

4. その他

<文献 No. 19>

対象ツール：Multi-Factorial Risk Prioritization Framework (MFRPF)

文献タイトル／公表年月日：A Multi-Factorial Risk Prioritization Framework for Food-borne Pathogens／21 May 2007

筆者名：Spencer J. Henson, Julie A. Caswell, John A. L. Cranfield, Aamir Fazil, Valerie J. Davidson, Sven M. Anders and Claudia Schmidt

国・機関、依頼元	Health Canada、the Public Health Agency of Canada、the University of Guelph、そして the University of Massachusetts との共同研究。
ツール開発の目的	健康に最も脅威を与える生物被害や食物を体系的に優先付けし、選択して、食物由来の病気を効果的、効率的に防止するのを助けるフレームワークには、意思決定力のあるツールやデータが必要とされる。そのため、より統合され、より広範囲に生物由来の病気を優先付けし、リスクを削減するためのアプローチをもつシステムが必要とされる。
ランキング対象	Public health, Consumer risk perceptions and acceptance, marker-level impacts, and social sensitivity と4つのリスク要因を対象としている。
アプローチ方法 (選択肢)	<input type="checkbox"/> チェックリスト方式 <input type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Decision tree <input type="checkbox"/> モデル (確率論的アプローチ) <input checked="" type="checkbox"/> その他 (a three-dimensional cube based on pathogen-food-factor relationships)
リスク判定対象 (選択肢)	<input type="checkbox"/> ポイント数、チェック数 <input type="checkbox"/> レベル分け (優先度、重要度等) <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input checked="" type="checkbox"/> DALYs または類似した指標 (pseudo DALYs 等) <input checked="" type="checkbox"/> その他 (Economic indicators (ex. COI))
必要なデータセット	

工夫点	MFRPF を3つのステージに分けて操作し、統合することで、実現可能性と不確実性の観点を分離し、リスク管理者が全体的な優先順位付けにおける異なる局面(次元)に焦点を当てることを可能にする。
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●アブストラクト

EXECUTIVE SUMMARY

To lower the incidence of human food-borne disease, experts and stakeholders have urged the development of a science- and risk-based management system in which food-borne hazards are analyzed and prioritized. A literature review shows that most approaches to risk prioritization developed to date are based on measures of health outcomes and do not systematically account for other factors that may be important to Decision making.

The Multi-Factorial Risk Prioritization Framework developed here considers four factors that may be important to risk managers: public health, consumer risk perceptions and acceptance, market-level impacts, and social sensitivity. The framework is based on the systematic organization and analysis of data on these multiple factors. The basic building block of the information structure is a three-dimensional cube based on pathogen-food-factor relationships. Each cell of the cube has an information card associated with it and data from the cube can be aggregated along different dimensions.

The framework is operationalized in three stages, with each stage adding another dimension to Decision-making capacity. The first stage is the information cards themselves that provide systematic information that is not pre-processed or aggregated across factors. The second stage maps the information on the various information cards into cobweb diagrams that create a graphical profile of, for example, a food-pathogen combination with respect to each of the four risk prioritization factors. The third stage is formal multi-criteria Decision analysis in which Decision makers place explicit values on different criteria in order to develop risk priorities.

The process outlined above produces a 'List A' of priority food-pathogen combinations according to some aggregate of the four risk prioritization factors. This list is further vetted to produce 'List B', which brings in feasibility analysis by ranking those combinations where practical actions that have a significant impact are feasible. Food-pathogen combinations where not enough is known to identify any or few feasible interventions are included in 'List C'. 'List C' highlights areas

with significant uncertainty where further research may be needed to enhance the precision of the risk prioritization process. The separation of feasibility and uncertainty issues through the use of 'Lists A, B, and C' allows risk managers to focus separately on distinct dimensions of the overall prioritization.

The Multi-Factorial Risk Prioritization Framework provides a flexible instrument that compares and contrasts risks along four dimensions. Use of the framework is an iterative process. It can be used to establish priorities across pathogens for a particular food, across foods for a particular pathogen and/or across specific food-pathogen combinations. This report provides a comprehensive conceptual paper that forms the basis for a wider process of consultation and for case studies applying the framework.

●アプローチ方法が分かる図表等

Figure 1. Multi-Factorial Risk Prioritization Framework (MFRPF):

