**Slide 1: Accidents by Day of Week**

🔍 **Key Insight**: Accidents peak on **Fridays**, with a sharp drop on **Sundays**.

✍️ **Slide Caption**:  
Road accidents are most frequent on Fridays, likely due to increased traffic volume, fatigue, and end-of-week travel. Sundays show the lowest accident counts.

💬 **Narration / Commentary**:

* The weekday pattern reveals a midweek buildup of incidents, peaking on **Fridays**, possibly due to:
  + Evening commuting rush
  + Social and recreational travel
  + Riskier driving behaviors (e.g., speeding, alcohol use)
* **Sunday** has the fewest reported accidents, reflecting reduced travel and potentially more cautious driving.

🧠 **Implication**:  
Targeted **Friday enforcement** (e.g., alcohol checks, patrols) could help reduce weekend injuries and fatalities.

**Slide 2: Hourly Distribution of Accidents**

🔍 **Key Insight**: Accidents surge during commuting and post-work hours, peaking at **18:00–19:00**.

✍️ **Slide Caption**:  
Accident frequency follows human activity cycles—lowest during the night, rising sharply during **morning rush hour (07:00–09:00)** and peaking during the **evening (17:00–19:00)**.

💬 **Narration / Commentary**:

* The lowest accident risk occurs between **02:00 and 05:00**, likely due to low road usage.
* The first major spike appears **between 07:00 and 09:00**, linked to school and work commutes.
* A second, **more dramatic peak occurs at 18:00**, possibly due to:
  + Fatigue at the end of the workday
  + Rushed driving
  + Increased traffic volume
  + Dusk and changing lighting conditions
* After 20:00, accident rates steadily drop.

🧠 **Implication**:  
Strategic traffic enforcement and awareness campaigns around **morning and evening peaks** could mitigate high-risk hours, especially **18:00–19:00**.

### **📊 Slide 3: Monthly Trend of Accidents (2009–2012)**

🔍 **Key Insight**: Accidents spike seasonally—often around late spring and autumn—with a **declining trend overall**.

✍️ **Slide Caption**:  
Between 2009 and 2012, accident peaks consistently occurred in May–June and October, suggesting seasonal risk cycles tied to commuting patterns, weather shifts, and holiday transitions.

💬 **Narration / Commentary**:

* All four years highlight monthly peaks in either September or October, with October emerging as the most frequent danger point.
* These spikes are likely tied to:
  + Back-to-school and work commutes resuming
  + Worsening weather conditions and reduced daylight
  + Increased congestion after holiday periods
* The dashed loess trend line indicates a gradual decline in accident volume over the 4-year period.
* These observations reinforce the value of seasonal safety campaigns and road preparedness before autumn.

📌 **Implications**:

* Prepare enforcement and prevention campaigns in **late spring** and **autumn**.
* Dig deeper into **October risks**—are they linked to school return, weather changes, or lower lighting?
* Use this trend to guide **resource allocation** and **seasonal forecasting** in traffic management.

### **📊 Slide 4: Accident Density by Hour and Day**

🔍 **Key Insight**: Accidents concentrate during **weekday rush hours**, especially **Fridays at 17:00–19:00**, and shift to late-night/early-morning hours during weekends.

✍️ **Slide Caption**:  
Accident density peaks sharply during **late afternoon commute hours** on weekdays, particularly **Fridays**, while **weekends** show broader, lower-intensity accident distributions.

💬 **Narration / Commentary**:

* **Weekday Trends**:
  + Strongest concentration of accidents from **08:00–10:00** and **16:00–19:00**.
  + **Friday evening (17:00–19:00)** stands out as the **most accident-prone slot** of the week.
* **Weekend Trends**:
  + Saturday and Sunday show **wider accident distributions** across the day.
  + Moderate density continues into **late night and early morning**, possibly reflecting nightlife-related risks.
* This heatmap complements the **hourly** and **daily** charts by revealing **combined spatiotemporal patterns**, useful for enforcement planning and public warnings.

