus (translate vision into action, suitable governance model, funding models),
3) Mobilize (Marketing Organization Ambition/Vision, set new behavior and evolve culture), and
4) Sustain (build digital foundation capabilities, reward structures aligned with transformation goals).

LIMITATION

This research is limited to time, namely October - November 2021, and environmental limitations analysis, which only includes the Indonesian FDA's digital maturity level application.

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DECLARATION OF CONFLICTING INTERESTS

The author declares that there is no conflict of interest.

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