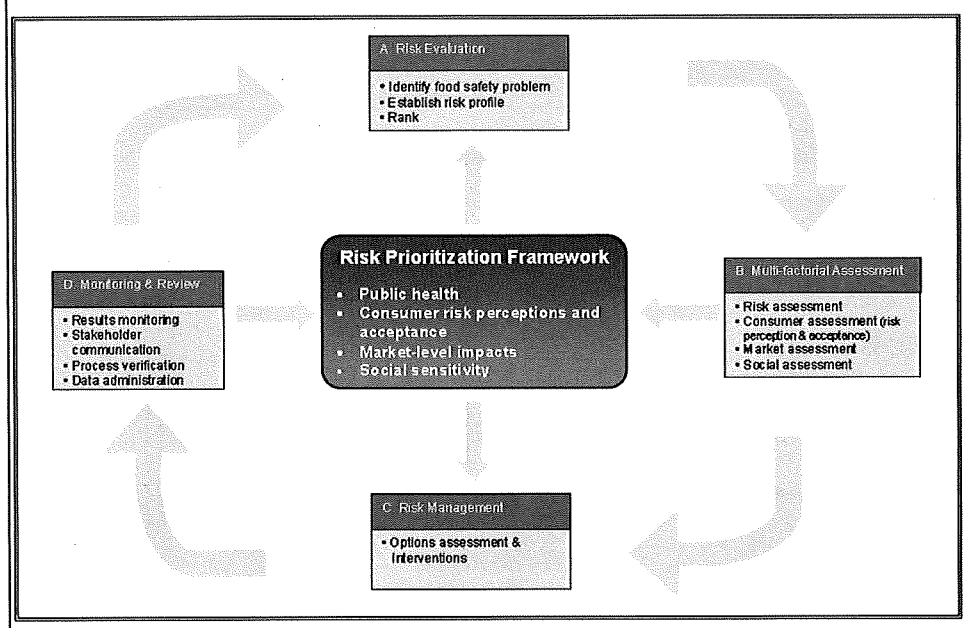


Figure 4. Summary of Three Stages in Operationalizing and Aggregating the Framework:

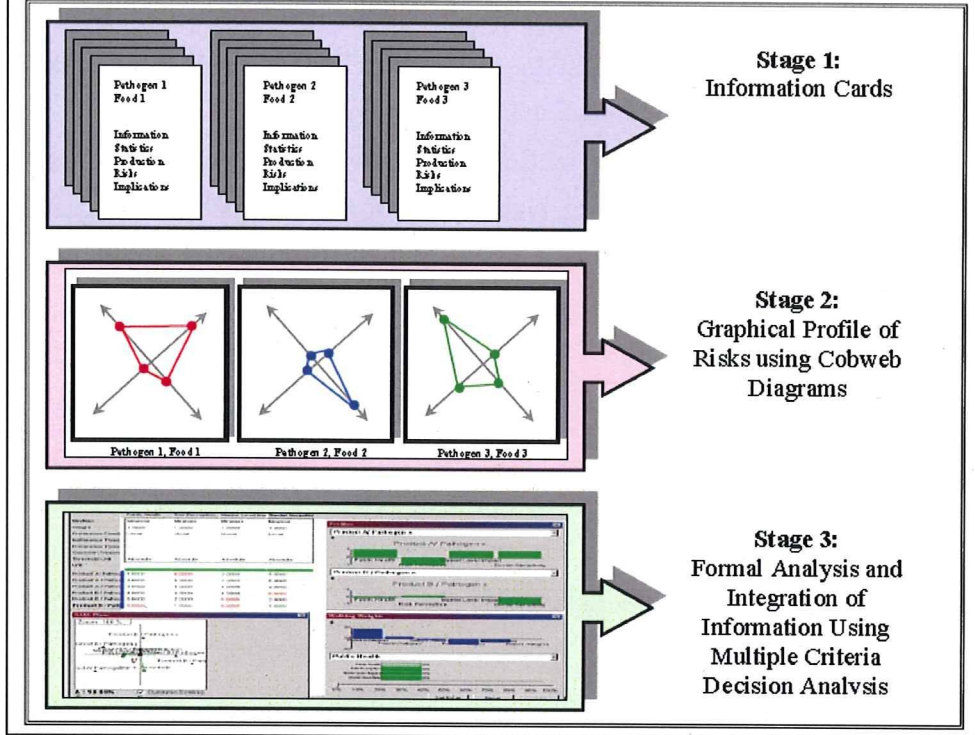
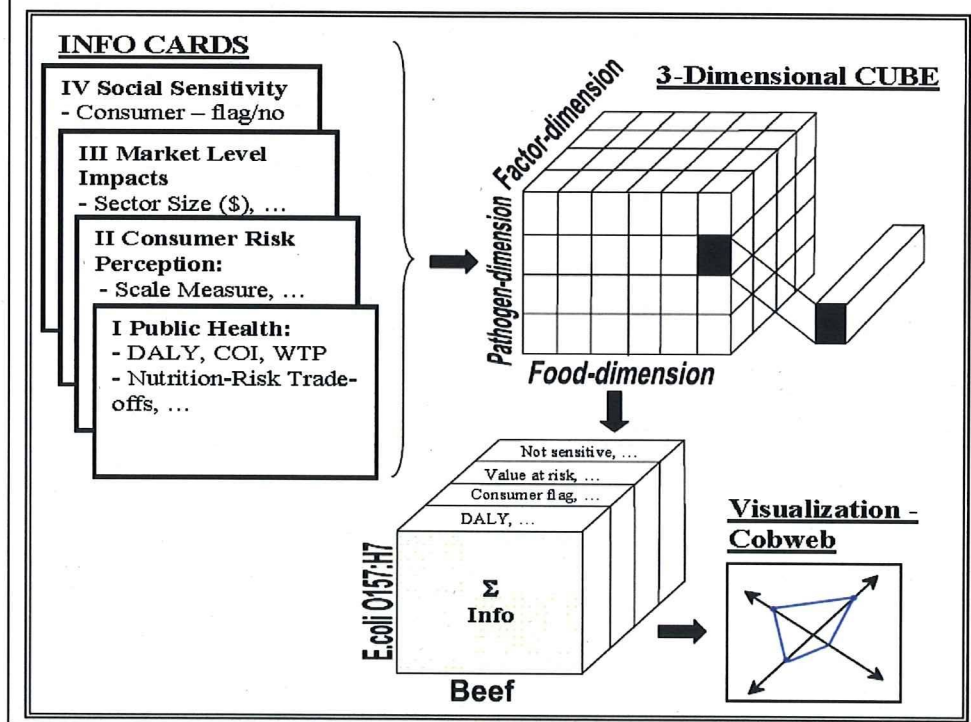