### 📌 **Implications**:

* Enforcement (alcohol checks, speed control) should **intensify on Friday evenings** and during **afternoon hours on weekends**.
* Urban planners should monitor peak-hour **bottlenecks and lighting conditions** at key hours.
* Safety campaigns should **target drivers during these known high-risk slots**, especially before holidays and weekends.

**📊 Slide 5: Geographic Distribution of Accidents  
🔍 Key Message / Theme:  
📍 Urban areas show higher accident concentrations, while rural areas reveal broader but sparser clusters.**

**✍️ Slide Caption (below the chart):  
Urban accidents cluster around major cities; rural incidents are more spread out, particularly in central and southeastern France.**

**💬 Narration / Speaker Notes:  
This density map separates accident hotspots by urban and non-urban settings:**

* **Urban Zones:**
  + **High concentration around Île-de-France (Paris region), Lyon, Marseille, and Bordeaux.**
  + **Reflects dense traffic, pedestrian activity, and urban congestion.**
* **Rural Zones:**
  + **Accidents are more geographically dispersed, particularly in central, eastern, and southern France.**
  + **These often occur on departmental or national roads with higher speed limits and lower visibility.**

**📊 Slide 6: Accidents by Gender and Category**

**🔍 Key Message / Theme:**

**🚗 Men are significantly overrepresented as drivers in accidents, while women are more likely to be passengers or pedestrians.**

**✍️ Slide Caption (below chart):**

**The majority of road accident drivers are male, whereas women appear more frequently as passengers. Pedestrian accident involvement is nearly balanced across genders.**

**💬 Narration / Speaker Notes (or Report Commentary):**

**This grouped bar chart visualizes the gender distribution of individuals involved in road accidents, categorized by their role: driver, passenger, or pedestrian.**

* **Among drivers, male involvement (647,681) is nearly 2.7× higher than that of females (244,086), suggesting riskier driving behavior or higher vehicle usage by men.**
* **In contrast, for passengers, females slightly outnumber males: 109,938 vs. 88,618.**
* **Pedestrian counts are roughly equal across genders: 28,173 (F) vs. 25,162 (M), implying no significant gender difference in pedestrian vulnerability.**

**This distribution may reflect broader mobility and social behavior patterns:**

* **Men possibly drive more frequently or for longer distances.**
* **Women may be more reliant on public transport, or often occupy non-driving roles in vehicles.**

**📊 Slide 6: Driver Age Distribution by Category and Sex**

**🔍 Key Message / Theme:**

🚹🚺 **Males dominate accident involvement across all roles, especially as drivers, while elderly female pedestrians show notable presence.**

**✍️ Slide Caption (below chart):**

Accident involvement skews male across all categories. Elderly women are more represented among pedestrians than in any other group.

**💬 Narration / Speaker Notes (or Report Commentary):**

This tripanel stacked histogram illustrates how **age and gender intersect** in accident data, separated by role (Driver, Passenger, Pedestrian):

**Gender & Age Insights by Role**

* **Drivers**:
  + Male dominance across all ages, especially under 40
  + Female involvement drops with age, likely due to licensing patterns
* **Passengers**:
  + More gender balance overall
  + Women slightly more represented in middle to older ages
* **Pedestrians**:
  + Near gender parity
  + Elderly women (65–85+) overrepresented, reflecting greater exposure and vulnerability

**📊 Slide 8: Age by Day of Week**

🔍 **Key Message / Theme:**  
📅 *Younger drivers are consistently overrepresented across all weekdays, with minor weekend variation.*

✍️ **Slide Caption (below the chart):**  
Young drivers (age 20–35) are the dominant group in accidents across every weekday.

💬 **Narration / Speaker Notes (or report commentary):**  
This violin plot shows how age distribution varies by day:

* Across **all days**, the **median age is centered around 30**.
* There's **little difference in median or spread** between weekdays and weekends.
* **Slightly younger profiles appear on weekends** (Saturday and Sunday), possibly due to leisure driving or nightlife.

The key insight:  
Age is a **strong predictor of accident involvement**, **independent of weekday** — meaning young drivers consistently dominate.

This plot helps **generalize weekday risk factors** across age demographics.

