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Policy Evaluation on Food Safety Regulation: Study Case on Risk Management Program on Food Safety in Indonesia

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ABSTRACT

In 2015, the Indonesian FDA issued Head of Indonesian FDA Regulation Number 14 of 2015 revised by Head of Indonesia FDA number 2 of 2017 then Head of Indonesia FDA number 21 of 2019 concerning the Implementation of the Risk Management Program (RMP) on Food Safety in Food Industry. This regulation mandatory requires foodstuff intended for particular nutritional uses (such as milk formula) and low acid can food industry in Indonesia to implement a risk-based food safety self-regulatory control system. This study aims to identify parameters of costs, problems, challenges, and benefits in implementing and operating RMP as a policy evaluation in the perspective of economic aspect. The result showed cost parameters that were considered important in the implementation of RMP, including documenting system, costs related to staff training, the cost for investment in new technology and equipment, and external consultant. While the benefit parameters that are expected by the industry in implementing RMP include the fast-track scheme optimization which is a special benefit from RMP, RMP branding to the public, and lifting obligation for HACCP certification for foodstuff intended for particular nutritional uses industry. These parameters are expected to be the basis for policymakers to improve the implementation of RMP.

Keywords: Indonesian FDA, MAXQDA Analytic, Program Evaluation, Risk Management Program on Food Safety

JEL Classification: D61, D78, H11

INTRODUCTION

Since 2015, it has been mandatory to implement the Risk Management Program on Food Safety (RMP) in Indonesia, under the Regulation of the Head of Indonesia FDA number 14 of 2015 concerning the Implementation of the Food Safety Risk Management Program in the Infant Formula Industry, Follow-Up Formula, and Growing Formula. This regulation was revised by the Head of Indonesia FDA number 2 of 2017 (increasing the scope for Container Sterilization food Products/LACF in Container sterilization). Then, it was revised again by the Head of Indonesia FDA number 21 of 2019 (increasing the scope required for Aseptic Process Sterilization, Foodstuff intended for particular nutritional uses (13.1) and providing the voluntary mechanism).

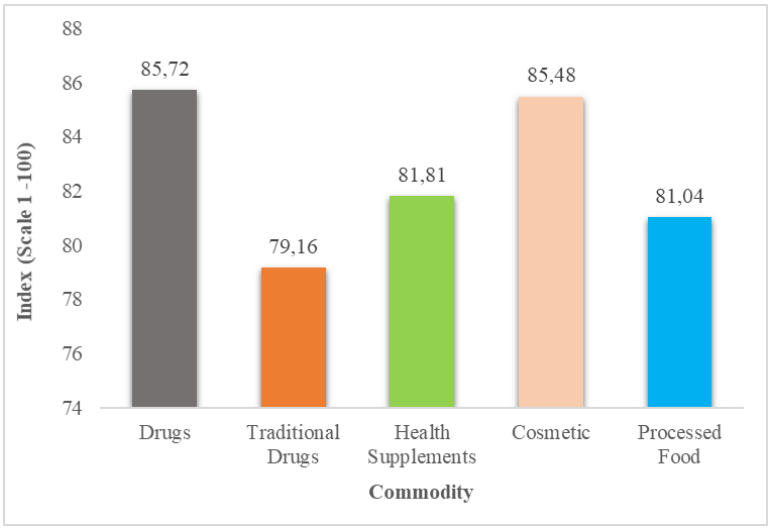
Infant Formula is defined as a formula that serves as a substitute for breast milk or *Air Susu Ibu* (ASI) for babies up to the age of 6 (six) months and is specifically formulated to be the baby's sole source of nutrition during the first few months of life until he or she is introduced to complementary foods for infants. This legal definition is cited from Indonesian FDA Regulation number HK.03.1.52.08.11.07235 of 2011 concerning Infant Formula and Infant Formula for Medical Special Dietary, as well as Government Regulation (PP) number 33 of 2012 regulating Exclusive Breast Milk Feeding. In Indonesia, the Indonesian FHA number HK.03.1.52.08.11.07235 of 2011 concerning Infant Formula and Infant Formula for Medical Special Dietary requires milk formula manufacturers to follow Good Manufacturing Practices (GMP) and Hazard Analytical Critical Control Points (HACCP).