Figure 2. Multi-Factorial Risk Prioritization - Process and Aggregation:



(2) 管理目的

1. チェックリスト

<文献 No. 20>

対象ツール：名称なし

文献タイトル／公表年月日：Conducting Risk Based Inspections／年月日

筆者名：不明

国・機関、依頼元	アメリカ・FDA
ツール開発の目的	現場検査員の事業者への訪問検査頻度を決定するため。
ランキング対象	食品の種類、取り扱い方、過去の検査成績、業態、対象客層など
アプローチ方法 (選択肢)	<input checked="" type="checkbox"/> チェックリスト方式 <input type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Decision tree <input type="checkbox"/> モデル (確率論的アプローチ) <input type="checkbox"/> その他 ()
リスク判定対象 (選択肢)	<input type="checkbox"/> ポイント数、チェック数 <input checked="" type="checkbox"/> レベル分け (優先度、重要度等) <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input type="checkbox"/> DALYs または類似した指標 (pseudo DALYs 等) <input type="checkbox"/> その他 ()
必要なデータセット	食品の種類、取り扱い方、過去の検査成績、業態、対象客層など
工夫点	食品の種類、取り扱い方、過去の検査成績、業態、対象客層などをもとに、現場の検査院が地域や食品業界ごとに検査対象事業者をランキング分けし、柔軟にリスクにもとづいた定期検査を行えるように書かれている。

●アブストラクト

8. SUMMARY

Although a retail and food service operator has the responsibility for establishing a food safety management system for controlling foodborne illness risk factors, inspectors have a vital, multi-faceted role in consumer protection. It is essential that inspectors are provided with the proper training, equipment, time, and resources to adequately perform their jobs.

The primary role of inspectors is to ensure that the operator has effective control of foodborne illness risk factors. Once inspectors have established a dialogue with the person in charge and employees, conducted a menu/food list review, and established a dialogue with the person in charge, inspectors will have enough information to mentally place menu items into one of the three process flows. The inspection can then focus on assessing the operator's active managerial control of foodborne illness risk factors associated with each process.

Once out-of-control foodborne illness risk factors are identified, the role of inspectors shifts to assisting the operator with strengthening the existing food safety management system through intervention strategies designed to achieve immediate and long-term compliance. With inspector's assistance, a retail and food service operator can achieve long-term behavioral change resulting in a reduction in risk factor occurrence and an increase in public health protection.

●アプローチ方法が分かる図表等

Annex 5, Table 1. Risk Categorization of Food Establishments

RISK CATEGORY	DESCRIPTION	FREQUENCY #YR
1	Examples include most convenience store operations, hot dog carts, and coffee shops. Establishments that serve or sell only pre-packaged, nonpotentially hazardous foods (non time/temperature control for safety (TCS) foods). Establishments that prepare only nonpotentially hazardous foods (nonTCS foods). Establishments that heat only commercially processed, potentially hazardous foods (TCS foods) for hot holding. No cooling of potentially hazardous foods (TCS foods). Establishments that would otherwise be grouped in Category 2 but have shown through historical documentation to have achieved active managerial control of foodborne illness risk factors.	1
2	Examples may include retail food store operations, schools not serving a highly susceptible population, and quick service operations. Limited menu. Most products are prepared/cooked and served immediately. May involve hot and cold holding of potentially hazardous foods (TCS foods) after preparation or cooking. Complex preparation of potentially hazardous foods (TCS foods) requiring cooking, cooling, and reheating for hot holding is limited to only a few potentially hazardous foods (TCS foods). Establishments that would otherwise be grouped in Category 3 but have shown through historical documentation to have achieved active managerial control of foodborne illness risk factors. Newly permitted establishments that would otherwise be grouped in Category 1 until history of active managerial control of foodborne illness risk factors is achieved and documented.	2
3	An example is a full service restaurant. Extensive menu and handling of raw ingredients. Complex preparation including cooking, cooling, and reheating for hot holding involves many potentially hazardous foods (TCS foods). Variety of processes require hot and cold holding of potentially hazardous food (TCS food). Establishments that would otherwise be grouped in Category 4 but have shown through historical documentation to have achieved active managerial control of foodborne illness risk factors. Newly permitted establishments that would otherwise be grouped in Category 2 until history of active managerial control of foodborne illness risk factors is achieved and documented.	3
4	Examples include preschools, hospitals, nursing homes, and establishments conducting processing at retail. Includes establishments serving a highly susceptible population or that conduct specialized processes, e.g., smoking and curing, reduced oxygen packaging for extended shelf-life.	4

