



Docteur Guy MAZAIRAC
Coordinateur SAMUR
CHR-NAMUR
185, avenue Albert 1^{er}
5000 Namur
Tél. : 081 / 72.67.00
Fax : 081 / 72.67.29
Email : mazairac.guy@skynet.be

“ Lights and Sirens : When Speed Kills”

This is a provocative title and a subject which evokes considerable passion.

On the other hand, for those – Nurses or Doctors - who are not involved in pre-hospital setting- our question seems to be of little interest. For example, an excellent review of the technical problems encountered in Mobile intensive care units was refused as final study work for an emergency nurse although it was later accepted for publication in a French revue article.

So we need to introduce some “science” into the passion.

What about time?

2 questions:

Do we reach the scene sooner if we use lights and sirens?

Is there a benefit to arriving at the scene sooner?

I found 6 papers on this topic published between 1991 and 2001. In five there was a significant gain in time ranging from 1 to more than 3 minutes. In one there was no significant difference in time, but this study was conducted in an exclusively urban area. The real overall benefit seems to be difficult to quantify.

I was unable to find any papers about the clinical benefit of gaining time. Except that we made a review of 5 years of cardiac arrest in our MICU team. There, we found a statistically significant difference on arrival time between survivors and non-survivors. Time from call to the scene was an average of 7.21 minutes for survivors and 10.39 for non-survivors.

This is surely part of the answer:

With light and sirens you go faster.
For some cases or diseases, this may be important.

The other part of the answer is:

In lots of situations, speed makes no difference to patient outcomes.

So, at least, we must drive safely, minimizing risks, when there is no clinical need to hurry.

We have to find ways to improve dispatch centres.

Anyway, calls to emergency systems are often unclear about need of real speed.

We have also to determine what is “acceptable risk”, how to improve vehicles and drivers if studies prove actual unacceptable accident ratio.

I've no report of fatalities in Belgium due to ambulances or MICU crashes.

Two American studies are interesting.

One review of 4 years (87 to 90) in Michigan noted 75 deaths in urgent transport but 34 deaths in non urgent transportation. Unfortunately, we don't know the number of ambulances travels, nor urgent or non-urgent.

One review of 11 years, 1987 to 1997: There were 405 deaths, not known Emergency Use or Non-Emergency Use. This is a rate of nearly 40 deaths each year, this seems really high.

One other review shows that a small percentage of ambulance drivers cause a disproportionate number of accidents. For 51 ambulances, making 180000 missions, 5 drivers account for nearly 90% of all injuries due to ambulance accident. So it seems important to look at your accident datas and your drivers, considering that an ambulance driver who has had caused at least one accident is likely to cause more.

Death and severe injury are difficult to support and it is impossible to justify to killing somebody in the hope of maybe saving another life.

So there really is a problem.

I think it's time now to consider all aspects of this problem. The numerous deaths in non-urgent transportations without lights and sirens prove that there are no simple solutions like "no more speed or warnings".

In 1989, DODSON wrote: "Improved vehicle operations require teamwork among vehicle purchasers, operators, maintenance staff, management, EMS educators and medical crews."

From 1993, a large part of my energy was spent in modifying our vehicles to increase safety. We organized a meeting in 1999 about Security in MICU, making a demand for normalizations of vehicles and procedures.

In 2003, it seems we are speaking in the desert!

An ambulance is NOT a normal light truck with a wounded inside!

The specificity of our work need a specific vehicle, you'll never transport oil in the same truck than cows!

If there are few studies about accident or time measurements, papers about technical problems are quite non-existent.

I found only 4 papers about the driver's skill. What the regulations are in other countries, I don't know. In Belgium, it's just NOTHING; you may drive an ambulance or MICU without ANY specific driving training. But we are not the only shame in the world.

As DODSON wrote, I'm in the passenger's seat 84 days a year. So, during presentation, I'll show you what we've technically done on our cars. Our drivers follow a 3 day driving course oriented for Emergency Vehicle Operator and have a 2 days refresher course each year.

If you're interested, if you've done anything for safety on your vehicle, please feel free to use my Email learning me what you've done, I'll give you all what I've done.

BUT, what Dodson asked for in 1989, what I asked for in 1999, is still waiting.

We, as individuals, but most of all our professional as sociation, have to build working groups to study all technical and educational problems. It seems they cause lots of deaths, and our job is to avoid them.