In accordance with the Codex Principles and Guidelines for National Food Control Systems (CAC / GL 82-2013) in principle 4th, food producers have the main role and responsibility to control the safety of their products and compliance with applicable requirements (Codex, 2017). Meanwhile, the government/Competent Authority has the role of establishing and keeping the legal basis up to date as well as ensuring that the national food control system runs effectively.

The Risk Management Program (RMP) is a form of breakthrough in the food control systems, which put the main role to the industry to carry out independent supervision in ensuring product safety. Government is subsequently verificatory role, as a manifestation of the implementation of Risk-Based Preventive Food Safety Control. Martinez et al., (2013) mention that risk-based approach is a model of co-regulatory control, co-regulation is a regulatory strategy that incorporates both public (government) and private (industry) entities collaborating in the regulation of specific public policy interests and objectives.

RMP needs to be evaluated from an economic point of view whether it can provide competitiveness or not for the industry. Food safety as a core of RMP is the main part of the food quality has also been identified as a factor in the competitiveness of food industry (Cuevas, 2004). This is in line with Sulaeman (2004) who mention that compliance to the food safety can also become Parameters of competitiveness as well as trade barriers in global trade and appealing to consumers who are becoming aware of the importance of safe and healthy food. On the other hand, Policy Quality Index for food commodities which is still behind compared to other commodities in Indonesian FDA. Even though based on Indonesian FDA Performance Report 2020, the index achievement exceeded the target, which was 81.04 of 73 target index (Indonesian FDA, 2021). Data on Policy Quality Index in 2020 for each commodity is shown in **Figure 1.** as below.

Figure 1. Policy Quality Index 2020 (Indonesian FDA, 2021)



This encourages the urgency to conduct a program evaluation on the RMP, especially from the economic aspect point of view. Parameters costs, challenges, and benefits that are considered important/significant need to be identified in the implementation and operation of RMP. This study conducted on the Risk Management Program in Indonesia aims to identify parameters of costs, problems, challenges, and benefits in implementing and operating RMP as a policy evaluation in the perspective of economic aspect.

LITERATURE REVIEW

Several studies showed that the industry's decision to implement a food safety management system such as HACCP is strongly influenced by economic motives. As the study conducted by Maldonado et al. (2005) the meat industry in Mexico stated that the major benefit of implementing compliance with food safety was because they experience that the benefits of this implementation could reduce the microbial count in their products and then to meet their expectations to increase the self-life of the product.

Furthermore, food safety issues can have devastating impacts for industry, including loss of reputation, product price reductions, temporary or permanent shutdown of manufacturing facilities, lawsuits, an increase in product liability premium, and a reduction in product demand (Valeeva, 2005).

A cost-benefit analysis on RMP in New Zealand's seafood industry was conducted by (Cao et al., 2005) that concluded as below.

1. The lower the marginal cost of food safety, the higher the labor cost. Higher labor costs are associated with increased ability and competence, resulting in lower marginal costs for food safety implementation.
2. Food safety costs are lower when a company's capital is bigger. As a result, large businesses can save money on food safety.
3. Food safety costs are lower when there is higher mass production.
4. As safety standards are raised, the cost of production rises. The cost of production will be influenced by the level of safety.
5. The cost of food safety is determined by the initial level of food safety. The lower the initial level, the higher cost of food safety.
6. The different industries may result in the different costs of food safety.

This demonstrates how economic variables influence the application of food safety systems implementation. This is in line with the nature of the business which has long term objectives were to grow the company's value and to gain the prosperity of its owners and stakeholders (Sunarsih et al., 2019). Therefore, economic aspect should be into account. It means that economic issues must be considered when formulating food safety policies so that these policies can be implemented properly and have an impact not only on improving national public health but also on improving welfare, national competitiveness, and becoming economic leverage for the food industry. According to Apriani & Rufaidah (2018), competitiveness can lead to a significant effect on the business performance. Furthermore, evaluation of the economic aspect is a main part of Regulatory Impact Assessment. Regulatory Impact Assessment (RIA) is a method of compiling policies with an approach that is expected to accommodate all needs in the preparation of legislation (Suska, 2012).

