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INTRODUCTION

The Oakland County Medical Communications system is currently utilized by EMS units and participating hospitals and participating medical free-standing facilities. The function of the system is to provide for on-line medical direction as well as a means for resource management during mass casualty situations. The system consists of two parts:

- A. The **800 MHz Oakland Communications** system for voice and (future date e.g. EKG) communications
- B. **CHORAL** (Computerized Hospital On-Line Resource Allocation Link), a computer network which allows for inter-hospital/FSF messaging and status updates over dial-up phone lines and hospital/FSF status updates broadcast to EMS providers by way of an alpha-numeric paging system.

The Oakland County Communication system is an 800 MHz analog trunked radio system which consists of 14 radio channels pooled into a computer controlled radio network. These channels are provided to the users in an as needed and as available basis method which is undetectable to the users. The computer recognizes requests for access from the users when they key up their radios and coordinates which radio channels are to be used; issuing only the strongest and most available channel at the time of transmission. The users use “talkgroups” to communicate to each other. A “talkgroup” is a “virtual” channel, which the computer uses to connect users on mutual radio channel(s). An alphanumeric display on the radio displays which talkgroup the radio is using. Only other users whose radios have the same talkgroup selected as the transmitting radio can hear the transmitting radios’ transmissions. A scanning function is available to scan multiple talkgroups for transmissions. The radios currently used in the system are desktop radios (control stations) at the participating hospitals/FSF’s, and handheld portable radios carried by the EMS providers. The radios are used to communicate hospital/FSF to hospital/FSF, EMS provider to hospital/FSF, or EMS provider to EMS provider.

The CHORAL (Computerized Hospital On-line Resource Allocation Link), is a system of computers located at the participating and a computer located at the Oakland County Medical Control Authority office. Information is entered into the computers and is sent to the other computers over dial-up telephone lines. The information can be messages sent from one computer to another, or broadcast to all computers on the network. The system is used for updating the status of a participating hospitals/FSFs (rerouting) to all other participating facilities and to providers. The providers receive the status updates over alphanumeric pagers, usually located at their respective dispatch centers. This information assists in the determination of patient destination based on the patient/family preference, patient condition and the destination facilities’ rerouting status.



THE 800 MHz TRUNKED RADIO SYSTEM

System Capability

The Oakland County radio system consists of 14 channels, which provide communications for a number of county agencies. While each agency has access to one or more of its' own talk groups, other agencies cannot monitor these talk groups even though they share the same system.

In order to provide portable radio coverage throughout Oakland County, the system uses 8 tower sites. These towers are located in Pontiac, Rochester Hills, Southfield, Novi, Milford, Springfield, Independence, and Addison. Each tower site simultaneously repeats or "simulcasts" the transmissions of the other sites. This capability allows the system to provide over 90% portable radio coverage within Oakland County including most buildings. The system allows a user with a portable radio in Hazel Park to communicate with a user in Holly. These towers are connected to the computer controller by microwave links to insure reliability.

System users can use portable and mobile radios for field use and control stations where fixed radio equipment is required. Control stations are small radio base stations that operate like mobile or portable radios in the system.

System Features

In addition to providing county-wide radio coverage, the system is equipped with a number of advanced features generally not utilized by conventional public safety radio systems. These include:

- A. **Radio Identification Number** – each radio in the system has a unique identification number that is transmitted each time the push-to-talk is activated. This unit ID is displayed on the hospital control units and recorded on the system log. This number may not match with the number the unit identifies themselves as.
- B. **Selective Signaling** – each portable or mobile radio is capable of sending a signal to a control station, which causes an alert to sound.
- C. **System Analysis Capability** – the system records the ID and length of each push-to-talk in the system. This permits system performance to be monitored and evaluated.
- D. **Talk Group Recording** – all EMS talk groups are recorded at Oakland County.
- E. **Dynamic Regrouping** – county communications personnel can quickly reprogram a single radio or group of radios to another talk group not normally in the radio. This is necessary for units on different talk groups to communicate.



800 MHz TRUNKED RADIO SYSTEM

SAMPLE CALL

- ❖ An ALS unit is dispatched (by their own dispatch center) to the scene of a medical emergency.
- ❖ An AEMT assesses the patient's condition and assigns a priority rating.
- ❖ If medical direction is required, the AEMT determines the participating hospital/FSF preference of the patient.
- ❖ The AEMT selects the appropriate hospital talk group on the 800 MHz trunked portable radio.
- ❖ The AEMT monitors the talk group to determine if the selected hospital/FSF is engaged in a call.
- ❖ The AEMT contacts the hospital.

For Example:

Unit: "Botsford Hospital this is Alpha 738 with a priority 2."

Hospital: Alpha 738, this is Botsford, go ahead."