<文献 No. 21>

対象ツール： Risk Based Inspection Report

文献タイトル／公表年月日： Food - Risk Based Inspection Report／ 02/21/2008

筆者名： Department of Regulatory Services Division of Environmental Management & Safety Environmental Health & Food Safety

国・機関、依頼元	アメリカ・City of Minneapolis (依頼元)
ツール開発の目的	ミネアポリス市内の施設・店舗から発生する食品由来の病気や障害を防ぐため。
ランキング対象	食品
アプローチ方法 (選択肢)	<input checked="" type="checkbox"/> チェックリスト方式 <input type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Decision tree <input type="checkbox"/> モデル (確率論的アプローチ) <input type="checkbox"/> その他 ()
リスク判定対象 (選択肢)	<input type="checkbox"/> ポイント数、チェック数 <input type="checkbox"/> レベル分け (優先度、重要度等) <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input type="checkbox"/> DALYs または類似した指標 (pseudo DALYs 等) <input checked="" type="checkbox"/> その他 (IN(in compliance) or OUT(not in compliance))
必要なデータセット	<ul style="list-style-type: none"> ・ 食品由来の病気や障害を引き起こす最も普及している要因として知られている不適切な習慣や手順 ・ 公衆衛生の介入 ・ 食品の中にある病原菌、化学品、物理的な物体の添加をコントロールする予防的な手段
工夫点	なし

●アブストラクト

Risk factors are improper practices or procedures identified as the most prevalent contributing factors of foodborne illness or injury. Public Health Interventions are control measures to prevent foodborne illness or injury. X - Critical Item Requiring Immediate Action

●アプローチ方法が分かる図表等

FOODBORNE ILLNESS RISK FACTORS AND PUBLIC HEALTH INTERVENTIONS													
Compliance Status		Foodborne Illness Risk Factors and Public Health Interventions						Compliance Status					
IN	OUT	N/A=not applicable				COS=corrected on-site during inspection		R	COS	R			
1A	IN	Certified food manager, duties						15	IN	Proper disposition of returned, previously served reconditioned & unsafe food			
1B	IN	PIC knowledgeable; duties & oversight						16	IN	Proper cooking time & temperatures			
2	IN	Management awareness; policy present						17	IN	Proper reheating procedures for hot holding			
3	IN	Proper use of reporting, restriction & exclusion						18	IN	Proper cooling time & temperatures			
4	IN	Proper eating, tasting, drinking, or tobacco use						19	IN	Proper hot holding temperatures			
5	IN	No discharge from eyes, nose, and mouth						20	IN	Proper cold holding temperatures			
6	IN	Hands clean and properly washed						21	IN	Proper date marking & disposition			
7	IN	Hand contact with RTE foods restricted						22	N/A	Time as a public health control; procedures & record			
8	IN	Adequate handwashing facilities supplied & accessible						25	IN	Food additives; approved & properly used			
9	IN	Food obtained from approved source						26	IN	Toxic substances properly identified, stored & used			
10	IN	Food received at proper temperature						27	N/A	Compliance with HACCP plan and variance			
11	IN	Food in good condition, safe, & unadulterated						Risk factors are improper practices or procedures identified as the most prevalent contributing factors of foodborne illness or injury. Public Health Interventions are control measures to prevent foodborne illness or injury. X - Critical Item Requiring Immediate Action					
12	N/A	Required records available; shellstock tags, parasite destruction											
13	IN	Food separated/protected from cross contamination											
14	IN	Food-contact surfaces; cleaned & sanitized											
GOOD RETAIL PRACTICES													
Good Retail Practices are preventative measures to control the addition of pathogens, chemicals, and physical objects into foods.													
Compliance Status		Good Retail Practices						Compliance Status					
IN	OUT	N/A=not applicable				COS=corrected on-site during inspection		R	COS	R			
28	IN	Pasteurized eggs used where required						43	IN	Single-use & single-service articles; properly stored & used			
29	IN	Water & ice from approved source						44	IN	Gloves used properly			
30	IN	Variance obtained for specialized processing methods, documentation on file						45	IN	Food & non-food contact surfaces cleanable, properly designed, constructed & used			
31	IN	Proper cooling methods used; adequate equipment for temperature control						46	IN	Warewashing facilities; installed, maintained, & used; test strips			
32	IN	Plant food properly cooked for hot holding						47	IN	Non-food contact surfaces clean			
33	IN	Approved thawing methods used						48	IN	Hot & cold water available; adequate pressure			
34	IN	Thermometers provided & accurate						49	IN	Plumbing installed; proper backflow devices			
35	IN	Food properly labeled; original container						50	IN	Sewage & waste water properly disposed			
36	IN	Insects, rodents, & animals not present; no unauthorized person						51	IN	Toilet facilities: properly constructed, supplied, cleaned			
37	IN	Contamination prevented during food preparation, storage & display						52	IN	Garbage & refuse properly disposed, facilities maintained			
38	IN	Personal cleanliness						53	Out	Physical facilities installed, maintained, & clean			
39	IN	Wiping cloths; properly used & stored						54	IN	Adequate ventilation & lighting; designated areas used			
40	IN	Washing fruits & vegetables						55	IN	Compliance with MCI AA & Choking Poster			
41	IN	In-use utensils; properly stored						56	IN	Compliance with licensing & plan review			
42	IN	Utensils, equipment & linens; properly stored, dried, & handled											