RESEARCH METHOD

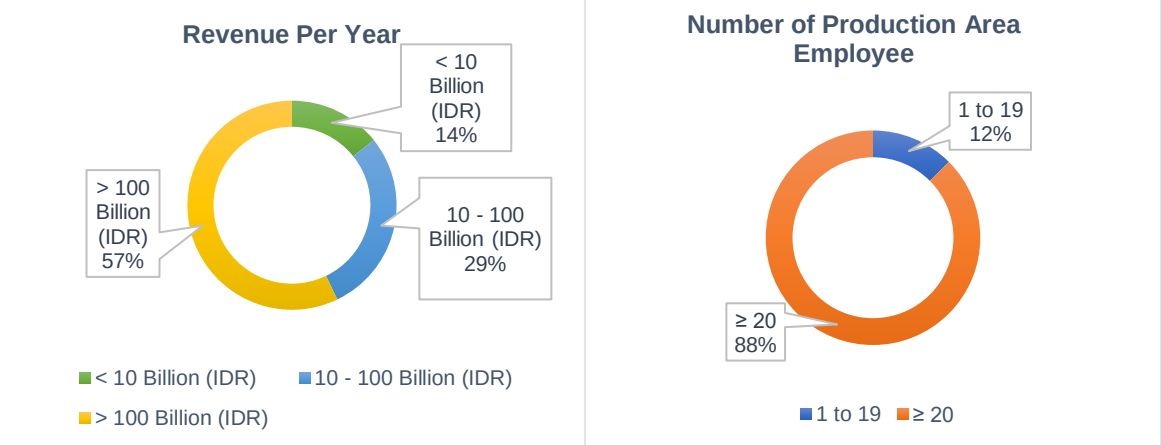
The primary method used in this study was a questionnaire and interview. Questionnaires will be addressed to industry who have been identified as having an RMP certificate since 2015. In-depth interviews with several respondents were conducted based on the survey results. They were chosen based on the availability of data, the willingness of the company with the fastest response time, and the most complete questionnaire response to dig deeper into evaluate important parameters in implementing and operating RMP. The data were analyzed using MAXQDA Analytics Pro 2020 (release 20.3.0) to identify the importance/significance parameter in implement and operating RMP.

RESULTS AND DISCUSSION

Profile Industry

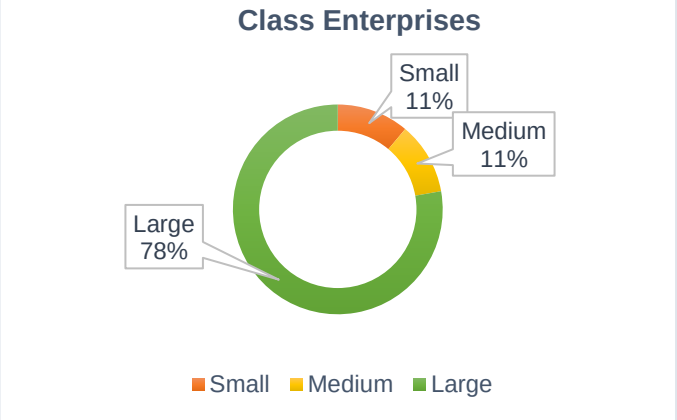
Questionnaire collection has been achieved by 81% of total respondents. The survey showed that more than 50% is large industry as identify trough revenue per year and number of employees. In general, industry that implemented RMP in Indonesia has revenue per year more than 100 billion IDR for 57% of respondents, and 29% of respondents have 10-100 billion IDR, while only 14% of respondent has less than 10 billion IDR as describe in **Figure 2.**

Figure 2. Revenue per year and number of employee industry that implemented RMP in Indonesia



Furthermore, 88% industry has more than 20 employees while only 12% industry has 1 to 9 employees. Majority of industry which implemented RMP in Indonesia in the large enterprise classification.