**📊 Slide 9: Age by Hour of Day**

🔍 **Key Message / Theme:**  
🕓 *Accident-prone hours vary by age — but young drivers dominate nearly all times.*

✍️ **Slide Caption (below the chart):**  
Younger drivers (under 35) are the most common across all hours, with peak densities in early morning and afternoon.

💬 **Narration / Speaker Notes (or report commentary):**  
This ridgeline plot shows age distribution per hour of the day:

* **Younger age bands (20–35)** dominate across the full day.
* Notably, their **presence peaks around 08:00 and again at 17:00–18:00**, matching earlier rush-hour peaks (Slide 2).
* **Older drivers (>60)** appear more evenly and modestly throughout the day.

This reinforces prior slides:

* Young drivers are **more exposed** (more driving hours)
* Or possibly **more vulnerable** (risk-taking behaviors)

👥 This plot strengthens the demographic layer of your story by combining **age**, **time**, and **density**.

**📊 Slide 10: Weather During Accidents**

🔍 **Key Message / Theme:**  
🌦️ *Most accidents occur in normal weather, but poor conditions still account for 19% of incidents.*

✍️ **Slide Caption (below the chart):**  
81% of accidents occur in good weather, but light rain, fog, and snow contribute to a sizable share.

💬 **Narration / Speaker Notes (or report commentary):**  
This waffle chart simplifies weather conditions into a 10x10 grid:

* **Normal weather** dominates (81%) — confirming that **driver behavior, not weather**, is often the key factor.
* Still, **light rain (10%)**, **overcast (4%)**, and **heavy rain (2%)** contribute to a meaningful portion of accidents.
* Severe weather (snow, hail, fog, blinding sun) together make up **~5%**.

Despite low frequency, **accidents in adverse weather are often more severe**, which will be discussed in Slides 16–18.

✅ Policy takeaway: **driver education on wet/slippery conditions** remains critical — even when overall incidence is lower.

**📊 Slide 11: Lighting in Accidents**

🔍 **Key Message / Theme:**  
🌗 *Accidents are most frequent in daylight, but nighttime without street lighting presents significant danger.*

✍️ **Slide Caption (below the chart):**  
Most accidents occur during daylight (over 800k), yet poorly lit nighttime conditions remain high-risk zones.

💬 **Narration / Speaker Notes (or report commentary):**  
This lollipop chart breaks down accident frequency by lighting condition:

* **Daylight** dominates with over **805,000 incidents** — not surprising given higher daytime traffic.
* At night, lighting conditions matter:
  + **178,630 accidents** happened *at night with street lights on*
  + **88,031 without lighting**, and **9,356** in areas with lighting *turned off*
* Even **dawn/dusk hours** recorded over **63,000 incidents**

The insight isn’t just volume — it’s **visibility and vulnerability**:

* Lower visibility **correlates with higher injury severity** (to be seen in Slides 16–18)
* Policy focus: lighting audits in rural zones, maintenance of public lighting, and reflective gear for pedestrians

📌 Reinforces earlier themes of environmental risk, especially after sunset.

**📊 Slide 12: Surface Conditions**

🔍 **Key Message / Theme:**  
🛣️ *Most roads are dry during accidents, but wet or icy surfaces are non-negligible contributors.*

✍️ **Slide Caption (below the chart):**  
Normal road conditions account for the majority of accidents, but wet, icy, and snowy roads still show notable shares.

💬 **Narration / Speaker Notes (or report commentary):**  
This horizontal bar chart summarizes road surface states at the time of the accident:

* **900,939 accidents** on *normal/dry* surfaces — reaffirming the earlier theme from Slide 10: **environment is not always to blame**.
* However, **wet roads (183k)** and **icy conditions (~5.7k)** appear in meaningful numbers.
* Smaller categories include:
  + **Snowy:** 4,621
  + **Flooded:** 457
  + **Oil/grease and mud:** minor but noteworthy for niche risk contexts (e.g. heavy vehicles)

🧪 Insight:  
Even small percentages here can correlate with **disproportionately high severity** — especially in winter months or under poor maintenance.

Policy point: **public awareness + timely road treatment** is essential during seasonal transitions.

