



FRESH WHOLE BLOOD TRANSFUSION IN POLICE SPECIAL OPERATIONS TEAMS:

A PERSPECTIVE TO REDUCE COMBAT DEATHS IN TACTICAL AUSTERE ENVIRONMENT IN BRAZIL

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“POLICE OFFICER IS SERIOUSLY INJURED AND FOUR CRIMINALS ARE KILLED IN PORTO ALEGRE DURING CONFRONTATION”



*local newspaper translation



CRIMINAL GUNS AND EQUIPAMENTS:

**9MM PISTOLS
5.66 RIFLES
BODY ARMOR**





Image Rio Grande do Sul Military Police website

■ ***“POLICE OFFICER IS SHOT IN CONFRONTATION, AND NEEDS BLOOD DONATION IN PORTO ALEGRE”***

*local newspaper translation





* Image from security camera



**CRIMINAL USING THE SAME
POLICE UNIFORM TO COMMIT
CRIMES LIKE ROBBERY AND
MURDER**

**Criminals killed in
confrontation with the police
in Porto Alegre had rifles and
wore uniforms similar to
those of the Military Brigade.**

In the shooting, a soldier was shot three times and is hospitalized.

*local newspaper translation





F.R.C. 33 Y

POLICE OFFICER



VISIBLE WOUNDS AND TCCC INTERVENTIONS

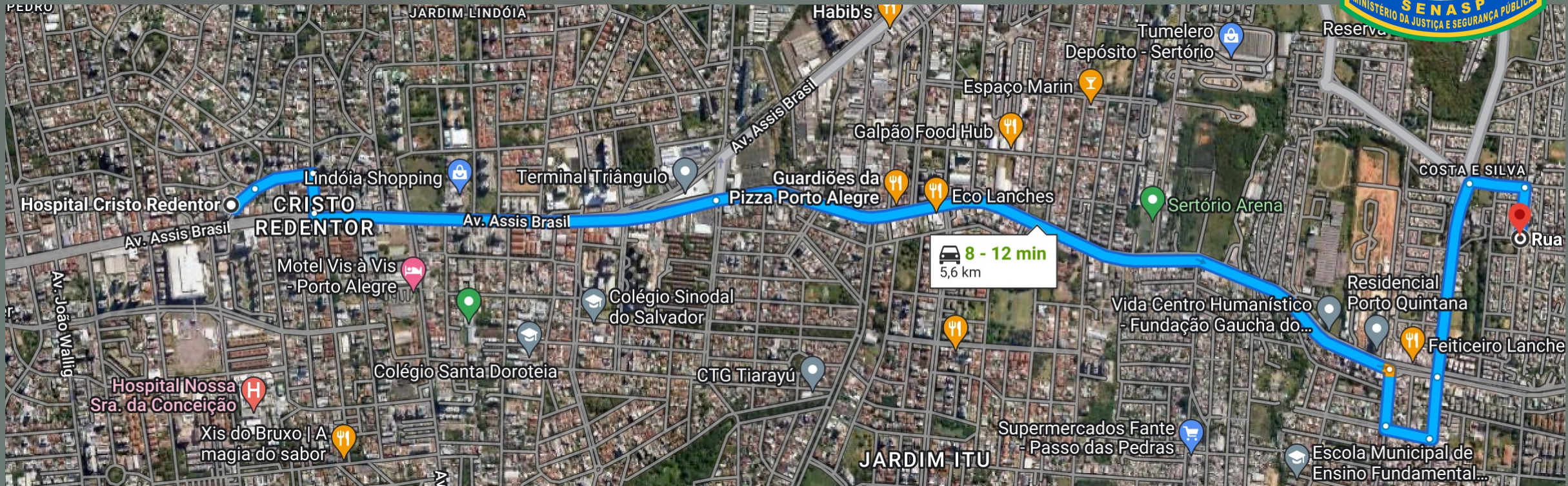
CHEST
LEFT FOREARM
RIGHT LEG
LEFT LEG

CHEST SEAL
TOURNIQUET
TOURNIQUET
TOURNIQUET



EVACUATION

- FAST - POLICE VEHICLE



- AVERAGE DISTANCE 6 KM

- TIME TO TRAUMA CENTER: 10 MIN



EVACUATION



**POLICE OFFICER
BLOOD ON THE
FLOOR AND IN
THE POLICE
VEHICLE**



ER ROOM



- MASSIVE BLEEDING > MULTIPLE WOUNDS > **KEEP TQ**
- **NO ADVANCED AIRWAY INTERVENTIONS**
- CHEST WOUND , NO PTX SYMPTOMS
- **HEMORRHAGIC SHOCK — RADIAL PULSE ABSENCE ,**
TACHYCARDIA, MENTAL CONFUSION

GSW: CHEST, LEFT FOREARM AND RIGHT LEG
(*LEFT LEG WITHOUT LESION)