- ❖ The AEMT proceeds to relay patient information to the hospital/FSF and receive medical direction as required.
- ❖ The AEMT will terminate the call by clearing on the hospital talk group.

For Example:

Unit: "Alpha 738 clear with Botsford."

Hospital: "Botsford clear."



THE EMS COMMUNICATIONS SYSTEM

Objectives

The EMS Communications System of the Oakland County Trunked Radio System has been designed to provide the maximum versatility and redundancy in support of the provision of emergency medical services. The objectives of the talk group assignments are to:

- A. Provide discrete communications between EMS field units and individual participating hospitals.
- B. Provide common communications between EMS field units and multiple hospitals/facilities as required and needed for multi-casualty or other situations.
- C. Provide tactical (on-scene) communications between EMS units where required.
- D. Provide mutual aid and interagency (police, fire, EMS, etc.) communications capability utilizing common radio equipment.

EMS Radio Zones

In order to organize the talk groups and avoid confusion each portable radio is divided into zones based on use. Each zone contains the talk groups associated with the use. Zone “01” contains each individual hospital/free standing facility, the “**ALL HOSP**” (Disaster), and the “**REGROUP**” talk groups. This is the normal day to day zone of operation for EMS field units. Zone “02” duplicates the “**ALL HOSP**” (Disaster) talk group, and contains the “**TAC-3**” talk group as well as the national public safety mutual aid channels. Zones “03” and “04” are optional for agencies operating in Wayne County or utilizing 800 MHz channels for dispatch.

EMS Talk Groups

The following provides the layout of the EMS radio talk groups:

- A. The “**ALL HOSP**” (Disaster) talk group allows a hospital to simultaneously contact all other hospitals/FSF.
- B. Each hospital/FSF individual talk group is indicated by the hospital abbreviation.
- C. The “**TAC-3**” and “**TAC-4**” talk groups allow EMS units to communicate with each other and/or any other Oakland County trunked system user such as the Sheriff Department. Use of the “**TAC**” talk groups is limited to multi-agency communications and a clearance obtained from Oakland County Sheriff Communications prior to use.
- D. The “**REGROUP**” talk group allows the County radio department to add the radio to a new talk group without reprogramming the radio itself.

Scan

In order for field unit personnel to monitor the status of hospitals/FSF’s in the system, a scan function is available in the portable radios. In Zone “01”, each agency may have up to ten hospital talk groups including **ALL HOSP** (Disaster) programmed for scan. All EMS field radios are programmed with the capability to scan **ALL HOSP** (Disaster), TAC-3, and TAC-4 in Zone “02” when Zone “02” is selected in the radio.

**EMS ZONES AND TALKGROUPS****ZONES**

SELECTOR POSITION	“01” (HOSPITALS)	“02” (DISASTER/ MUTUAL AID)	“03” (AGENCY USE*)
1	‘ALL HOSP’ (Disaster)	‘ALL HOSP’ (Disaster)	Channel
2	‘BEAU ROAK’	‘TAC-3’	Channel
3	‘BEAU TROY’	“TAC-4”	Channel
4	“BOTSFORD”	“ST CALLING”	
5	“CRITTNTON”	“ST TAC-1”	
6	“GENESYS”	“ST TAC-2”	
7	“HURON VALL”	“ST TAC-3”	
8	“N OAK MED”	“ST TAC-4”	
9	“OAK GENERAL”		
10	“PONT OSTEO”		
11	“PROV NOVI”		
12	“PROV SFLD”		
13			
14	“ST JOES”		
15	“BLANK”		
16	“REGROUP”		

* Available to agencies utilizing conventional 800 MHz channels for dispatch/operations



VHF RADIO SYSTEM

VHF (Very High Frequency) radio channels are located in the 150 to 170 MHz band. This band is where much of the original public safety communications took place. Police, fire, and EMS providers within Oakland County and the southeastern Michigan area still use VHF for communications. While this band offers greater range than higher bands, it is more prone to interference and congestion due to the large number of users. It is not uncommon for users in adjacent counties to unintentionally interfere with one another.

In accordance with EMS DIVISION MEDCOM and Oakland County Medical Control Board requirements every licensed ALS and BLS unit in Oakland County is required to be equipped with the following VHF/MEDCOM frequencies:

MEDCOM 340 – Primary Vehicle to Hospital Channel (HEAR)... 155.340 MHz
MEDCOM 400 – Primary EMS Disaster Channel (HEAR)... 155.400 MHz

All participating Oakland County hospitals and facilities are equipped with a base radio capable of operating on MEDCOM 340. **THESE RADIOS DO NOT MONITOR THE CHANNELS FOR INCOMING TRAFFIC.** The base radios must be accessed using either digital dial encoding or tone squelch (Continuous Tone Coded Sub-audible Squelch-CTCSS) to “open” the hospital receiver. A list of CTCSS codes is included in Appendix C.