<文献 No. 22>

対象ツール：Priority Rating

文献タイトル／公表年月日：Risk-based food inspection manual／2008年

筆者名：FAO

国・機関、依頼元	Food Quality and Standard Service in Food and Agriculture Organization of United Nations
ツール開発の目的	検査対象の事業者が多い場合、優先順位をつけて効率よく店舗、施設を検査することを目的とする。現場監視員向け。
ランキング対象	事業者の検査履歴×当該事業者が扱う食品のリスク
アプローチ方法 (選択肢)	<input checked="" type="checkbox"/> チェックリスト方式 <input type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Decision tree <input type="checkbox"/> モデル (確率論的アプローチ) <input type="checkbox"/> その他 ()
リスク判定対象 (選択肢)	<input type="checkbox"/> ポイント数、チェック数 <input checked="" type="checkbox"/> レベル分け (優先度、重要度等) <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input type="checkbox"/> DALYs または類似した指標 (pseudo DALYs 等) <input type="checkbox"/> その他 ()
必要なデータセット	事業者の検査履歴、食品リスク分類プロファイル
工夫点	特になし

● アブストラクト

1.11. Prioritization for inspection based on establishment and product profiles

When the number of establishments to be inspected is large enough to overwhelm the national or local food control system, some type of prioritization is necessary to ensure that products that pose greater risk to consumers and establishments that have a poor record of compliance are given special attention and inspected more frequently. A technique that can be used to establish a priority list of primary production and food processing establishments to be inspected relies on establishment of product “profiles”.

● アプローチ方法が分かる図表等

Table 1. Matrix to assign a priority rating to the establishment.

Establishment compliance profile	Product risk profile	Inspection priority*
Low	High	1
Low	Low	2
High	High	2
High	Low	3

* 1 = top priority; 2 = medium priority; 3 = low priority.

<文献 No. 23>

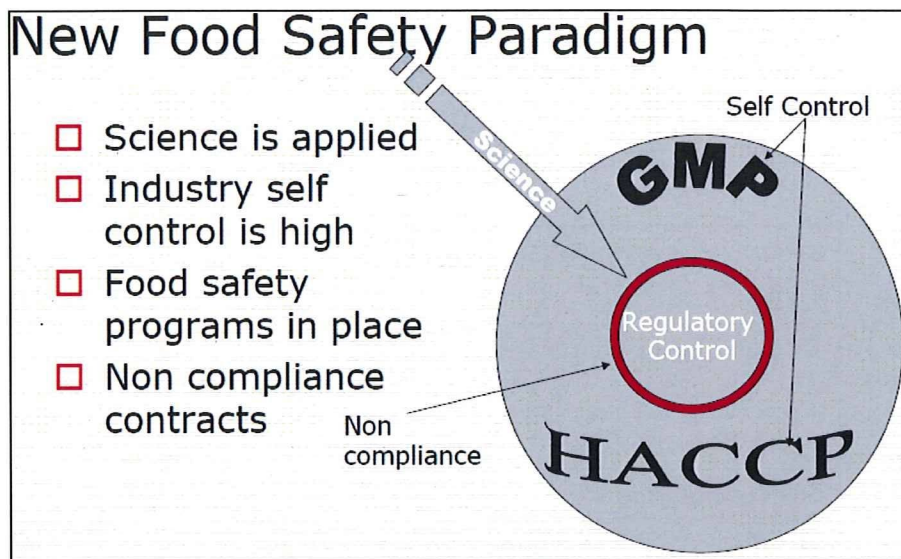
対象ツール：Qualitative Risk Matrix in Food Safety