ER ROOM CARE

- KEEP TQ UNTIL SURGICAL CARE
- 3 WHOLE BLOOD UNITS
- TRANEXAMIC ACID
- NO ADVANCED AIRWAY INTERVENTIONS



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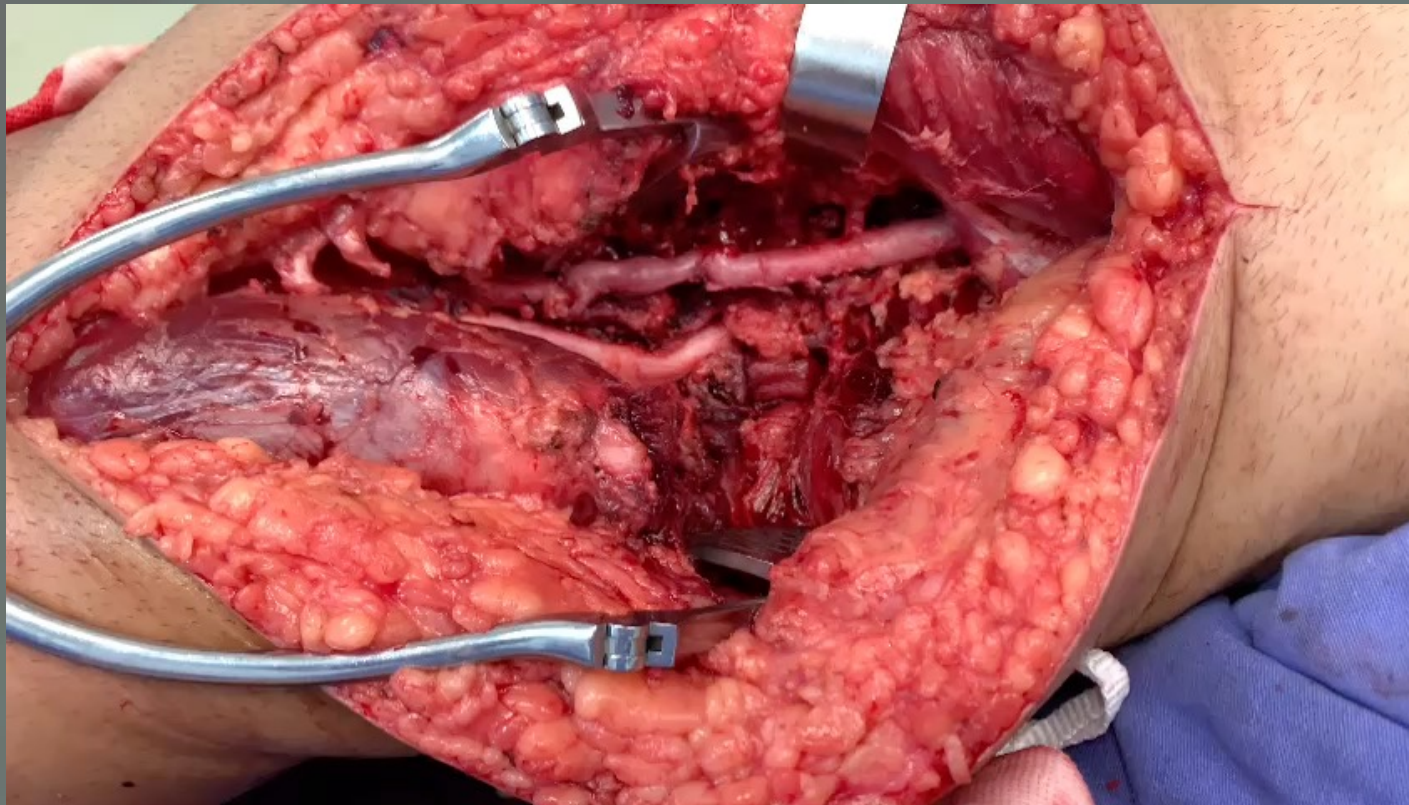
IMPLEMENTAÇÃO DO PROTOCOLO DE
SANGUE TOTAL NO HOSPITAL CRISTO
REDENTOR/RS ESPECIALISTA EM
TRAUMA

IMPLEMENTATION OF
THE WHOLE BLOOD
PROTOCOL IN THE
HOSPITAL CRISTO
REDENTOR/RS TRAUMA
CENTER



INJURY DETAILS

CHEST - STERNUM FRACTURE (NO PTX);
LEFT FOREARM - ULNA FRACTURE (NO VASCULAR LESIONS);
RIGHT LEG - POPLITEAL ARTERY COMPLETE SECTION



POPLITEAL ARTERY AFTER BYPASS



OUTCOME



- POLICE OFFICER ALIVE**
- HOSPITAL DISCHARGE AFTER TWO MONTHS**
- NO LIMB AMPUTATION**
- PATIENT IN REHABILITATION PROCESS TO RETURN TO POLICE WORK**



WHY HE SURVIVED ?

- RIGHT AND FAST TCCC INTERVENTIONS**
- EVACUATION RIGHT TIME (TCCC PERFORMED BEFORE)**
- FAST EVACUATION**
- RIGHT PLACE (TRAUMA CENTER)**



**WHAT IF IT WAS
SOMEWHERE ELSE?**



“Good Medicine in Bad Places”