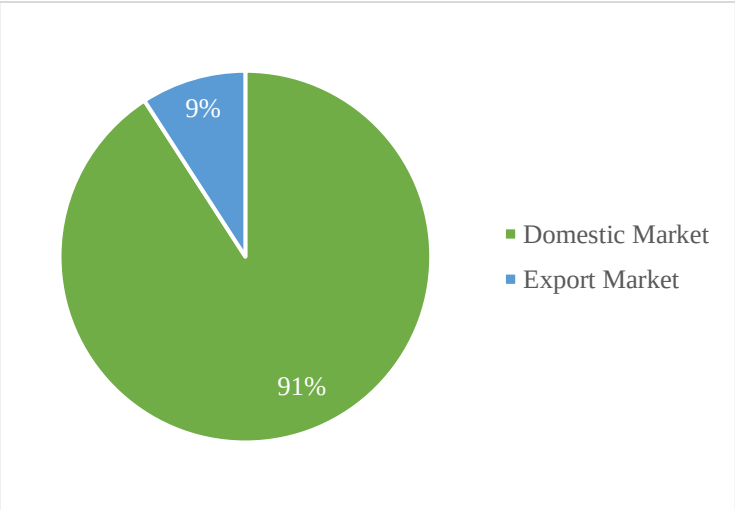
Figure 3. Class enterprises of industry that implemented RMP in Indonesia



According to the Regulation of Minister of Industry Number 64/M-Ind/Per/7/2016 concerning Amount of Employee and Investment for Industrial Classification, the amount of 78% industry is large enterprises, while only 11% for each classified as medium and small enterprises (see **Figure 3**).

While the target market of industry that implemented RMP was dominant for domestic market with 91% market size while only 9% for export market as shown in **Figure 4.**

Figure 4. Target market of industry that implemented RMP

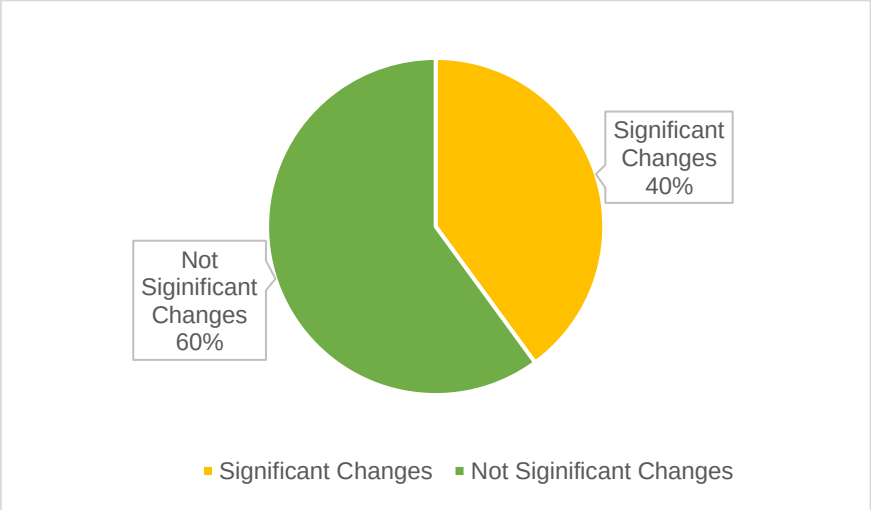


This emphasizes the importance of the RMP program in ensuring food safety and ensuring the quality to protect the public health, and RMP must be able to contribute to the industry's competitiveness to reach overseas markets. It acknowledges that food standards can be a trade barrier but contends that the challenges created by increasing standards can also serve as accelerators for improving food safety management capacity and providing the foundation for competitive positioning in high-value markets (Henson, S., & Jaffee, S., 2006).

Cost Changes in implementing and operating Risk Management Program

Furthermore, respondents evaluated cost parameters of operating RMP as shown in **Figure 5.** Majority industry (60%) conclude that there are no significance changes in operating cost before and after implementation RMP in their industry. Since the industry has implemented and owned food safety certifications such as HACCP, FSSC 22000, ISO 22000, or FSMS before RMP was imposed so that operational costs are not significantly affected. Other industries that generally do not have a food safety certification may experience a different assessment result.

