In the past year, we saw many issues with foodborne illnesses and a large number of food recalls due to confirmed or probable pathogen or allergen contamination. The case of romaine lettuce was telling and tragic. A dangerous strain of E. coli found in lettuce led to at least five confirmed deaths. Other large-scale food recalls involved Salmonella contaminations in JBS ground beef and Jennie O ground turkey. In the Jennie O case, one death was confirmed. A McCain Foods USA recall due to Salmonella contamination involved more than a dozen food firms with products sold in Trader Joe’s, Whole Foods, Walmart, Kroger, and Target stores across the country. In total, over 755 tons of food were recalled by just a handful of food providers. Food illness is increasing, as more illnesses have been linked to food transmission in recent years. The CDC estimates that 1 in 6 Americans experiences serious food illness in a given year and further estimates that foodborne diseases cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the United States each year. Known pathogens account for an estimated 14 million illnesses, 60,000 hospitalizations, and 1,800 deaths, leaving a great deal of the specifics of food pathogen contamination unknown. Foodborne illnesses also cause a great disruption to the economy, estimated by the CDC to be more than $55 billion per year in the U.S.

The scale of these recalls shows the immense challenge ahead of us. Contaminated food makes it into the food supply before being fully tested or vetted. Once in processing facilities, the pathogens grow and contaminate many times more food, making solving the problem harder and more expensive. In response to the romaine lettuce outbreak and concerns about reaching consumers before they eat contaminated food, the CDC is working with Walmart to develop a blockchain approach to track every head of lettuce.

Consumers continue to demand more information about food sourcing, environmental stewardship, and impact in food selection. Farm to food processes, such as vertical farming, urban farming, and water reuse, are among the most important trends in food marketing. Consumers want to know more about how their food was produced, including information on origin, environmental practices, the role of genetic engineering, and the presence of specific chemicals and antibiotics. More transparency will be demanded by consumers in the future.

The many food recalls listed by the U.S. Food and Drug Administration in 2018 show some concerning patterns that speak to the state of food supply chain transparency.

1. **Outsourcing and Sourcing:** Many processed food items are made by contractor firms that also source processed ingredients, unknown to the customer. For instance, Ukrop’s announced a recall of its deli saved five confirmed deaths. Other large-scale food recalls involved Salmonella contaminations at its ham provider, Johnston County Hams of Smithfield. To Ukrop’s credit, they also recalled all items produced on the same equipment during the suspected contamination from the ham. Of course, this led to far more food being recalled, even items that contained no ham, showing how highly centralized food processing facilities can actually contribute to the spread of foodborne illness, due to the sharing of facilities. This case, and others like it, are a reminder that our food supply is increasingly complex, integrated, and subject to product sourcing and replacement without full vetting or testing. Foodborne illness threats increase as the contaminated food passes through processing facilities.

2. **Large and Small Processors:** Both large and small food processing firms are impacted by food recalls. This is important to keep in mind, as small firms may be perceived as healthier or more focused on their craft and perhaps more aware of what goes into their products. Often small food producers utilize the same large industry food facilities, which are more economical. Diligence in testing and concern for brand bias is especially necessary.

3. **Pathogens:** E. coli, Listeria, and Salmonella remain common pathogens in food recalls. There is good science in how to control each, but also a clear reminder that diligence, testing, and knowledge of food ingredients are still very much needed. Understanding the sourcing, handling, and pathway of food items will be critical in avoiding foodborne disease.

4. **Allergens:** Known allergens are appearing in unexpected food items, milk, soy, egg, tree nuts, peanuts, and wheat appear unexpectedly in beverages, desserts, processed food, and ready-to-eat dishes. For those highly sensitive to such allergens, counting on food labels can be dangerous. More must be done to incentivize suppliers and processors to report allergens. The fact that there is such blatant allergen mislabeling suggests food fraud. That is to say, ingredients are being deliberately omitted in a manner to manipulate and mislead the buyers and ultimately the end consumer. More economical tests for allergens before food ingredients enter the food supply chain are needed.

The U.S. Food and Drug Administration has provided a new and powerful resource to help consumers manage food recall risks. In September of 2018, now former FDA Commissioner Scott Gottlieb announced the agency would begin publicly disclosing retail locations that may have sold or distributed recalled food. This helps consumers tremendously, especially in prepared foods and sliced fruits, which may be prepared on-site. Previously, the FDA kept such information confidential. This change in disclosure will put pressure on retail locations to demand more information from suppliers. It may also force retailers to take a more aggressive role in food safety and food supply chain transparency.

With viral social media postings and cameras on every phone, the poor food safety practices of a restaurant are easily shared with the world. Some of the greatest food safety risks come from poor worker hygiene, bringing even more focus on food operators and worker conditions. Customers appreciate food safety grades and warnings at restaurants, but with over 99.9 percent of restaurants earning an “A” grade, many people are left wondering if safety grades are enough.

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Food fraud remains an issue and contributes to the mislabeling of allergens in food.

Stronger economic incentives are needed to reward food suppliers and restaurants to demand more detail on food sourcing and transparency in food reporting.

**IN SUMMARY:**

- Food-borne illnesses are highly tied to large-scale food processors.
- Food fraud remains an issue and contributes to the mislabeling of allergens in food.
- Stronger economic incentives are needed to reward food suppliers and restaurants to demand more detail on food sourcing and transparency in food reporting.