**📊 Slide 13: Holiday Accidents**

🔍 **Key Message / Theme:**  
📅 Certain public holidays—particularly in spring and early summer—are linked to higher accident counts.

✍️ **Slide Caption (below the chart):**  
Labour Day, Whit Monday, and Victory in Europe Day see the highest number of reported road accidents among national holidays.

💬 **Narration / Speaker Notes:**  
This bar chart compares the number of road accidents occurring on major public holidays in France:

* **Labour Day (672)**, **Whit Monday (626)**, and **Victory in Europe Day (620)** top the list.
* Spring and early summer holidays tend to show higher accident numbers, likely due to:
  + Increased travel and leisure outings.
  + Longer daylight hours leading to more active road usage.
* Holidays like **Christmas (322)** and **New Year (475)** have noticeably lower accident counts, possibly due to:
  + Reduced travel.
  + Heavier enforcement or public messaging during winter holidays.

🔔 Policy takeaway: Timed interventions around national holidays can improve road safety and reduce strain on emergency services.

**📊 Slide 14: Infrastructure Involvement**  
🔍 **Key Message / Theme:**  
🚧 Most accidents occur outside specialized infrastructure, but intersections and ramps remain high-risk locations.

✍️ **Slide Caption (below the chart):**  
The majority of accidents did not involve special infrastructure, yet intersections and ramps account for a significant portion of those that did.

💬 **Narration / Speaker Notes:**  
This horizontal dot bar chart highlights how often different infrastructure types are involved in road accidents:

* **No Infrastructure Involvement:**
  + Over **240,000 accidents** occurred on regular roads without special features.
  + This underscores the need for **broad safety measures** on everyday streets.
* **High-Risk Structures:**
  + **Modified intersections** are the top infrastructure-related setting, with over **16,000 incidents**, likely due to complex navigation, signaling issues, or blind spots.
  + **Interchange ramps** (4,122) and **bridges/overpasses** (3,736) also present notable risk due to **merging complexity** and **speed variation**.
* **Other Observations:**
  + Pedestrian zones, tunnels, and railway crossings are involved in relatively few accidents but may carry **higher severity risks**.

**📊 Slide 15: Accidents by Road Type (Treemap)**

🔍 **Key Message / Theme:**  
🛤️ *Municipal and departmental roads account for nearly 80% of all road accidents.*

✍️ **Slide Caption (below the chart):**  
Municipal (46.5%) and departmental (33.3%) roads dominate the accident landscape in France.

💬 **Narration / Speaker Notes (or report commentary):**  
This treemap visualizes accident proportions by road classification:

* **Municipal roads**: nearly half of all incidents (46.5%) — these are *local roads with dense traffic and varied users*
* **Departmental roads**: 33.3%, representing *interregional connections*
* **Highways**: just 9.8%, despite higher speeds — suggesting *better design or policing*
* Minor shares: **National roads (8.4%)**, **parking lots**, and **off-network locations**

This suggests:

* **Urban planning and local road safety** are **key focus areas**
* **Rural zones still matter** — many fatal accidents happen on departmental roads

📍 This slide links **infrastructure and geography** with **human behavior and risk**.

**📊 Slide 16: Injury Severity Distribution**

🔍 **Key Message / Theme:**  
🚑 *Most accident victims are unharmed or lightly injured — but over 26,000 fatalities highlight the human cost.*

✍️ **Slide Caption (below the chart):**  
Half a million accident participants were uninjured, yet over 210,000 were hospitalized and more than 26,000 killed.

💬 **Narration / Speaker Notes (or report commentary):**  
This bar chart presents a high-level view of the **severity of injuries** sustained in accidents:

* **503,071 unharmed individuals** – suggests that many incidents are low-impact or benefit from safety features (seatbelts, airbags)
* **404,393 minor injuries** – requiring first aid or outpatient care
* **210,558 hospitalizations** – often indicating life-threatening or long-term injuries
* **26,665 fatalities** – representing the **ultimate consequence** of road risk

These numbers:

* Emphasize the **scale of medical impact**
* Frame your story in **public health terms**, not just traffic statistics
* Validate earlier slides on **risk by age, time, and behavior**

🎯 Takeaway: Even with high survival rates, the **burden on emergency services and healthcare** is enormous — prevention saves lives and costs.