The VHF MEDCOM channels serve as both a primary and secondary EMS communications system within Oakland County. BLS units not equipped with 800 MHz must use the VHF system for notification. Cellular telephones may be used as a backup system but please note that these calls to the hospital are not recorded. ALS units may use VHF or cellular for notification as a backup to the 800 MHz trunked system.

The VHF system also serves as a regional backup system for EMS disaster communications. While the UHF and 800 MHz radio systems throughout the region rely on telephone lines and sophisticated microwave systems to provide advanced communications capability, the VHF network provides basic communications capability between field units and hospitals throughout the region.



BACKUP COMMUNICATIONS

800 MHz Trunked Radio System

There are several system operational modes in the event of failure of various components in the 800 MHz trunked radio system. It should be noted that the system has proven to be extremely reliable. This is due to several factors, which include: advanced system monitoring and reporting, conscientious maintenance, and the use of microwave instead of leased telephone lines. In order to maintain communications during rare occurrences, the system has several failure operational modes depending on the nature of the problem:

- A. **Single Site Failure** – in the event one of the 8 tower sites fails to operate (i.e.: struck by lightning) the system will disable the affected site with the intent of maintaining communications using the remaining 7 sites. Due to the coverage overlap between sites this failure may not be evident to a system user. All talk groups continue to operate.
- B. **FAILSOFT Mode** – in the event 50% of the base station transmitters fail or the central controller and the back up controller fail, the system reverts to FAILSOFT mode. In this mode all of the repeater sites operate as conventional repeaters. Countywide coverage is maintained however, the number of talk groups is limited.

Each radio in the system is pre-programmed to revert to a specific channel in FAILSOFT mode. Each radio will indicate in its display that it is in FAILSOFT mode to notify the operator of the failure.

Each talk group has a default FAILSOFT channel, all individual hospital talk group radios revert to the same channel. This means that each of the individual hospital talk group radios will all be on the same channel with all hospitals hearing any calls. The ALL HOSP (Disaster) talk group radios revert to a second channel so that all hospitals will continue to hear any call from a field unit. Field units can access both channels by switching from any hospital talk group to the ALL HOSP (Disaster) talk group. This will allow two simultaneous communications to be in progress at any one time provided the FAILSOFT designated transmitters are still operative.

Telephone Communications

In order to provide communications backup, each participating Hospital and Freestanding Facility maintain a direct dial telephone line, with call waiting capability, directly into the Emergency Center communications area. These lines may be used under the following conditions:

- A. A field unit is unable to contact the Hospital/FSF on the 800 MHz trunked radio system due to unusual location problem such as an extremely dense building, or radio system failure on the individual facility talk group.
- B. One facility wishes to relay patient information to another facility.

It should be noted that there is no centralized tape recording of these individual telephone lines. However, each hospital is encouraged to place a recording device on their telephone line.



PARTICIPATING HOSPITALS AND FREE-STANDING FACILITIES (FSF)

Capabilities and Responsibilities

The following are the capabilities, functions, and responsibilities of participating hospitals and freestanding facilities (FSF):

- A. Each participating facility within the system shall have two separate control stations on the trunked radio system. One control station is assigned to the hospital/FSF unique talk group, and the second is assigned to the “ALL HOSPITAL” (Disaster) talk group.
- B. Each participating facility shall be equipped with a VHF radio capable of receiving and transmitting on MEDCOM 340 (must meet EMS DIVISION requirements).
- C. Participating facility will provide medical direction consistent with medical protocols approved by the Medical Control Board via the trunked radio system or backup telephone.
- D. Participating facilities will maintain an unlisted direct dial telephone for contacting other participating facilities or providing medical direction in case of trunked radio system failure.
- E. Participating facilities will monitor both the trunked radio system and VHF radios for incoming emergency radio calls.
- F. Participating facilities will participate in radio tests as required to maintain equipment performance and maintain operator proficiency.
- G. Participating facilities may contact other hospitals on the backup telephone for the purpose of relaying pertinent patient information.

It is recommended that all VHF radios be given an annual routine maintenance inspection.