Edward Horvath



POLICE SPECIAL OPERATIONS UNITS



26 CIVIL POLICE SOF

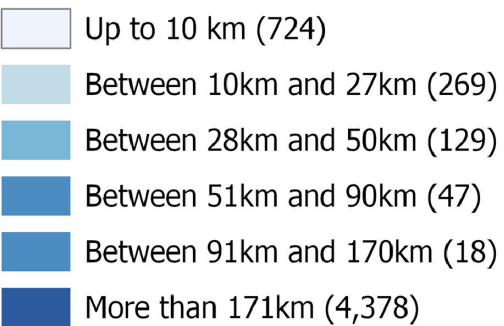
26 MILITARY POLICE SOF

1 FEDERAL POLICE SOF

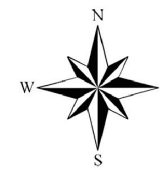
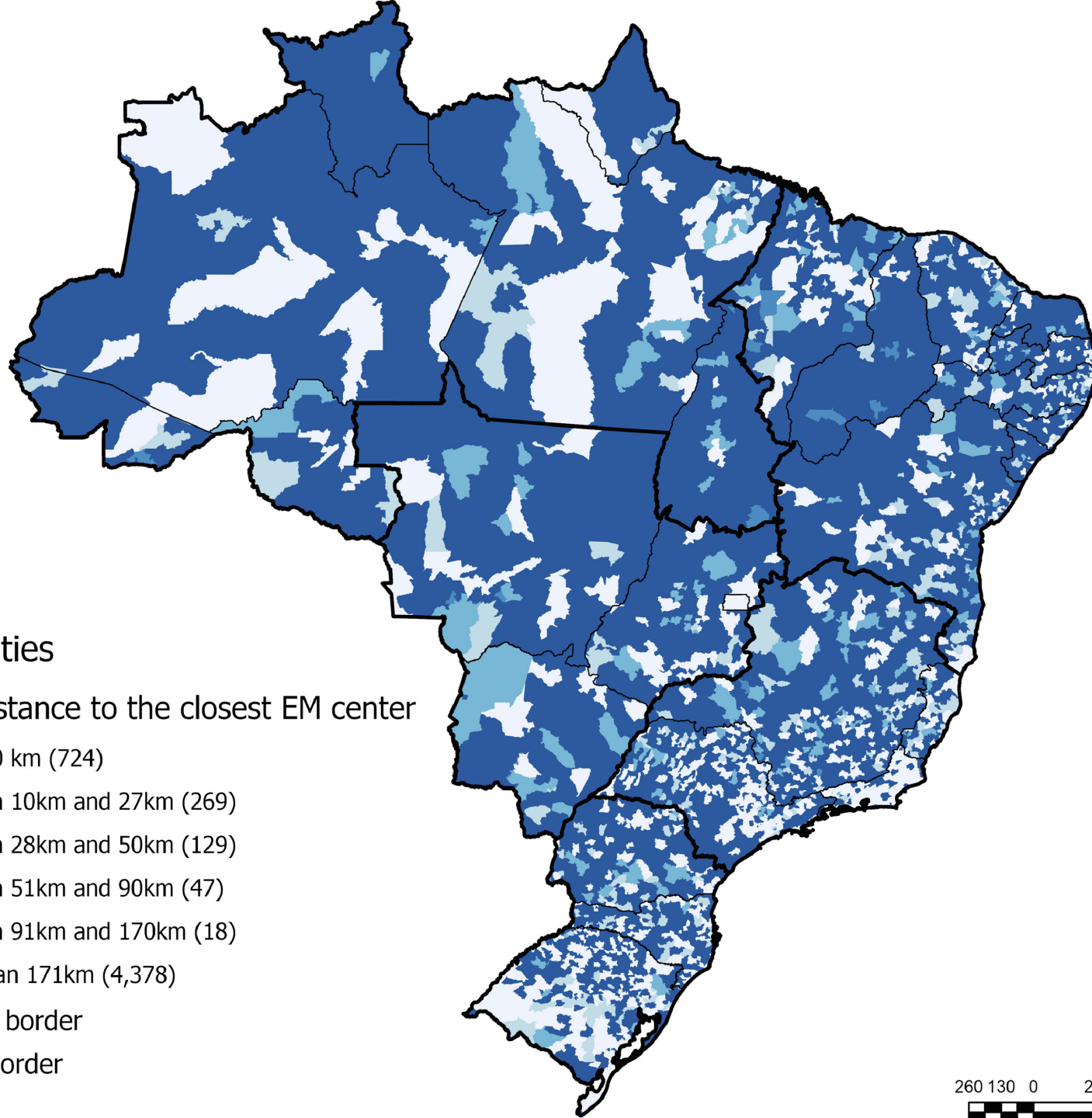


Municipalities

Average distance to the closest EM center



Region border
State border



260 130 0 260 520 780 1.040

Kilometers



THE POLICE TACTICAL UNITS IN BRAZIL, ARE TRAINED TO PERFORM HIGH-RISK OPERATIONS THAT FALL OUTSIDE OF THE ABILITIES OF REGULAR OFFICERS.

- HOSTAGES RESCUES**
- COUNTER-TERRORISM OPERATIONS**
- COMBAT HEAVILY ARMED CRIMINALS**
- BOMB SQUAD**
- HIGH RISK MISSIONS**
- HIGH RISK ENVIROMENTS**