文献タイトル／公表年月日：Risk Based Inspections／2008年8月3日

筆者名：Roy Costa

国・機関、依頼元	President Environ Health Associates, Inc.
ツール開発の目的	現行の行政による検査制度が機能していないため、科学的根拠のあるリスクにもとづく新しい仕組みを開発する。現場監視員向け。
ランキング対象	Harzard（生物学的、化学的、物理的要因すべての危険度）× Consequence（食中毒症状の危険度）
アプローチ方法 （選択肢）	<input checked="" type="checkbox"/> チェックリスト方式 <input type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Yes/No チャート <input type="checkbox"/> モデル（確率論的アプローチ） <input type="checkbox"/> その他（ ）
リスク判定対象 （選択肢）	<input checked="" type="checkbox"/> ポイント数、チェック数 <input type="checkbox"/> レベル分け（優先度、重要度等） <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input type="checkbox"/> DALYs または類似した指標（pseudo DALYs 等） <input type="checkbox"/> その他（ ）
必要なデータセット	GMPP、SSOP、HACCP にもとづく食品管理計画書
工夫点	事業者に自主管理のシステムを持たせる

● アブストラクト



● アプローチ方法が分かる図表等

Qualitative Risk Matrix

HAZARD	CONSEQUENCES			
	Low	Moderate	High	Very High
Very Low	Very Low	Low	Low	Moderate
Low	Low	Low	Moderate	High
Moderate	Low	Moderate	High	Very High
High	Moderate	High	Very High	Very High

<文献 No. 24>

対象ツール：Risk Categorization Model(RCM)

文献タイトル／公表年月日：Risk Categorization Model for Food Retail/Food Service Establishments Second Edition／2007年5月

筆者名：Federal/Provincial/Territorial Committee on Food Safety Policy

国・機関、依頼元	Federal / Provincial/Territorial Committee on Food Safety Policy
ツール開発の目的	食品管理機関が査察計画及び資源分配において一貫したアプローチをとれるよう、リスクマネジメントツールを提供する。 対象使用者：監視員
ランキング対象	Food borne illness
アプローチ方法 (選択肢)	<input checked="" type="checkbox"/> チェックリスト方式 <input type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Decision tree <input type="checkbox"/> モデル (確率論的アプローチ) <input type="checkbox"/> その他 ()
リスク判定対象 (選択肢)	<input checked="" type="checkbox"/> ポイント数、チェック数 <input type="checkbox"/> レベル分け (優先度、重要度等) <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input type="checkbox"/> DALYs または類似した指標 (pseudo DALYs 等) <input type="checkbox"/> その他 ()
必要なデータセット	Types of food and intended uses, Food preparation and processing, Equipment and facility, Management and employee food safety knowledge, Food safety management program, Regulatory compliance, Volume of food, Typical patronage
工夫点	8つの項目に対して各々2～4の選択肢を与え、それぞれの選択肢を具体的に定義してある。

● アブストラクト

The Federal/Provincial/Territorial Committee on Food Safety Policy (FPTCFSP) established a Working Group to develop a national risk categorization model for food retail and food service establishments. This undertaking was prompted by the publication of the Food Retail and Food Services Code and the commitment of federal, provincial, territorial and municipal governments to pursue the goals of the Blueprint for the Canadian Food Inspection System. The Risk Categorization Model (RCM) presented in this document was pilot tested in Nova Scotia and the Yukon to provide reasonable assurance that the categorization rankings obtained with its use reflect the rankings that would be given by inspectors based on the factors outlined in the model. The RCM Questionnaire and Guide contained in Annexes 1 and 2, respectively, are provided for the voluntary use by regulatory authorities across Canada.

● アプローチ方法が分かる図表等

1. Types of Food and Intended Uses	Check one of a, b, c, or d	Circle corresponding score
a) High risk foods that are ready-to-eat when served or sold to the consumer		40
b) Medium risk foods that are ready-to-eat when served or sold to the consumer		25
c) High or medium risk foods that are not ready-to-eat		25
d) Low risk foods that may or may not be ready-to-eat		10
2. Food Preparation and Processing	Check one of a, b, c, or d	Circle corresponding score
a) Extensive handling or preparation of high or medium risk foods		40
b) Limited handling or preparation (cooking, serving) of high or medium risk foods		25
c) Handling or preparation of unpackaged low risk foods		10
d) a, b, or c do not apply		0
Additional Factors:	Check one of a, b, c or d	Circle corresponding score
e) Manufacturing cook/chill foods: small scale cooked meat or seafood products (smoking, curing) and/or vacuum packaging or aseptic packing of low acid foods		20
f) Provides catering services off site		20

3. Equipment and Facility	Check all that apply	Circle corresponding score
a) Insufficient refrigeration equipment or hot holding equipment to maintain food temperatures at correct standards, facilities that are under re-occurring boil order advisories, or, if in place, drinking water treatment systems for microbial contamination are poorly maintained		15
b) Food preparation area or kitchen is small, insufficient space, has poor layout, inadequate lighting or ventilation		15
c) Equipment or facility surfaces are not easily cleanable, in disrepair or need replacing		15
d) Equipment and facility is satisfactory or better		0
4. Management and Employee Food Safety Knowledge	Check only one	Circle corresponding score
a) Demonstrate little or no knowledge/training of food safety practices		30
b) Demonstrate some knowledge/training of food safety practices		15
c) Demonstrate good knowledge/training of food safety practices		0
5. Food Safety Management Program	Check only one	Circle corresponding score
a) No documented food safety management program in place where warranted		30
b) Documented food safety management program in place without an audit program		15
c) Audited food safety management program where all HACCP principles are applied		0
d) Not applicable due to the type of foods (1d) or the amount of handling and preparation (2d)		0