LIFE SUPPORT AGENCIES AND VEHICLES

Capabilities and Responsibilities

The following are the capabilities, functions, and responsibilities of life support agencies and vehicles:

ALS/BLS Agencies

- A. In order to participate in the Oakland County Emergency Medical Services Communications system, it is required that all basic and advanced life support units be capable of communicating on the following channels:

MEDCOM 340 – Primary Vehicle to Hospital Channel 155.340

MEDCOM 400 – Oakland County Primary EMS Disaster Channel 155.400

- B. All licensed EMS operations (transporting and non-transporting vehicles) will be assigned a specific MEDCOM mobile unit radio identification number, in accordance with the Oakland County Unit Identification Number System. To designate the capability of the unit, a prefix will be added to the unit ID number (number obtained through OCMCA), in accordance with the EMS capability and assignment codes. These identifiers will be used in all EMS radio and telephone traffic.
- C. It is recommended that all VHF radios be given an annual routine maintenance inspection.
- D. All ALS field units will be equipped with an Oakland County 800 MHz Trunked Radio System EMS portable radio.
- E. The use of the vehicular adapter for the portable is optional.
- F. The use of the 800 MHz Trunked Radio System for BLS communications is optional.
- G. The use of a cellular telephone is optional as a backup measure only.
- H. The capability of transmitting ECG telemetry is optional.
- I. EMS providers shall conduct periodic tests with other units and/or participating hospitals to ensure operator proficiency and correct communications equipment performance.



OAKLAND COUNTY

Capabilities and Responsibilities

The following are the capabilities, functions, and responsibilities of Oakland County with regard to the 800 MHz Trunked Radio System:

- A. Oakland County will provide access to the County 800 MHz Trunked Radio System for all participating EMS hospital, facilities, and providers.
- B. Oakland County will provide radios for all participating EMS agencies on a lease basis.
- C. Oakland County Radio Service will maintain all leased radio equipment as part of the lease.
- D. Spare replacement portable radios will be available on a 24-hour basis in the event of portable radio failure.
- E. Oakland County will tape all EMS talk groups and make tapes available to the Medical Control Board authorized representative upon request.
- F. Oakland County will provide relevant 800 MHz trunked radio system management data to the Medical Control Board as required to access the performance of EMS related communications.



COMMUNICATIONS GUIDELINES

The following guidelines were developed to assist personnel in using the communications system effectively. Any willful continued misuse or non-compliance with the policies and procedures of the EMS communications system may result in revocation of authorization to use the system.

- A. Listen before transmitting** – when switching to a particular talk group, it is important for field units to monitor for several seconds to determine if there is already a communication in progress. Use the scan function to monitor talk group status.
- B. Think before transmitting** – when transmitting, push the talk button for 5 seconds before transmitting. This allows the system to synchronize. Conversations should be brief and confined to emergency related business. **DO NOT USE ‘10’ CODES OR OTHER UNAUTHORIZED CODES.**
- C. Pronounce words slowly, distinctly, and in a normal speaking voice** – take frequent breaks in order for the other unit to acknowledge reception. A timer in field and hospital radios limits each push-to-talk transmission to 60 seconds.
- D. Use assigned identification numbers** – example:
Alpha 935 not LIFE 5 or RESCUE 5) it is only necessary to use the county prefix (63-Oakland) when communicating out of Oakland County.
- E. Field units contacting hospitals for medical direction shall indicate the priority of the patient on the initial contact.**
- F. Always identify the called party first** – example:
Field Unit: “Botsford Hospital, this is Alpha 935 with a priority 2.”
- G. The terms “Affirmative”, “Roger”, and “Negative”** should be utilized instead of “Yes” and “No”.
Hospital response: “Alpha 935, this is Botsford Hospital, copy.”
- H. In order to insure accuracy, all medication and modality orders will be repeated prefaced with the unit ID** – example:
Hospital: “Alpha 935 give 1 mg Epinephrine IV push and defibrillate at 360 Joules.”
Field Unit Response: “Alpha 935 copies give 1 mg Epinephrine IV push and defibrillate at 360 Joules.”
- I. Upon completion of all communications between a hospital and a field unit regarding a particular incident, both the field unit and the hospital should terminate the call** --example:
Field Unit: “Alpha 685 clear with Pontiac Osteopathic Hospital.”
Hospital Response: “Pontiac Osteopathic Hospital clear.”



APPENDIX A SUGGESTED VOCABULARY FOR RADIO TRANSMISSION

PREFERRED	AVOID
Advise	Let me know/If you can/Ascertain
Affirmative	Yes/uh-huh
Apply	Put on
Artifact	Name type: 60 cycle:motion
Car Accident/Motor Vehicle Accident	MVA/PI/PIA
Truck Accident/Pedestrian Accident	
Cardiac Care Unit/Intensive Care Unit	CCU/ICU
Confirm	Is this/Did I understand/acknowledge
Continue	Keep on with
Copy	Receive/Interpret/Understand
CPR	Cardiopulmonary resuscitation
Dextrose	Sugar
D5/D5W	5% dextrose in water
Digoxin	Dig
Emergency Facility	ED/EC/ER/Emergency room/Hospital
ETA	Estimated Time of Arrival
IV	Intravenous
IV Push	
IVP	
Maintain	Keep going as is
Microdrops	microdrip IV tubing
Morphine	MS
Negative	No/Uh-huh
Neonatal Intensive Care Unit	NICU
Normal Saline	NS
Pediatric Intensive Care Unit	PICU
Pupils	Eyes
Request	Want/Wish
Respiration's	Breathing
SPO2	Pulse-ox/Sat