POLICE SPECIAL OPERATIONS GROUP TO COMBAT DRUG TRAFFICKING IN THE AMAZON RAINFOREST



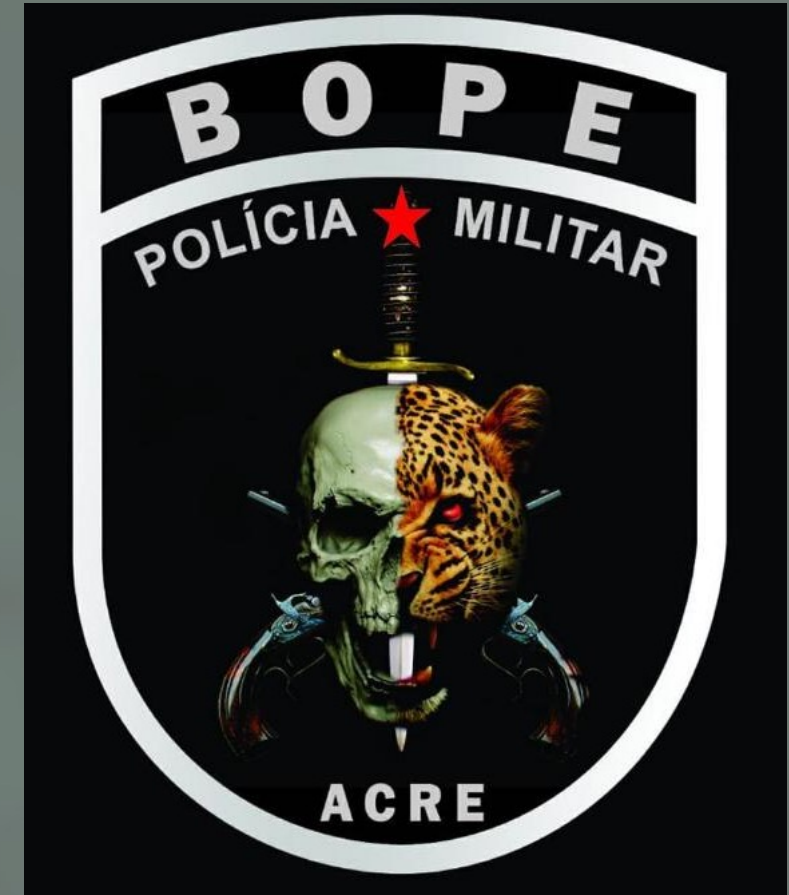
POLICE SOF PATROL TO IN THE AMAZON RIVER



BOAT EVACUATION FOR HUNDREDS OF KILOMETERS CAN BE THE UNIQUE WAY TO REMOVE A WOUNDED VICTIM TO A HOSPITAL



BOPE/AC PATROL TO CATCH NARCOS INSIDE THE FORREST





FIND LANDING AREAS TO PERFORM A OFFICER WOUNDED FAST HELICOPTER
EVACUATION CAN TAKE A LONG TIME IN THE FORREST



FIGHT AGAINST ILEGAL MINING DEFLORESTATION



THE BOMB SQUAD OF THE FEDERAL POLICE SPECIAL FORCES UNIT USES EXPLOSIVES TO DESTROY PATHS, EQUIPMENT, VEHICLES USED FOR ILLEGAL DEFORESTATION AND MINING THAT CANNOT BE REMOVED FOR LOGISTICAL REASONS



10/12/2022
S 8° 30' 31", W 68° 12' 31"



IN ADDITION TO THE HIGH CHANCE OF CONFRONTATION WITH HIGHLY ARMED CRIMINALS, THE POSSIBILITY OF INJURIES WITH EXPLOSIVES IN AREAS WHERE THE CLOSEST HOSPITAL SUPPORT CAN REACH MORE THAN TEN HOURS, INCREASES THE LIFE RISK OF POLICE SOF OPERATORS

“NOVO CANGAÇO”