6. Regulatory Compliance	Check only one	Circle corresponding score
a) Non-compliance usually with three or more critical items during inspections; continual non-compliance with non-critical items		40
b) Non-compliance with two critical items during inspections; continual non-compliance with non-critical items		30
c) General compliance usually with one or no critical items in non-compliance during inspections; some non-compliance with non-critical items; conditions being maintained or improved		15
d) High compliance; may have some non-compliance with non-critical items		0
Additional Factor:		
e) A clinically confirmed or epidemiologically linked outbreak has occurred at the facility within the last year under the same ownership/management		30
7. Volume of Food	Check only one	Circle corresponding score
a) Foodservice serving more than 250 meals per day or food retail employing more than 10 people		20
b) Foodservice serving less than 250 meals per day or food retail employing 10 or less people		10
8. Typical Patronage	Check only one if present	Circle corresponding score
a) Provides foodservice primarily to vulnerable populations including immuno-compromised individuals (e.g., hospitals, nursing homes)		30
b) Provides foodservice directly to vulnerable populations that do not include immuno-compromised individuals (e.g., child care centres, residential care facilities)		15
Total score for 8 factors: _____		

Risk categorization obtained with questionnaire:

High Risk: 165 points or more

Moderate Risk: between 110 and 160 points

Low Risk: 105 points or less

Document any additional risk factors noted during the visit that should be taken into consideration:

Evaluation prepared by: _____ Date: _____

Evaluation reviewed by: _____ Date: _____

Final categorization assigned by manager or administrator (if different than above):

High Risk

Moderate Risk

Low Risk

Rationale for changing risk categorization obtained with the Questionnaire (if applicable):

2. スコアリング

<文献 No. 25>

対象ツール：名称なし

文献タイトル／公表年月日：Prioritization of infectious diseases in public health - Call for comments／Euro Surveill. 2008 Oct 2;13(40)

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国・機関、依頼元	Robert Koch Institute (RKI)：ドイツ連邦厚生省の一機関
ツール開発の目的	感染症の予防およびコントロールのための研究、調査、監視等の活動に対し、限られたリソースを合理的に配分するため。
ランキング対象	専門家によって抽出された病原体 85 種
アプローチ方法 (選択肢)	<input type="checkbox"/> チェックリスト方式 <input checked="" type="checkbox"/> スコアリング、ウェイト付け <input type="checkbox"/> Yes/No チャート <input type="checkbox"/> モデル (確率論的アプローチ) <input type="checkbox"/> その他 ()
リスク判定対象 (選択肢)	<input checked="" type="checkbox"/> ポイント数、チェック数 <input type="checkbox"/> レベル分け (優先度、重要度等) <input type="checkbox"/> 汚染レベル <input type="checkbox"/> 感染者数 <input type="checkbox"/> 発症者数 <input type="checkbox"/> 患者数 <input type="checkbox"/> 死者数 <input type="checkbox"/> DALYs または類似した指標 (pseudo DALYs 等) <input type="checkbox"/> その他 ()
必要なデータセット	<ul style="list-style-type: none"> ・ 発生率 ・ 重症度 ・ 死亡率 ・ アウトブレイクの可能性 ・ 趨勢、動向 ・ ドイツ国内での発生の可能性 ・ リスク因子およびリスク集団のエビデンス ・ 疫学的情報の妥当性 ・ 国際的義務／政府による検討および大衆の注目度 ・ 病原性および伝播様式のエビデンス

	<ul style="list-style-type: none"> ・ 予防可能性 ・ 治療可能性
工夫点	<p>重み付けのプロセスおよび基準を明記し、透明性を高めた点。</p> <p>方法論を公開し、パブリックコメントを求めた点。それらのコメントをフィードバックし、より有用なツールの開発を目指した点。</p> <p>次の段階として、Delphi パネルに RKI 以外の専門家を加え、本ツールの妥当性を検討する予定。</p>

● アブストラクト

In order to allocate rationally resources for research and surveillance of infectious diseases at the level of the German public health institute (RKI), we prioritised pathogens by public health criteria. After screening the relevant literature we developed a standardised methodology including a three-tiered scoring system for selected pathogens. The pathogens were rated in four categories containing a total of 12 criteria: burden of disease including incidence, severity, mortality; epidemiologic dynamic including outbreak potential, trend, emerging potential; information need including evidence on risk factors/groups, validity of epidemiologic information, evidence for pathogenesis; international duties and public attention; health gain opportunity including preventability, treatability. For each criterion a numerical score of +1, 0 or -1 was given and each criterion received a weight by which the numerical score of each criterion was to be multiplied. The total weighted scores ranged from +22.7 (influenza) to - 64.4 (cholera) with the median being -22.9 (rubella). Relevant changes were observed between weighted and unweighted scores. The chosen approach proved to be feasible and the result plausible. However, in order to further improve the methodology we invite experts to give feedback on the methodology via a structured web-based questionnaire at www.rki.de/EN > Prevention of infection > Infectious Disease Surveillance > Pathogen prioritization. Results of this survey will be included in a modification of the methodology.