📊 **Slide 17a: Severity by Lighting Conditions (Labeled)**  
🔍 **Key Message / Theme:**  
☀️ Most accidents happen in daylight, but **lighting conditions at night dramatically increase severity risk**.

✍️ **Slide Caption (below the chart):**  
Daylight sees the most accidents overall, but night conditions — especially without street lighting — carry a significantly higher risk of death or serious injury.

💬 **Narration / Speaker Notes:**  
This bubble chart reveals not just how many accidents occur under each lighting condition — but how **severe** they are:

* Under **daylight**, we see **805,161 total incidents**, with **15,905 deaths** →  
  🔴 **Fatality rate:** ~1.97 per 1000 accidents  
  🟠 **Hospitalization rate:** ~17.78%
* Under **"night – no street lighting"**, we have **88,031 incidents** with **6,193 deaths** →  
  🔴 **Fatality rate:** ~70.36 per 1000 accidents  
  🟠 **Hospitalization rate:** ~28.32%

That means you're **~35x more likely to die** in an accident occurring at night without lighting than during the day.

Even **"night – street lighting on"** fares better (2,440 deaths in 178,630 accidents → ~13.7 per 1000), confirming that **lighting saves lives**.

📌 So while daylight has more accidents due to traffic volume, **lighting conditions at night correlate more strongly with injury severity**.

📊 **Slide 17b: Severity by Surface Condition**  
🔍 **Key Message / Theme:**  
🚧 Hazardous road surfaces—though less frequent—carry **a disproportionately high risk** of death and serious injury in traffic accidents.

✍️ **Slide Caption (below the chart):**  
Dangerous surfaces such as wet, icy, and flooded roads show significantly higher ratios of fatalities and hospitalizations compared to normal roads.

💬 **Narration / Speaker Notes (or report commentary):**  
This bubble chart visualizes how road surface condition affects injury outcomes. Although **most accidents (nearly 1.4 million)** occur on **normal surfaces**, the risk per incident changes dramatically under hazardous conditions:

* **Wet roads**, with ~183,000 accidents, show a **fatality ratio of 25.67 per 1,000** – almost **2x higher** than on normal roads.
* **Icy roads**, while accounting for just ~15,500 cases, result in **over 20 deaths per 1,000 incidents**, a marked increase in severity.
* The most extreme example is **flooded roads**, which—despite being rare (~427 cases)—have a **fatality ratio of 65.6 per 1,000**, nearly **5x** higher than average.

Additionally, **oil/grease** and **muddy surfaces** also exhibit elevated risks, reinforcing that even “minor” surface issues have serious outcomes.

🔁 The same holds true for **hospitalizations**, with wet, icy, and flooded roads showing **13–20% hospitalization rates**, versus ~12% on normal roads.

This has **strong implications for road safety planning**:

**📊 Slide 18: Age by Injury Severity (Ridgeline)**

🔍 **Key Message / Theme:**  
🧓 *Older drivers are more likely to die or be hospitalized in accidents — younger ones more often escape unharmed.*

✍️ **Slide Caption (below the chart):**  
Injury severity correlates with age: fatal and serious injuries rise with age, while minor or no injuries are more frequent among the young.

💬 **Narration / Speaker Notes (or report commentary):**  
This ridgeline chart shows the **distribution of ages** for each injury outcome:

* **Unharmed and minor injury peaks**: age **20–35**
* **Hospitalizations and fatalities**: shift sharply right, peaking at **60+**

Insight:

* **Older drivers** are more vulnerable to trauma
* **Young drivers** may crash more (Slides 6–9), but **survive more often**
* Could reflect **physical fragility**, **reaction time**, or **medical recovery issues**

This informs:

* **Age-specific safety tech**
* Licensing policies for older drivers
* **Preventive screening and awareness programs**

📌 It completes the **demographic-risk-severity triangle** started in Slides 6–7.

