The Use of Social Media for Collecting Real Time Clinical Information: The Syrian Case

The Syrian civil war began in 2011.

Reports on chemical weapons use were accompanied by civilian video footage that was uploaded to social media sites.

These records enabled a new approach to learn about the regime’s CWA use and its implications.

In 2014 the IDF CBRN medicine branch published its findings regarding the nerve agent mass casualty event in Damascus on August 21st 2013.
Methods

Authors searched YouTube for videos uploaded of this attack and identified 210 videos. Of these, 67 met inclusion criteria and were evaluated in the final analysis.

- **Keywords** used: “Syria”, “sarin”, “nerve agents”, “August 21st” in English or Arabic.

- Exclusion criteria included casualties with combined trauma, low quality clips and videos that included only fatalities.

- Most of these videos are no longer available online on YouTube.
Methods

- Two CBRN specialists separately analyzed the videos.
- Blinding was assured by hiding the title of the clips and by inserting un-related but similar videos involving other toxidromes.
- Inconsistencies in analysis was settled by a 3rd CBRN specialist.
Findings of CWA
Use in Social Media
Aleppo County, March 19th 2013

- 1st verified use of sarin.
- Stuporotic casualty, with copious secretions and dyspnea.
- Victim was not undressed → decontamination was not performed.
- Care giver is not wearing gloves → PPE was not used.
- Note that miosis was not demonstrated.
Jobar - Damascus, April 7th 2013

- No decon, no PPE.
- Miosis is well demonstrated.
Sheikh Maqsoud – Aleppo, April 13th 2013
Saraqib - Idlib, April 29th 2013

- Note the thick copious secretions.
Adra - Damascus, May 23rd 2013

- First documentation of:
  - Treatment in a medical institute.
  - Decontamination.
- Note the poor quality of decon performed.
- Care givers without protective gear.
Damascus, August 21\textsuperscript{st} 2013

- Mega mass casualty event.
- Abundant detailed video documentation on YouTube.
- Note the large amount of casualties lying on the floor without treatment.
- Note convulsions in the last patient in the clip.
Damascus, August 21\textsuperscript{st} 2013

- According to final reports, 1500 killed in this incident.
Our team classified the injuries according to the IDF CWA medical treatment doctrine:

- OP toxidrome.
- Poisoning severity (mild, moderate, severe).
Video Analysis
Damascus,
August 21st
2013:
Video Analysis

210 YouTube clips were reviewed, of which 67 were eventually included.

100.5 minutes of video showing 130 victims were analyzed.

Results were later compared to the official UN report for benchmarking our results.

Comparison to the Tokyo sarin terrorist attack was performed to evaluate differences between the two events.
Results – Demographics (%)

[Bar chart showing demographics percentages for Men, Women, and Children, with categories for YouTube, UN report, and Tokyo.]
Results – Clinical Findings (%)
Results – Medical Interventions(%)
Conclusions
Conclusions – Personal Protection

- Use of personal protection usually included gloves at the most.
  - Use of gas masks was scarce.
  - Full body protection was not documented.
Conclusions – Decontamination

- Decon was performed in only about 25% of casualties.
  - Mostly performed inside the clinics.
  - Only partial undressing, if any.
  - Use of low-pressure water (mostly from buckets/bottles).
Conclusions – Medical Treatment

- IV administration.
- No IM or automatic injectors used.
- In a few clips the medications are described by caregivers:
  - High dose atropine.
  - No mention of oximes or benzodiazepines.
Summary

Personal Protective Equipment – no designated protective gear.

Decontamination
Mostly inside the clinics, with poor drainage.
No full undressing, no dry decon, no soap used.
Sub-optimal – may have affected severity of injuries.

Medical treatment
No auto injectors.
No oximes and benzodiazepines.
Lack of supportive care (oxygen, suction, ventilators).
Limitations

- Based on movies for propaganda.
- Unable to assess all the victims.
- Clips show minutes and not the entire picture.
- No information about drug doses, length of hospitalization, long term effects etc.
Questions