A VIOLENT KIND OF A BANK ROBBERY

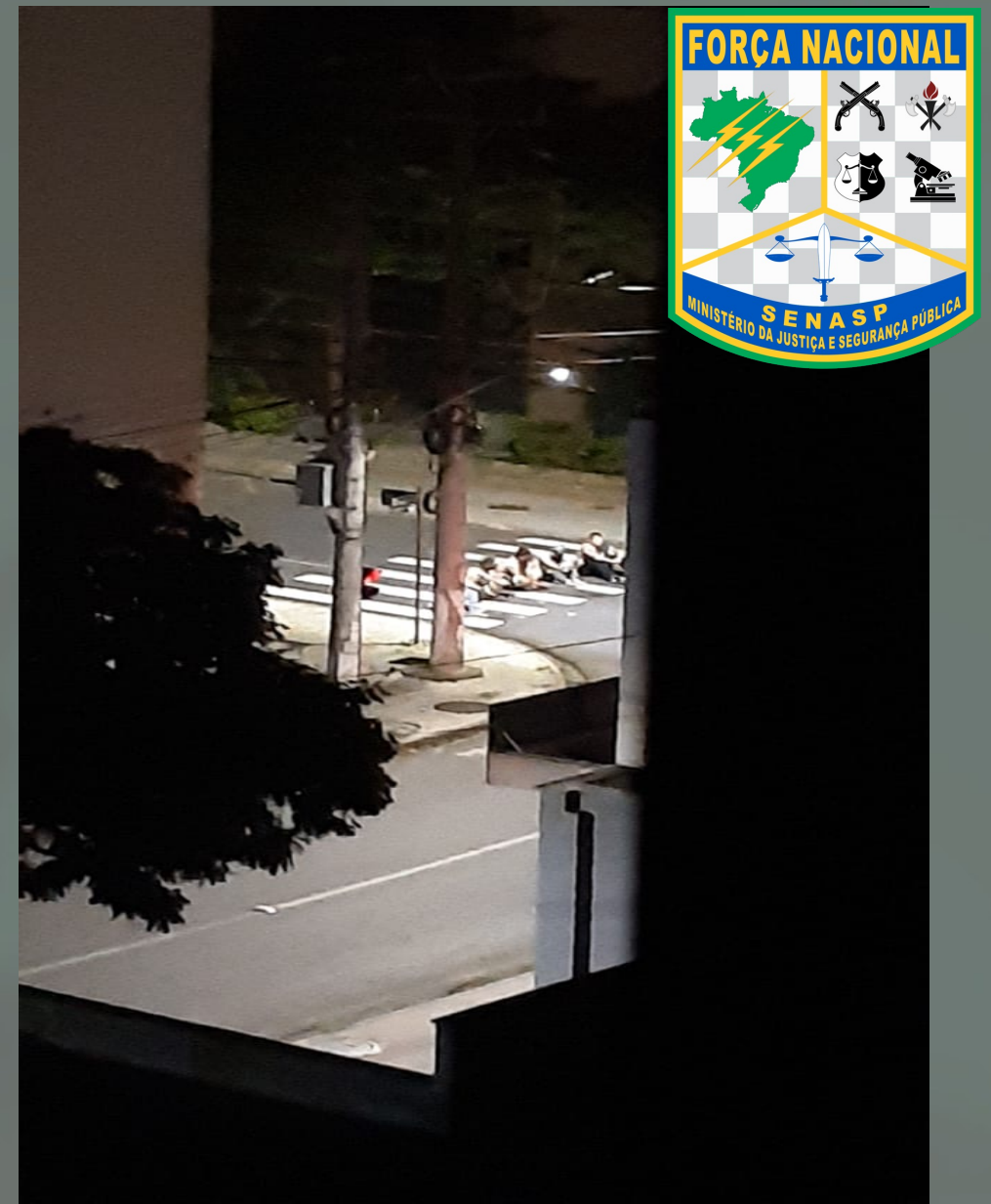


- GROUP OF CRIMINALS TAKE CONTROL OF A SMALL TOWN, USING EXTREME VIOLENCE AND HOSTAGES, TO STEAL ONE OR ALL BANKS IN THE TOWN.

- TACTICS, INCLUDING EXPLOSIVES, BLOCKADES, AND THE USE OF HOSTAGES AS “HUMAN SHIELDS.”



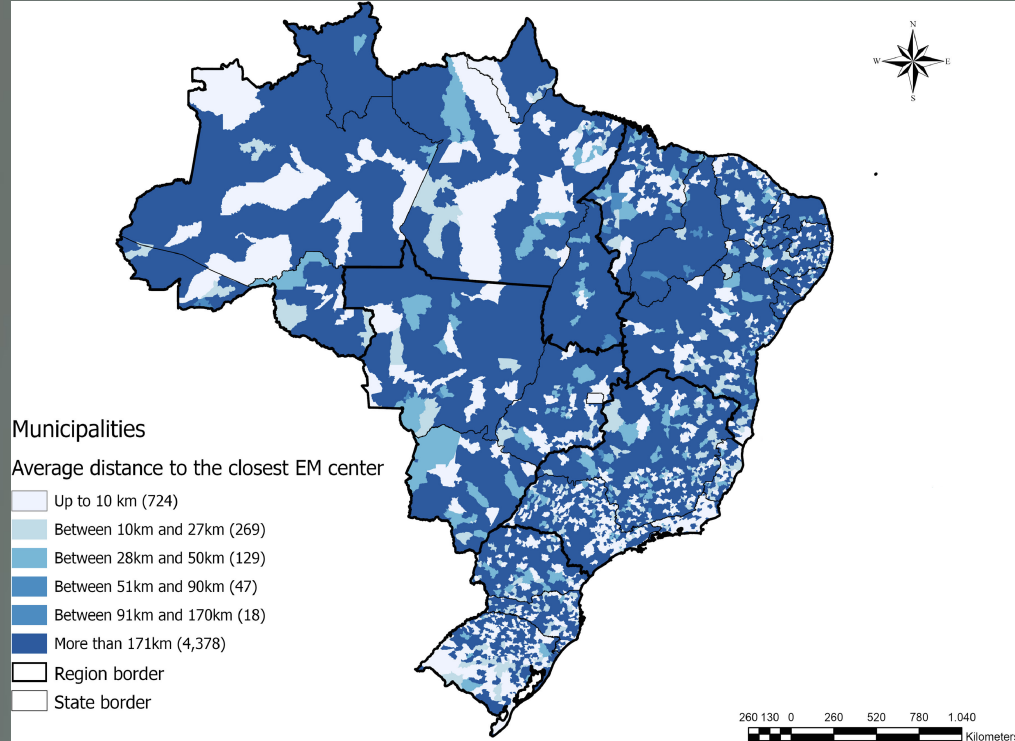
- BANK ROBBERY OCCURS PRIMARILY IN SMALL TOWNS, WITH LITTLE OR NO POLICE SQUADS, WHICH MAKES THIS TYPE OF CRIME CHALLENGING TO BE FACED;
- SMALL CITIES DO NOT HAVE HOSPITALS WITH A STRUCTURE TO CARE FOR WOUNDED IN COMBAT;
- AND EVEN WHEN NEARBY, THE WAY TO A TRAUMA CENTER MAY BE BLOCKED BY HEAVY-ARMED CRIMINALS, DELAYING ATTENTION TO AN INJURED POLICE OFFICER



LOCAL CITIZENS USED AS HUMAN SHIELDS



SALGUEIRO PE



- NO TRAUMA CENTER
- STATE CAPITAL DISTANCE 500 KM
- NO BLOOD BANK AVAILIABLE AT LOCAL HOSPITAL



SALGUEIRO PE



Plane robbery attempt in Salgueiro, PE, ends with the death of six bank robbers

According to information from the Federal Police, the group operated in Bahia and Pernambuco. They were trying to steal a valuable transport plane on the runway at Salgueiro airport.