APPENDIX B
EMS UNIT IDENTIFICATION NUMBERING SYSTEM

In accordance with the MEDCOM plan, all EMS units shall utilize the standard unit identification plan to avoid confusion and mis-communication. The numbering system consists of: a two digit county identifier (**Table 1**); 1 single letter level of care identifier (**Table 2**) and a 3 digit unit/agency identifier (**Table 3**). For example:

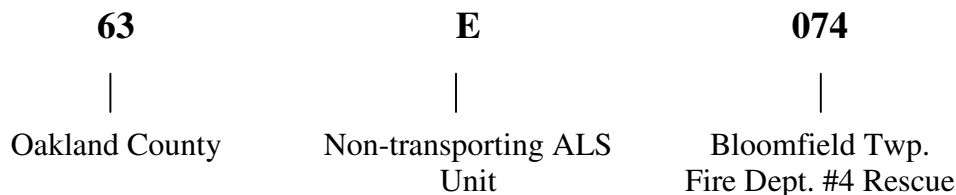


TABLE 1 – COUNTY NUMBER

01	Alcona	25	Genessee	49	Mackinaw	73	Saginaw
02	Alger	26	Gladwin	50	Macomb	74	St. Clair
03	Allegan	27	Gogebic	51	Manistee	75	St. Joseph
04	Alpena	28	Gd. Traverse	52	Marquette	76	Sanilac
05	Antrim	29	Gratiot	53	Mason	77	Schoolcraft
06	Arenac	30	Hillsdale	54	Mecosta	78	Shiawassee
07	Baraga	31	Houghton	55	Menominee	79	Tuscola
08	Barry	32	Huron	56	Midland	80	Van Buren
09	Bay	33	Ingham	57	Missaukee	81	Washtenaw
10	Benzie	34	Ionia	58	Monroe	82	Wayne
11	Berrien	35	Iosco	59	Montcalm	83	Wexford
12	Branch	36	Iron	60	Montmorency	84	Detroit
13	Calhoun	37	Isabella	61	Muskegon	90	Ohio
14	Cass	38	Jackson	62	Newaygo	91	Indiana
15	Charlevoix	39	Kalamazoo	63	Oakland	92	Wisconsin
16	Cheboygan	40	Kalkaska	64	Oceana	99	Ontario
17	Chippewa	41	Kent	65	Ogemaw		
18	Clare	42	Keweenaw	66	Ontonogon		
19	Clinton	43	Lake	67	Osceola		
20	Crawford	44	Lapeer	68	Oscoda		
21	Delta	45	Leelanau	69	Otsego		
22	Dickinson	46	Lenawee	70	Ottawa		
23	Eaton	47	Livingston	71	Presque Isle		
24	Emmet	48	Luce	72	Roscommon		

**TABLE 2 – LEVEL OF CARE**

A	ALPHA – Advanced Life Support Ambulance
B	BRAVO – Basic Life Support Ambulance
C	CHARLIE – Supervisory Unit
D	DELTA – Physician
E	ECHO – Advanced Life Support Non-transporting Unit
H	HOTEL – Air Ambulance or Helicopter
L	LIMA – Limited Advanced Life Support Ambulance
M	MIKE – Limited Advanced Life Support Non-transporting Unit
N	NOVEMBER – Neonatal Unit
R	ROMEO – Rescue, Extrication, or Medical First Responder Unit
T	TANGO – Basic Life Support Non-transporting Unit

**TABLE 3 – UNIT IDENTIFICATION NUMBER
FIRE/PUBLIC SAFETY DEPARTMENTS**

Addison Township	010-019	Milford	260-269
Rochester Hills	020-029	Novi	270-279
Berkley	030-039	Oak Park	280-289
Beverly Hills	040-049	Orion Township	290-299
Birmingham	050-059	Oakland Township	300-309
Bloomfield Hills	060-069	Oxford	310-319
Bloomfield Township	070-079	Pontiac	320-329
Brandon Township	080-089	Auburn Hills	330-339
NOT ASSIGNED:	090-099	Rochester	340-349
Independence Township	100-109	Royal Oak	350-359
Clawson	110-119	Royal Oak Township	360-369
Commerce Township	120-129	Southfield	370-379
Farmington	130-139	South Lyon	380-389
Farmington Hills	140-149	Springfield Township	390-399
NOT ASSIGNED:	150-179	Troy	400-409
Ferndale	180-189	Walled Lake	410-419
Franklin	190-199	Waterford	420-429
Hazel Park	200-209	West Bloomfield	430-439
Highland Township	210-219	White Lake	440-449
Holly	220-229	Wixom	450-459
Huntington Woods	230-239	Tri-Cities	460-469
Lyon Township	240-249	Not Assigned:	470-479
Madison Heights	250-259	Groveland Township	480-489