●アプローチ方法が分かる図表等

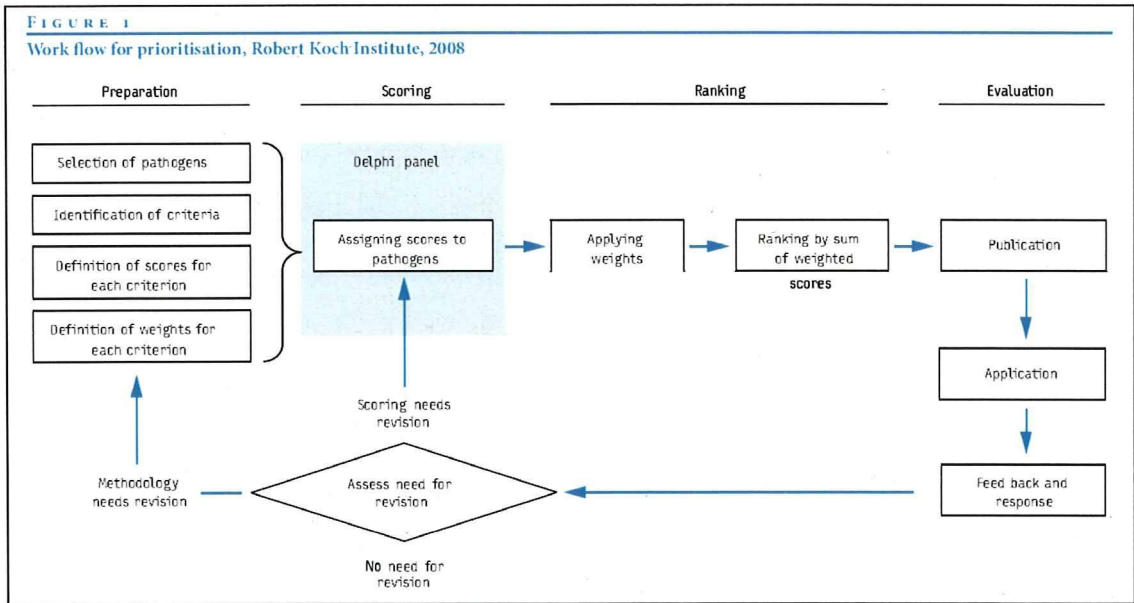


TABLE 2
Criteria and definition of the respective scores for the prioritisation of pathogens, Robert Koch Institute, 2008

Criteria	Values		
	-1	0	1
Burden of disease			
Incidence	<1/100,000	1/100,000-20/100,000	>20/100,000
Severity	hospitalisation is very rare, work loss less than 2 days, no persisting handicaps	hospitalisation is rare, work loss of more than 5 days is rare, very rarely persisting handicaps	hospitalisation is frequent, work loss of more than 5 days is frequent, persisting handicaps do occur
Mortality*	<50 deaths/year in Germany	between 50 and 500 deaths /year in Germany	more than 500 deaths /year in Germany
Epidemiologic dynamic			
Outbreak potential	outbreaks are very rare	outbreaks with 5 or more cases are rare	outbreaks with 5 or more cases are frequent
Trend	diminishing incidence rates	stable incidence rates	increasing incidence rates
Emerging potential	disease already endemic or very unlikely to be introduced to Germany	disease has the potential to be introduced to Germany sporadically	disease is likely to emerge in Germany in a relevant way
Information need			
Evidence for risk factors /groups	risk factors and risk groups are identified based on scientific evidence	risk factors and risk groups are basically known but scientific evidence is missing	risk factors and risk groups are not known
Validity of epidemiologic information	epidemiologic situation is well known and scientifically valid	epidemiologic information exists but is scientifically not very valid	epidemiologic information is insufficient
International duties and public attention	no international duties or political agenda, minor public attention	no international duties but informal political expectations, moderate public attention	international duties or explicit political agendas, high public attention
Evidence for pathogenesis	information on pathogenesis and transmission routes is available and well supported by scientific evidence	information on pathogenesis and transmission routes is basically available but not well supported by scientific evidence	information on pathogenesis and transmission routes is hardly available
Health gain opportunity			
Preventability	there are hardly any possibilities for prevention or there is no need for prevention	concepts for prevention are established but there is need for further research to improve its effectiveness	strong need for further research on preventive measures because need for prevention is clear but concepts for prevention are missing
Treatability	medical treatment is rarely necessary or effective treatments are available to positively influence the burden of disease or the prognosis	medical treatment is frequently indicated but medical treatments only have a limited influence on the burden of disease or the prognosis	medical treatment is desirable but currently there is no treatment available that positively influences the burden of disease or the prognosis
Proposed alternative to mortality			
Case fatality rate*	<0,01%	0,01- 1%	> 1%