Figure 5. Operating cost changes after RMP implementation

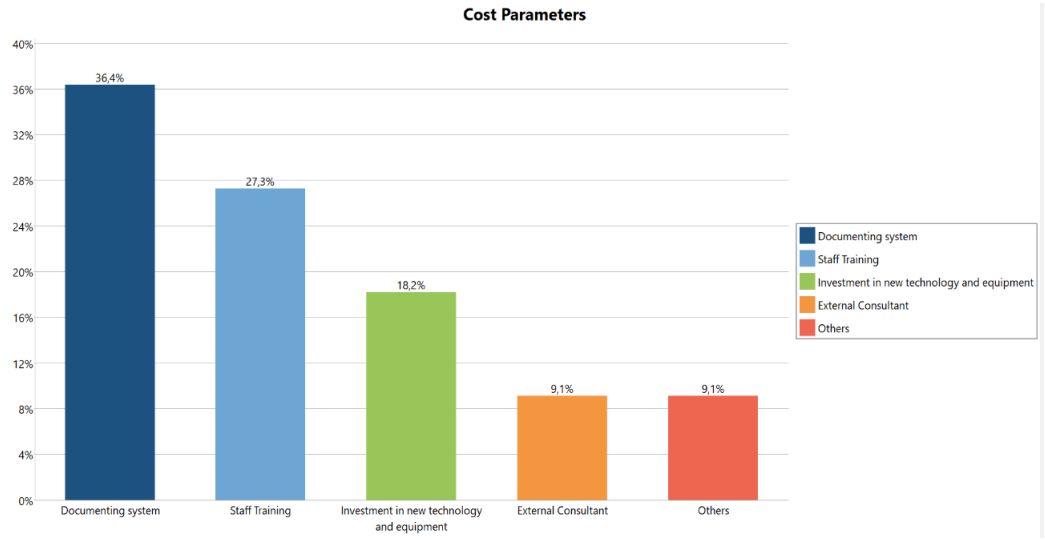


Importance Parameter in Implementing and Operating RMP

Respondents were asked to mention what cost parameters which are important in implementing and operating RMP. Based on the evaluation result from respondents, the cost parameters that are considered important and significant in the implementation and operation of RMP are the documenting system, staff training, investment in new technology, and external consultant. The percentage in **Figure 6.** shows the percentage of frequency which the respondents mentioned the parameters that were considered important in implementing RMP.

Cost parameters that are considered significant and important in implementing RMP include costs related to the documenting system (36.4%), costs related to staff training (27.3%), costs for investment in new technology and equipment (18.2%), external consultants (9.1%), and others, such as personal hygiene and managerial cost.

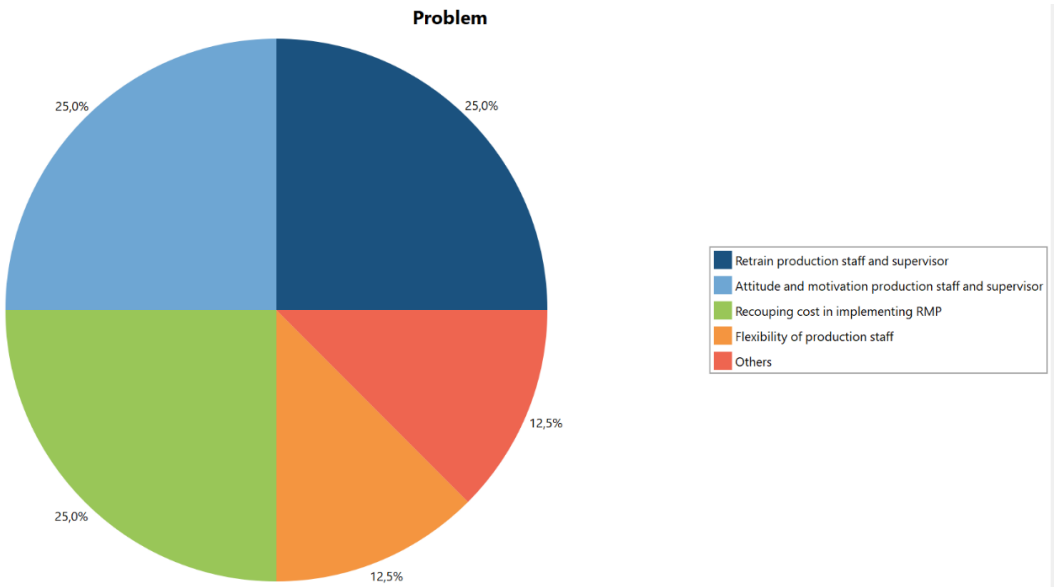
Figure 6. Cost Parameters in Implementing and Operating RMP



While problem parameters in implementing and operating RMP were needed to retrain staff, attitude/motivation of staff, recouping cost in implementing RMP, and flexibility of production staff. This parameter considers as the significance and importance. The percentage in **Figure 7.** shows the frequency of the respondents mention of these parameters but has not shown the weight of importance/significance. This cost parameters were in line with parameters in study from Maldonado et al., (2005), who conducted research on the application of HACCP in the Mexican Meat Industry, and Henson et al., (1999), who examined the cost-benefit analysis of HACCP implementation in the UK dairy industry.