**📊 Slide 19: Severity by Vehicle Category**

🔍 **Key Message / Theme:**  
🛵 *Motorcycles and heavy vehicles show a higher share of severe outcomes — cars offer better protection.*

✍️ **Slide Caption (below the chart):**  
Two-wheelers and trucks have a higher proportion of deaths and hospitalizations; cars and buses skew toward lower injury rates.

💬 **Narration / Speaker Notes (or report commentary):**  
This stacked proportional bar chart relates injury severity to vehicle type:

* **Motorcycles and scooters** show **the most severe outcomes** per capita
* **Trucks** also have a disproportionate share of serious injuries
* **Cars** show more **“unharmed” outcomes** — suggesting structural safety benefits (e.g., airbags, crash zones)
* **Buses and trams** record the **lowest severity**, likely due to low speeds and professional drivers

📌 This slide bridges:

* **Vehicle design and policy (safety standards)**
* **User behavior and risk (e.g. helmet use, visibility)**
* Insurance considerations (rate structures by vehicle type)

**📊 Slide 20: Safety Equipment Usage**

🔍 **Key Message / Theme:**  
🪖 *Most accident participants wore safety gear — but tens of thousands still didn’t.*

✍️ **Slide Caption (below the chart):**  
Over 900,000 drivers reported using safety equipment; however, more than 31,000 did not, and 180,000 cases were undetermined.

💬 **Narration / Speaker Notes (or report commentary):**  
This bar chart summarizes **seatbelt and helmet usage**:

* **908,864** reported equipment use
* **31,351** explicitly did *not* use it
* **179,927** are listed as *unknown*

Even though **non-use represents a minority**, the **impact is disproportionately high** — as shown in Slide 24.

This plot introduces the **behavioral safety dimension**:

* **Awareness campaigns**
* **Enforcement and fines**
* **Standardized reporting fields** in police forms

📌 It sets up the punchline delivered in the next slide.

**📊 Slide 21: Travel Purpose**

🔍 **Key Message / Theme:**  
🎯 *Leisure travel accounts for the most accidents — exceeding work, school, or errand-related driving.*

✍️ **Slide Caption (below the chart):**  
Leisure-related travel leads all other purposes in accident volume, with over 428,000 cases — nearly 3.5× higher than commuting.

💬 **Narration / Speaker Notes (or report commentary):**  
This bar chart reveals **the reason for travel** during accidents:

* **428,110 leisure/recreation trips** involved in accidents — the highest by far
* **Work commutes (120,307)** and **on-the-job driving (81,000+)** follow
* Other common purposes:
  + **Errands/shopping (52,000)**
  + **School-related (20,000+)**
* Nearly **300,000 cases had unknown travel reasons**, which reflects a data quality challenge

Key takeaway:

* Leisure travel often happens on **weekends, at night**, and on **longer routes** — aligning with earlier time and behavior patterns (Slides 4, 9, 13)

Policy implications:

* **Targeted awareness** around **weekends and holidays**
* **Insurance profiling** based on trip type (commercial vs leisure)
* Incentivizing **public transport or alternatives** during high-risk recreational windows

📌 This plot builds the behavioral and lifestyle component of your story.

**📊 Slide 22: Collision Types**

🔍 **Key Message / Theme:**  
🚗 Side and rear-end collisions are the most common crash types, but varied collision scenarios demand diverse safety interventions.

✍️ **Slide Caption (below the chart):**  
Most accidents involve side or rear-end collisions, reflecting common driving dynamics in traffic and urban settings.

💬 **Narration / Speaker Notes:**  
This horizontal dot bar chart displays the frequency of different collision types recorded in French road accidents:

* **Dominant Types:**
  + **Other collisions** (89,820) lead in total count, indicating scenarios that don’t neatly fall into common crash patterns—e.g., involving parked vehicles, infrastructure, or stationary obstacles.
  + **Side collisions** (78,630) and **rear-end crashes** (30,561) are the next most frequent, often occurring at intersections, during lane changes, or in traffic congestion.
* **Less Frequent but Riskier:**
  + **Head-on collisions** (25,785) are less common but tend to result in higher severity injuries.
  + **Multi-vehicle** and **chain collisions** involving 3+ vehicles (8,000+) can indicate poor visibility, speeding, or sudden braking on high-speed roads.
* **No Collision Cases:**
  + Nearly **30,000 cases** report no collision—these may involve rollovers, solo accidents, or evasive maneuvers that still result in injury or damage.