TABLE 4 – PRIVATE AMBULANCE SERVICES

490-499	Hart Medical
500-525	Star EMS BLS
526-569	Alliance Mobile Health
570-579	Concord EMS
580-599	Community EMS
600-699	AMR ALS
700-799	Community EMS
800-819	Star EMS ALS
820-829	Huron Valley Ambulance
830-899	
900-999	AMR BLS



**APPENDIX C
HOSPITAL/FACILITY VHF DIRECTORY**

The following emergency facilities are equipped with VHF base station radios. These base stations are capable of transmitting and receiving on MEDCOM 340 (primary Vehicle to Hospital Channel). Because these facilities do not continually monitor this channel, units wishing to contact these facilities must utilize a tone squelch (PL or private-line). All MEDCOM 340 base stations transmit 97.4 (ZB) squelch.

HOSPITAL	CITY	MEDCOM TONE SQUELCH CTCSS CODES
Botsford General Hospital	Farmington Hills	77.0 (XB)
Crittenton Hospital	Rochester Hills	179.9 (6B)
Genesys Medical Center	Grand Blanc	114.8 (2A)
Henry Ford – W. B. Hospital	West Bloomfield	225.7 (M4)
Huron Valley – Sinai Hospital	Commerce Twp.	229.1 (9Z)
North Oakland Medical Center	Pontiac	173.8 (6A)
St. John – Oakland	Madison Heights	94.8 (ZA)
Pontiac Osteopathic Hospital	Pontiac	192.8 (7A)
Providence – Southfield Hospital	Southfield	107.2 (1B)
Providence – Novi Hospital	Novi	206.5 (8Z)
St. Joseph Mercy – Oakland Hospital	Pontiac	100.0 (1Z)
Wm. Beaumont Hospital	Royal Oak	156.7 (5A)
Wm. Beaumont Hospital	Troy	162.2 (5B)
HEMS Wayne County	Westland	1-228-822
Macomb MEDCOM	Mt. Clemens	Carrier Squelch
Oakland Co. EOC	Pontiac	Carrier Squelch



APPENDIX D GLOSSARY OF TERMS

ALPHA	Transporting ALS Unit
ALS	Advanced Life Support
BLS	Basic Life Support
BRAVO	Transporting BLS unit
CARRIER SQUELCH	A mode of operation that a receiver can receive all transmissions on a channel. No tone squelch or dial decoding is in use.
CHARLIE	EMS Supervisory Unit
DELTA	Physician's radio call sign
DOS	"Dead on Scene"
ECHO	Non-transporting ALS Unit
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
ETA	Estimated Time of Arrival
FCC	Federal Communications Commission. The agency that regulates all US communications systems
HEAR	Hospital Emergency Access Radio (See Medcom)
HOTEL	A fixed wing or helicopter air ambulance
INTERCOM	A communications link that provides two-way, non-radio, communications between designated points
LIMA	Limited Advance Life Support Unit
MAZ	Medical Alert Zone, a specific geographic area established by the State, that acts as a sub-system within a broader emergency medical services system.
MEDCOM (HEAR)	(Hospital Emergency Access Radio) Frequencies: 155.400 / 155.340
MEDICAL CONTROL AUTHORITY	A state approved organization to assure medical accountability within the EMS system
MDCIS / EMS DIVISION	Use to be called the Michigan Department of Public Health, EMS Division that is now replaced by the Department of Consumer & Industry Services EMS Division.
MIKE	Limited Advanced Life Support Non-transporting Unit



