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The Great East Japan Mega Disaster was an unprecedented event in Japanese history that caused widespread destruction and the loss of 20,000 lives.¹ Despite the catastrophic nature of the event, many deaths were averted and additional harm was reduced as a result of several structural and nonstructural mitigation measures and a collaborative response. Japan's previous experience with earthquakes granted them intimate knowledge of the importance of strong and resilient infrastructure. Strict building codes were in place before the disaster, ensuring new constructions were earthquake-resistant and older buildings retrofitted with energy dissipation units and base isolation pads. Many systems were retrofitted with seismic-resistant technologies and piping to protect the water supply and sanitation systems.¹ Additionally, the internet connection was sustained with limited interruptions because of redundant telecommunications infrastructure.¹ Many efforts were amended and revamped after the disaster to better prepare for future similar events. These efforts included building F-grids to ensure energy is available during power outages which have doubled as measures to improve energy efficiency during non-disaster times.¹ Building codes and regulations were also updated to further fortify structures to be earthquake resistant with new amendments to the Building Standard Law/Seismic Retrofitting Promotion Law.²

In addition to the structural mitigation efforts, many nonstructural measures also helped the community react and respond to the disaster. Early warning systems and evacuation plans helped many residents evacuate high-risk areas quickly and efficiently. The "Urgent Earthquake Detection and Alarm System" (UrEDAS) allowed the safe halting of several train lines by activating emergency brakes once warning signals were detected.¹ These emergency warning systems have been updated and invested in after the megadisaster to achieve 100% adoption in all cities and improve the accuracy of warnings.¹ Community education and the running of simulation drills helped decrease response time and better prepare residents for real disaster scenarios.¹ These drills have also been updated after the event to help respond to new issues that arose during the megadisaster.¹ Memorial events are held annually to remember the lives lost while also reinforcing the importance of disaster management in the community.¹ As they have done with previous events, Japan continues to take the lessons learned from previous disasters to update and better prepare for future events.

References

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2. World Bank. (2018, August 15). Converting Disaster Experience into a Safer Built Environment: The Case of Japan. <https://doi.org/10.1596/30015>