**📊 Slide 23: Vehicles Involved**

🔍 **Key Message / Theme:**  
🚗 *Cars are the most involved vehicle type by far, followed by two-wheelers and light trucks.*

✍️ **Slide Caption (below the chart):**  
With over 748,000 cars involved, this chart confirms their dominance in road traffic. Two-wheelers follow with high accident involvement.

💬 **Narration / Speaker Notes (or report commentary):**  
This horizontal bar chart shows the **total vehicle types involved in accidents**:

* **Cars (748,358)** dominate due to **volume and availability**
* **Scooters, mopeds, and motorcycles** come next — confirming their **exposure and vulnerability** (see Slide 19)
* **Light and heavy trucks** follow, important due to **mass and momentum**
* **Bicycles, buses, and agricultural vehicles** are present in smaller but notable quantities

Insights:

* Sets **baseline risk exposure** for severity analysis (Slide 19)
* Informs **fleet regulation, safety checks**, and **urban mobility policy**

📌 This chart answers: *“What kinds of vehicles are involved most often?”* and reinforces your risk landscape.

**📊 Slide 24: Injury Severity by Safety Equipment Usage**

🔍 **Key Message / Theme:**  
🛡️ *Not using safety equipment significantly increases the likelihood of severe or fatal injuries.*

✍️ **Slide Caption (below the chart):**  
Injury severity is clearly affected by safety equipment usage. Non-usage is linked to a much higher proportion of deaths and hospitalizations.

💬 **Narration / Speaker Notes (or report commentary):**  
This proportional bar chart shows how the **presence or absence of safety equipment** affects **injury outcomes**:

* **Used equipment**: nearly **45% unharmed**, with **low fatality and hospitalization rates**
* **Not used**: dramatically **higher proportion of serious and fatal injuries**
* **Unknown usage** shows an ambiguous middle ground — underscores the need for better data collection

Key conclusion:

* Equipment like **seatbelts and helmets** drastically **reduces harm**
* This plot **validates** your safety message from Slide 20
* Final confirmation of the **“human behavior > environment”** thesis

🚨 This is the **final and most conclusive behavioral slide**, tying together age, vehicle type, time of day, and infrastructure to **predict injury outcome**.

**📊 Surface Conditions**

🔍 **Key Message / Theme**:  
🌧️ Wet and hazardous surfaces increase accident risk, but **most crashes still occur on dry roads**.

✍️ **Caption (below plot)**:  
Most accidents occur on normal road surfaces, but **wet, icy, and snowy conditions**, while rarer, **pose increased safety risks**.

💬 **Narration / Speaker Notes**:

* Over **213,000 accidents** occurred on dry roads, confirming again that **driver behavior** is the primary contributor to accidents.
* However, **wet surfaces (44,574 cases)** account for 17% of known conditions, and **icy roads** contributed over **2,000** incidents.
* Small but **non-negligible risks** are visible for **snowy, greasy, and flooded roads** — these must be prioritized during winter readiness campaigns.

**📊 Lighting in Accidents**

🔍 **Key Message / Theme**:  
💡 Lighting levels impact visibility and risk, especially at night.

✍️ **Caption (below plot)**:  
**Most accidents occur in daylight**, but **poor lighting at night** still contributes to tens of thousands of collisions.

💬 **Narration / Speaker Notes**:

* Nearly **188,099** accidents occurred in **daylight**, simply due to high traffic volume.
* However, accidents in **poorly lit or unlit night conditions** (over 20,000 cases) show elevated risks, particularly in **rural zones or faulty urban lighting**.
* **Street lighting helps mitigate risk** — e.g., night accidents with lights on (**45,848**) are twice as common as those with no lighting (**20,825**) — but still hazardous.
* This plot supports policy actions like **upgrading lighting infrastructure** and **targeting nighttime driving behavior** in awareness campaigns.