MOBILE	Any transceiver installed in a moveable vehicle
NOVEMBER	Neo-natal transport unit
PARTICIPATING FACILITY	An Emergency Facility approved by the Medical Control Board and the State Department of Consumer & Industry Services to provide medical direction to ALS personnel in Oakland County
PORTABLE	A self-contained transceiver designed to be readily transported from place to place
PRIVATE LINE	A Motorola trade name for tone squelch. A radio feature that allows a receiver to selectively receive calls on a channel. Also referred to as “PL”, “Channel Guard” and “Quiet Channel”.
RECEIVER	A device that converts radio frequency signals into audible sound
ROMEO	A rescue, extrication, or medical first responder unit
SEL-CALL	The capability to individually alert another radio (Select Call) to get the attention of the operator. A feature of the 800 MHz trunked radio system.
TALK GROUP	The functional equivalent of a channel in a trunked radio system
TANGO	Non-transporting basic life support unit
TELEMETRY	The transmission of data, such as an ECG, through a communications medium such as telephone or radio
TRANSCEIVER	A radio device which contains both a receiver and a transmitter
UHF	Ultra High Frequency – generally refers to 450-470 MHz. The MED channels are located within this range
UNIT ID	The automatic transmission of a unique identification code which is displayed at a receiving station. A feature of the 800 MHz trunked radio system.
VHF	The MEDCOM channels are located within this range. Very High Frequency – generally refers to ISO-170 MHz.



APPENDIX E INTER-REGIONAL COMMUNICATION LINKS

There are several inter-county communications links that have been established to facilitate the continuity of care for patients originating in one county and desiring to utilize hospitals in other counties.

Macomb-Oakland Link

The three hospitals, Oakland General, Beaumont – Troy, and Crittenton, that due to their border locations receive numerous EMS patients from Macomb County, have established a relationship with Macomb MEDCOM. During an expansion of the MEDCOM system these hospitals were connected to the MEDCOM console which permits Macomb County EMS units to communicate with these hospitals directly on UHF MED frequencies. The following policies govern this arrangement:

- A. Macomb County provides Medical Control and maintains the radio tapes at MEDCOM.
- B. The Oakland County hospitals involved provide medical direction in accordance with Macomb County medical protocols unless otherwise mutually agreed to.
- C. Physician incidents will be the responsibility of each respective county Project Medical Director and addressed in accordance with the county's incident investigation procedure.
- D. Macomb County AEMT incidents will be the responsibility of the Macomb County Project Medical Director and addressed in accordance with Macomb County's incident investigation procedure.
- E. Macomb County units must have VHF MEDCOM radios.

Oakland-Detroit Link

Sinai Hospital, due to its proximity to Oakland County and its desire to provide continuity of care for patients originating in Oakland County, has established a link with Oakland County EMS units. Sinai is equipped with the same 800MHz trunked radio configuration as the Oakland County hospitals. The following policies govern the use of this link:

- A. Oakland County provided Medical Control and maintains the radio tapes.
- B. Sinai Hospital provides medical direction in accordance with Oakland County medical protocols. Consistent with Medical Control policy, contacting the Base hospital for medical direction may be appropriate in certain cases at the paramedic's discretion.
- C. Physician incidents will be accordance with Oakland County's incident investigation procedure.



Oakland-Genesee County Link

Genesys Regional Medical Center, due to its proximity to Oakland County and its desire to provide continuity of care for patients originating in Oakland County, has established a link with Oakland County EMS units. Genesys Regional Medical Center is equipped with the same 800 MHz trunked radio configuration as the Oakland County hospitals. The following policies govern the use of this link:

- A. Oakland County provides Medical Control and maintains the radio tapes.
- B. Genesys Regional Medical Center provides medical direction in accordance with Oakland County medical protocols. Consistent with Medical Control policy, contacting the Base hospital for medical direction may be appropriate in certain cases at the paramedic's discretion.
- C. Physician incidents will be the responsibility of each respective county EMS Medical Director and addressed in accordance with Oakland County's incident investigation procedure.



APPENDIX F PARTICIPATING FACILITIES AND CAPABILITIES

This chart provides a summary of the communications capabilities of the participating hospitals and facilities. Facilities connected to Macomb Medcom or HEMS also participate in those EMS systems and can be contacted by the indicated methods.

HOSPITAL	INDIVIDUAL TALK GROUP	ALL HOSP (Disaster) TALK GROUP	VHF / CTCSS CODES	BACK-UP PHONE	MACOMB MEDCOM	HEMS UHF/800 MHZ
Botsford ❖ (Farmington Hills)	“BOTSFORD”	Yes	77.0 (XB)	(248) 471-8566		Yes
Crittenton (Rochester)	“CRITTNTON”	No	179.9 (6B)	(248) 601-3931	Yes	
Henry Ford (W. Bloomfield)	No	Yes	225.7 (M4)	(248) 661-7150		
Genesys Medical Center	“GENESYS”	Yes	114.8 (2A)	(810) 606-6147		
Huron Valley Sinai (Commerce)	“HURON VAL”	Yes	229.1 (9Z)	(248) 937-4400		
North Oakland (Pontiac)	“N OAK MED”	Yes	173.8 (6A)	(248) 857-7257 or 6731		
St. John – Oakland (Madison Hgts.)	“OAK GEN”	Yes	94.8 (ZA)	(248) 967-7660	Yes	
POH ❖ (Pontiac)	“PONT OSTEO”	Yes	192.8 (7A)	(248) 338-5332		
Providence (Novi)	“PROV-NOVI”	Yes	206.5 (8Z)	(248) 465-4210		
Providence ❖ (Southfield)	“PROV-SFLD”	Yes	107.2 (1B)	(248) 849-3131		Yes
St. Joseph ❖ (Pontiac)	“ST JOE”	Yes	100.0 (1Z)	(248) 858-6660		
Beaumont ❖ (Royal Oak)	“BEAU-ROAK”	Yes	156.7 (5A)	(248) 551-4566		
Beaumont (Troy)	“BEAU-TROY”	Yes	162.2 (5B)	(248) 964-8787	Yes	
HEMS Wayne County				(313) 722-0708		MED-9 (A)
Macomb Medcom			Carrier Squelch	(810) 468-5020	MED-9 (D)	
Detroit EMS				(313) 596-1608		