**FEDERAL POLICE SPECIAL
OPERATIONS TEAM**



SALGUEIRO PE



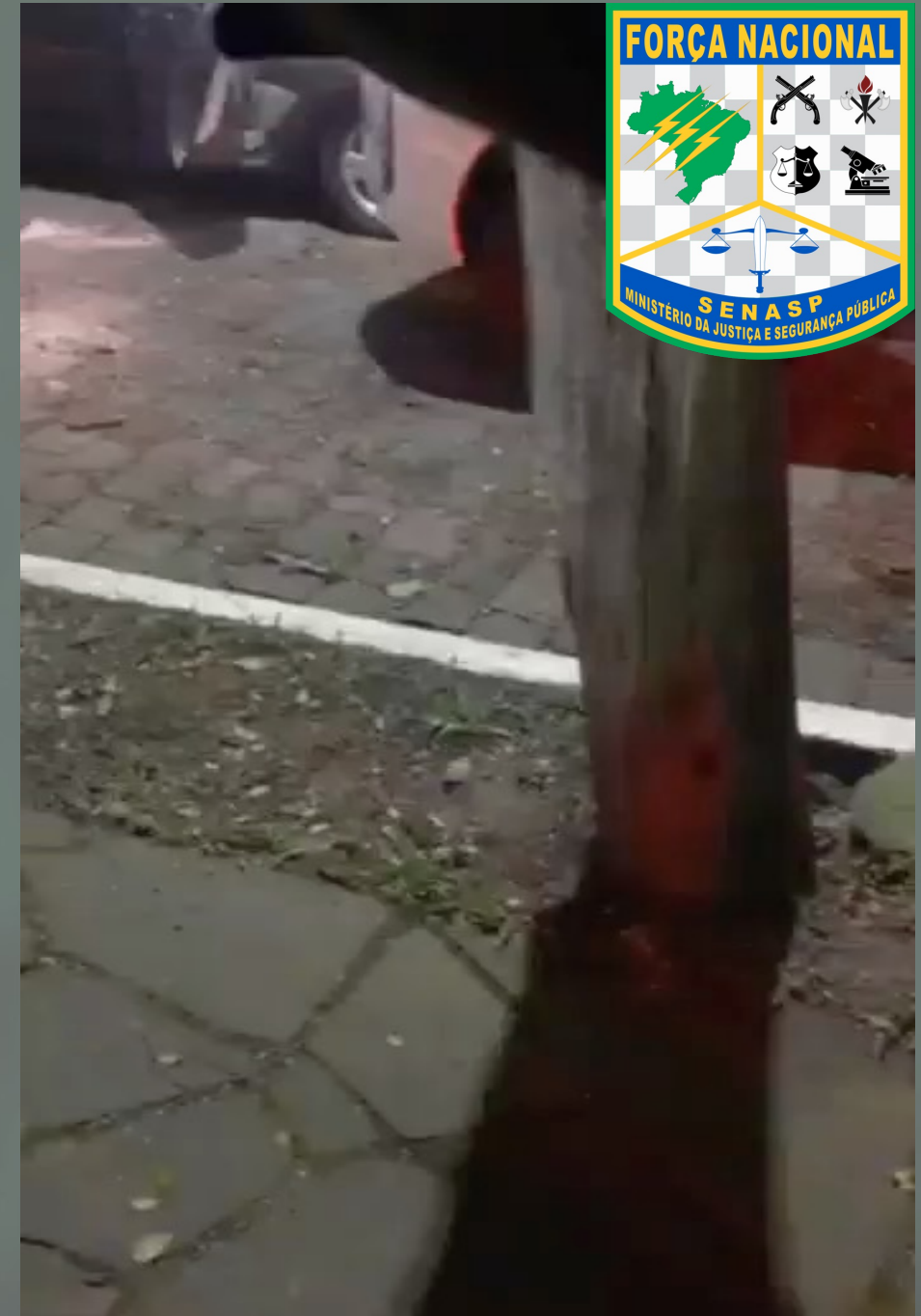
**CRIMINALS POSSESSED WEAPONS USED IN WARS SUCH AS
A .50 CALIBER MACHINE GUN**



**IS HE SURVIVED IN AUSTERE
SETTING ?**

**OUR TRAINING FOR POLICE SOF
ARE ENOUGH?**

WE NEED MORE!!