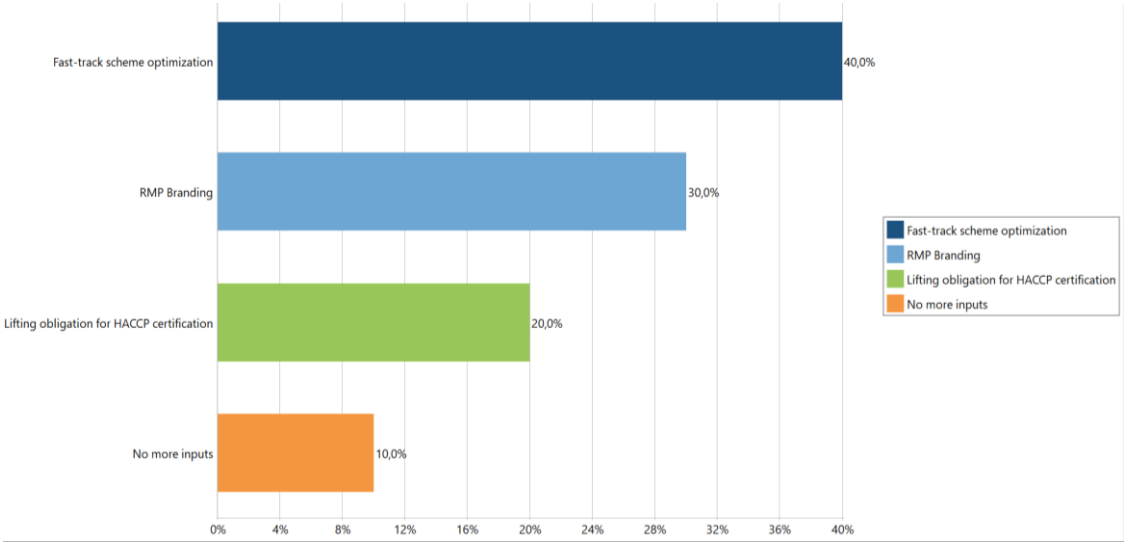
Meanwhile, the benefit parameters that need to be improved in implementing RMP include the fast-track scheme optimization facility, which is a special benefit from RMP, RMP branding, and lifting obligation for HACCP certification for foodstuff intended for particular nutritional uses as shown in **Figure 8.**

Figure 7. Problem Parameters in Implementing and Operating RMP



The fast-track scheme has not optimal yet so that the expectations of the industry are to be increased. RMP branding means to increase needed in public awareness to the RMP through dissemination and public campaign. RMP branding is expected to be like a halal certification that can provide a competitive advantage for the products. Furthermore, Jian et al., (2021), mention that halal for customer in Malaysia and Indonesia is a major concern. Customers will pay a higher price for products that considered as higher safety and quality (Ollinger, M., & Ballenger, N., 2003).

Figure 8. Benefit expected by Industry in Implementing RMP



CONCLUSION

This study concludes that most of the industries that have implemented RMP are industries with large enterprise classifications and have implemented food safety certification before the RMP mandatory required. This made the cost of food safety after implementation of RMP was not significant changes. Cost parameters that are considered important in implementing RMP include the documenting system, costs related to staff training, costs for investment in new technology and equipment, and external consultants.

While the benefit parameters that are expected by the industry in implementing RMP include the fast-track scheme optimization facility which is a special benefit from RMP, RMP branding, and lifting obligation for HACCP certification for foodstuff intended for particular nutritional uses industry. This study is expected to provide an overview for policy makers in improving RMP implementation. For further study, it is necessary to conduct a qualitative and quantitative cost-benefit analysis of the parameters which considered as important parameters in this study.

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DECLARATION OF CONFLICTING INTERESTS
The authors declare no conflict interest in preparing this article.

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