- ❖ These facilities are categorized as Level I. During multi-casualty/disaster situations only Disaster Control Hospitals can provide medical direction.
- ❖ Participating facilities will notify OCMCA of any change in telephone access number.



APPENDIX G

EMS PROVIDERS 800 MHz RADIO COMMUNICATIONS PROCEDURES

Initiating a call:

1. Turn on the radio.
2. Select hospital talk group.
3. Listen for radio traffic.
4. If busy:
 - Wait for a break.
 - Announce your unit number and priority of call.
Example: Providence Hospital this is A-432 with a priority 2
 - Wait for the facility to respond to your call. They should tell you to standby, terminate the call, or advise you to contact your base facility.
5. If the talk group is silent, page the facility by doing the following:
 - Using the front panel keys, press the right arrow key (→), then the right dot key (●) under the “page” display, then the right arrow key (→) again.
 - Confirm the hospital/facility name is flashing on the display.
 - Press the transmit key... four beeps confirms the page is transmitted.
 - Transmit on the talk group.
Example: Providence Hospital this is A-432 with a priority 2
This action will bring up your unit ID number on the facility control station while the alert tone and voice is audible. Repeat the verbal request as needed.

If a receiving hospital does not reply or system is down:

1. Contact the base hospital. If this fails:
2. Contact another Oakland County Participating Hospital/Facility. If this fails:
3. Use the telephone to call the receiving hospital direct. (Phone list is available) Call your base or any other participating hospital if necessary. If this fails:
4. Attempt to contact a participating hospital on the HEAR radio. If this fails:
5. Follow SOP's and indicate a communication failure on the run report.

Priority 3 calls

Priority 3 (notification only) calls will only require the following information:

1. Unit Number
2. Patient Priority (3)
3. Age & Gender
4. Primary Complaint (cause & type of injury)
5. ETA

Example: A-432 is sending you a priority 3, 43 year-old male with a shoulder injury resulting from a Motor Vehicle Accident. ETA 25 minutes.

NOTE: Patients going to any non-participating facility, require participating facility approval for transport.



Rerouting

Hospital rerouting status is posted via the CHORAL (Computerized Hospital Resource Allocation Link). Many agencies have the hospital status available at their respective dispatch centers. Those agencies can advise the medical response units of a hospital's status over the agencies dispatch radio system. For agencies that do not have access to the CHORAL information, the units should contact the receiving hospital to confirm their status. Any of the participating hospitals are able to advise you of another participating hospital's status via the CHORAL system. This allows the initial hospital of choice, which is currently rerouting when contacted the ability to route a patient to another non-rerouting participating facility.

Multicasualty Incidents

Contact a participating *base* hospital for coordination and medical direction. Only one radio (Communications Officer) is used for contacting a participating hospital for coordination/medical direction.

- A. All mutual aid responding EMS units will monitor 155.400 for arrival/staging instructions.
- B. "TAC-3" and "TAC-4" may be used for additional tactical applications, such as triage, search and rescue, transportation, etc. To change zones, press an arrow key (→), then the middle dot key (●) under the zone display, and scroll to the zone that you want using the arrow key (→). The TAC talkgroups are located in "Zone 2" when you have "Zone 2" displayed, press home and select the talkgroup that you want using the top selector knob with the numbered scale.
- C. The Communications Officer must obtain permission to use the "TAC" groups from Oakland County Communications Center.
- D. The Communications Officer will assign the "TAC" groups as needed for specific functions such as triage, search and rescue and transportation, etc.

"All Hospital" (Disaster) Talkgroup

At this time, there is no reason for a field unit to use the All Hospital talk group. This talk group is currently reserved for interhospital MCI use.

Radio Tests

The radio should be tested at the beginning of each shift by contacting one of the participating hospitals.

Remember

Terminate your call!