POLICE SOF
HI-DANGER CONFLICT



+

AUSTERE OR FEW MEDICAL RESOURCES
PLACES

+

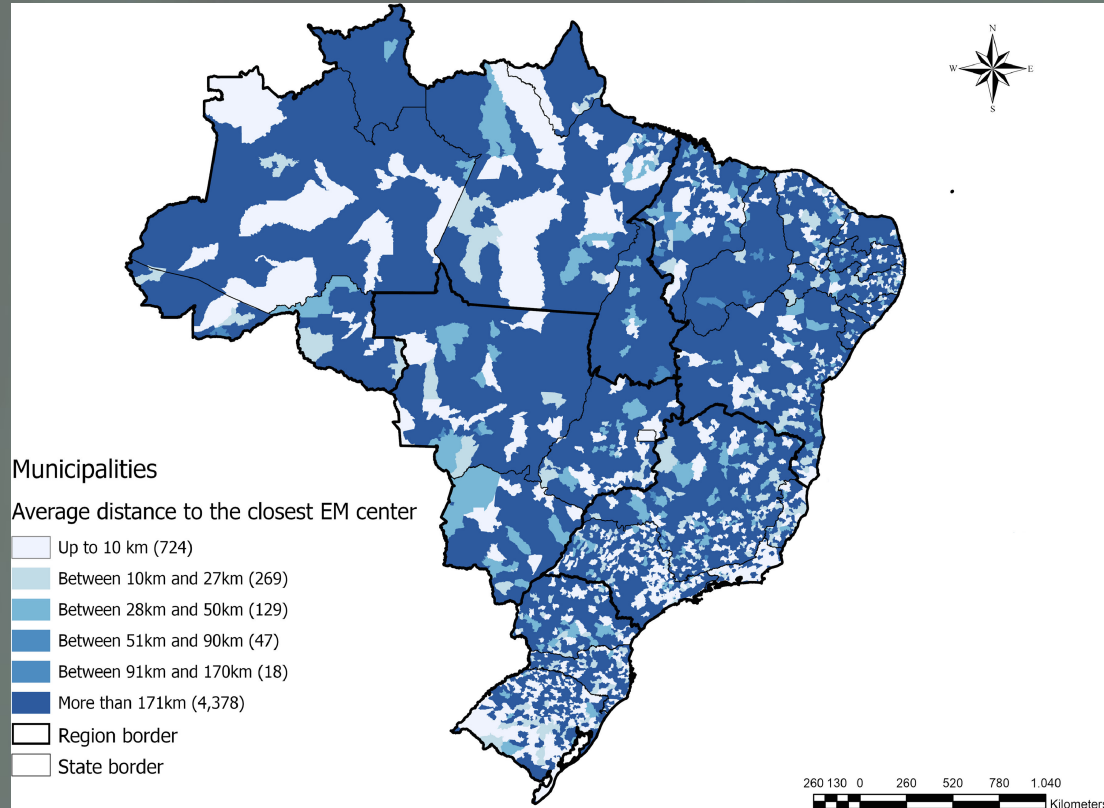
LONG TIME TO EVACUATION

=

BAD OUTCOMES



PORTO XAVIER



- NO TRAUMA CENTER
- STATE CAPITAL DISTANCE 600 KM
- NO BLOOD BANK AVAILIABLE



PORTO XAVIER

Police officer shot dead after confrontation with group suspected of attacking bank in Porto Xavier

Private Fabiano Heck Lunkes, 34, was shot in the chest and the bullet went through his bulletproof vest. The Military Brigade was laying siege to a forest in the town of Linha 1º de Março when the criminals opened fire.



PORTO XAVIER

PATROL TO FIND THE CRIMINALS IN AN AREA
WITH FEW RESOURCES



DUE WEATHER CONDITIONS IN THIS AREA A MEDICAL
EVACUATION USING HELICOPTER , ARE NOT AVAILIABLE ALL
THE TIMES



PORTO XAVIER



MOVING AN INJURED POLICE OFFICER TO THE NEAREST HOSPITAL CAN TAKE MORE THAN TWO HOURS.



**TACTICAL COMBAT CAUSALITY
CARE IS THE STANDARD OF
CARE FOR THE VAST MAJORITY
OF MILITARY AND POLICE
SPECIAL OPERATIONS UNITS.**



POLICE SOF SKILLS

**-CONTROL OF COMPRESSIBLE
HEMORRHAGE**

-SECURING AN AIRWAY,

-TREATMENT OF TENSION PTX

**-ADMINISTRATION OF
TRANEXAMIC ACID,**

-AVOIDANCE OF HYPOTHERMIA

HEMORRAGIC SHOCK VICTM



BLOOD & SURGEON



HEMORRAGIC SHOCK VICTIM



BLOOD



HEMORRAGIC SHOCK VICTIM



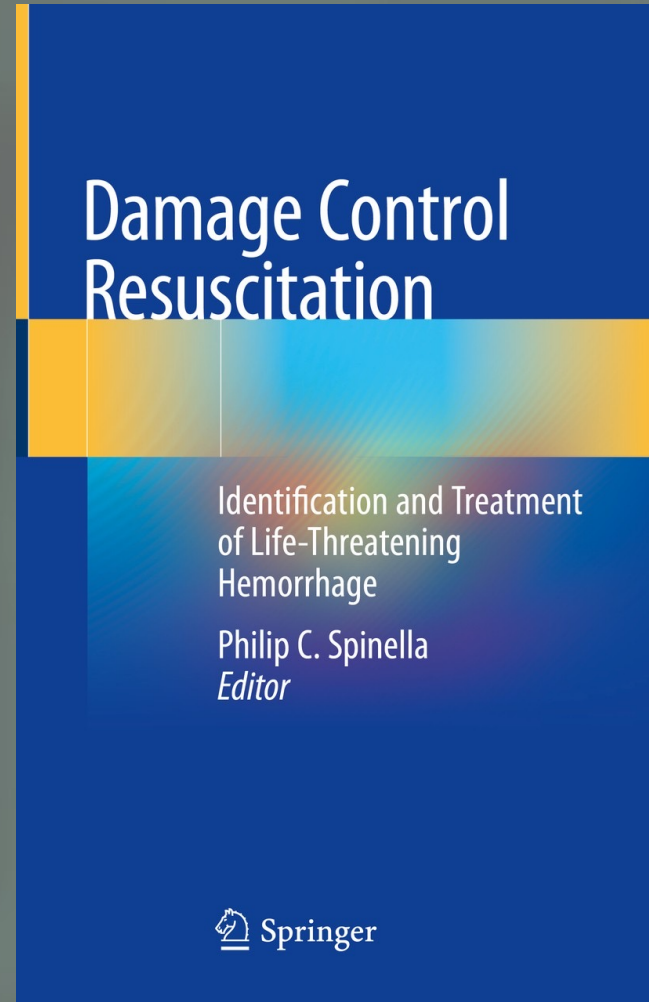
**TIME TO
EVACUATION**



MISSION : IMPROVE SURVIVAL RATE



EARLY BLOOD TRANSFUSION



EARLY = BETER OUTCOMES



EARLY BLOOD TRANSFUSION IN POLICE



- SMALL INFRASTRUCTURE WITHOUT STORAGE EQUIPAMENT;**
- SMALL GROUPS**
- LIMITED EQUIPAMENT**
- LONG TIME MISSION**
- HIGH TEMPERATURES**





FRESH WHOLE BLOOD ON POLICE SOF

- SOF OPERATORS HAVE REGULAR TRAINING TRAINING;**
- TRAINING IN NEW HABILITIES TO PERFORM THE FWW**
- TRANSFUSION TAKE FEW TIME AND RESOURCES**
- SOF OFFICERS HAVE HIGH COMMITMENT AND HIGH**
- MOTOR SKILLS**
- THE MOST SOF TEAMS IN BRAZIL HAVE DOCTORS ON**
- UNIT**



**FRESH WHOLE BLOOD
ON POLICE SOF**

STOREGED TESTED BLOOD

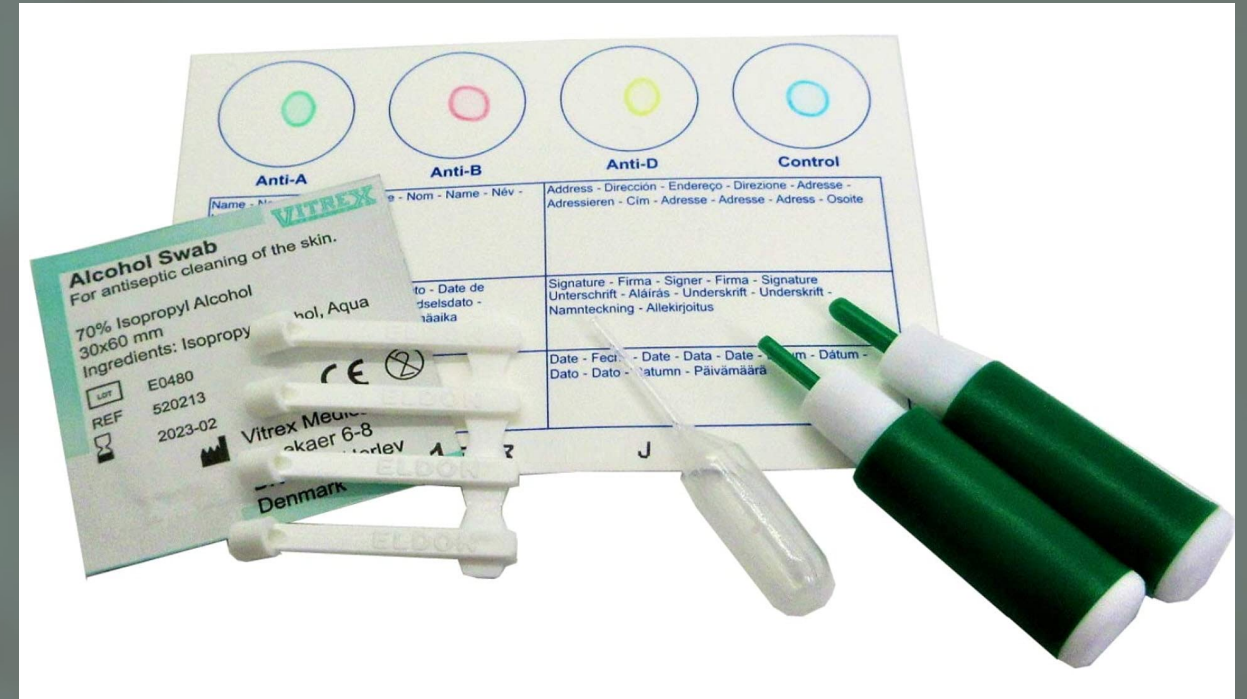
IS THE FIRST OPTION



FRESH WHOLE BLOOD ON POLICE SOF



- PRE-SCREENED LOW TITTER
- 0 DONOS
- NONTITTERED 0
- ABO MATCH



FRESH WHOLE BLOOD ON POLICE SOF

- INFECTIONS DISEASES TEST CAN
BE PERFORMED ON THE CENARIO

- HIGH SENSITIVITY
AND SPECIFICITY TEST

- BIOLOGICAL ACIDENTES
SIMILAR PROTOCOLS CAN BE
USED TO FOLLOW UP DONORS AND
RECIPIENTS



- THE FWW CAN BE USED IN A SMALL CITY HOSPITALS WITHOUT BLOOD AVAILABLE, OR SURGICAL CENTER

- IF NECESSARY DOCTORS IN SMALL HOSPITALS CAN BE ORIENTED BY SOF DOCTORS UNTIL THE EVACUATION TO A TRAUMA CENTER

- HOSPITAL WITH SURGICAL TEAM AVAILABLE**
- NO STORAGE BLOOD AVAILABLE**



FRESH WHOLE BLOOD IN POLICE SOF



- PERFORMED AT THE CENÁRIO
- BUDDY-BUDDY APPROACH
- LIGHT EQUIPAMENT
- FEW COMPLICATIONS



FRESH WHOLE BLOOD IN POLICE SOF



**EASY TO TEACH
NO OTHER TREATMENT
AVAILABLE**



Thanks



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