PREPARED FOR:
THE NATIONAL CARNIVAL COMMISSION
OF TRINIDAD AND TOBAGO

MAY 9, 2014

VANUS INVESTMENTS LIMITED

ANNEX IV (F)

HEALTH AND CARNIVAL

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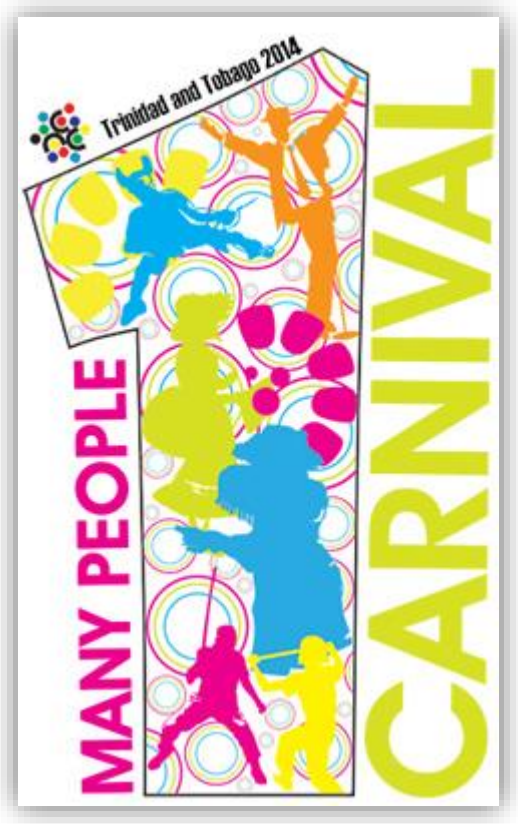
1. INTRODUCTION

At the core of the carnival sector lies four main industry groups: (i) steel band; (ii) calypso; (iii) mas; and (iv) fetes. The overall purpose of this project is to define industrial policies for development of the sector, with respect to: market development and trade promotion; credit access, tax policy; subsidies and duties policies related to exports and imports, respectively; development and utilization of advanced technology; institutional development; and development and execution of competitiveness strategies. There are significant health dimensions to such a policy, with respect to the wellbeing of the patron and the wider public, and the occupational health of workers in the establishments of the industry. This report highlights these health dimensions and the interconnected nature of the physical infrastructure supporting carnival.

1.1. STRUCTURE OF REPORT

This report is organized in six (6) sections. The first section, Carnival's Influence on Health, outlines the specific health benefits and concerns of carnival. Section two, Establishments, reviews the medical, public health and occupational health and safety institutions of Trinidad and Tobago. The Scope of Health Services Available, which outlines the specific services available, is presented in section three. Section four, Timing and Scale, provides insight into when the services are available, and the capacity of the system to provide the necessary services. Technology and Skills, presented in section five, describes the system's ability to use science to deliver its outputs. The final section, Initial Conception of Change in Scale and Scope, identifies recommendations for enhancement of the health system, which will support the development of the carnival industry, while improving the wellbeing of carnival patrons and workers, and the general public.



1.2. CARNIVAL'S INFLUENCE ON HEALTH

The four main carnival industries (steel band, calypso, mas and fetes) present both protective/promotive and hazardous/risk factors that have the potential to directly or indirectly affect health[1]. Some of the obvious risk factors include the presence of mass gatherings[2], and the use/abuse

1 According to the WHO "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1946).

of alcohol and other mind-altering substances. The protective factors, though less obvious include the increased desire for health (physical appearance and stamina) leading up to the season, which fuels increased exercise and healthier diets following the Christmas period.

The health issues associated with mass gathering are varied, however research has shown that internationally, respiratory illnesses, minor injuries, heat- related injuries, and minor problems (headache, blisters, sunburn) make up 80% of the reported casualties associated with mass-gatherings (National Public Health Partnership Secretariat, 2000). This report highlights the health issues of Trinidad and Tobago carnival, using statistical and anecdotal information.

1.3. ACCIDENTS AND INJURY

Accidents and Injuries are among the leading health concerns of carnival. Given the fact that carnival events attract mass gatherings, the probability of a "mass casualty incident"[3] is extremely high. These usually result from stampedes, crowd surges, structural collapses, etc. Though there have been no major crowd surge incidences in Trinidad and Tobago, structural collapses have resulted in mass casualties. The collapse of the VIP area in Machel Montano's 2000 concert, where approximately 80 patrons were injured, is most notable (Bagoo, 2009). Though the number of fetes and the volume of the participants are relatively large during the carnival period, fetes pose significant accident/injury challenges throughout the year. Many are held in closed spaces, where the safe carrying capacity of the building may be breached and the exits may not be easily accessed (inadequate numbers, or locked). In these circumstances, the risk of mass casualties, as have been experienced around the world (Blumenthal, 1990; Head, 2009; Unknown, 2013a), is relatively high.

Injuries as a result of violent fights (gang-related, inter-partner-related, and other types) are most prominent. For example, in 2014 the South-West Regional Health Authority reported treating with 192 cases, of which 122 persons were treated for assault injuries, ten for stab wounds, and three for gunshot injuries (Wayow, 2014). According to the Tobago Emergency Management Agency, in 2009 there were 29 causalities reported to the Command Centre, and of those 50% were associated with violent fights (Office of the Chief Secretary, 2010).

The sector continues to report on injuries associated with music trucks and trucks carrying steel pans, costumes and other large items (Browne, 2005; Unknown, 2013b).There have also been reports of serious (sometimes fatal) car accidents during the carnival period. This is associated with increased driving under the influence of alcohol and other drugs, in addition to speeding (Wayow, 2014; Williams, 2012).

Mass gatherings and the potential of mass casualties require a coordinated evacuation system (for patrons and emergency services). The current carnival routes, coupled with the limited road network

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2 A mass gathering should be defined as any occasion, either organized or spontaneous, that attracts sufficient numbers of people to strain the planning and response resources of the community, city or nation hosting the event" (World Health Organization, 2008).

3 A mass casualty incident is an event resulting in a number of victims large enough to disrupt the normal course of emergency and health services (National Emergency Management Agency, 2000).

and limited medical transportation system (lack of medical evacuation helicopters for example) present significant mobility challenges if/when evacuation is needed.

There are business/economic opportunities linked to preventing/managing these risks. The current legislation requires the hiring of additional police and fire personnel to maintain safety (linked to approval/renewal of liquor licences). The requirement to include health/medical staff should be added. The provision of private emergency medical services is also an important business opportunity. During the season, private medical facilities may be erected where individuals are required to pay for services (foreigners may be the target customer).

1.4. COMMUNICABLE DISEASES

Incidences of communicable diseases, like influenzas and food-borne illnesses also increase during the carnival period. This may be linked to an increase in the number of temporary food outlets, an increase in mass catering, catering in situations with limited access to clean water and poor sanitation and hand hygiene in crowded places (McCloskey & Endericks, 2013). The increased incidences of influenzas/colds may be linked to poor sanitation and hand hygiene practices and the increased presence of dust[4]. It is estimated that most individuals do not seek medical attention however, and as a result, the magnitude of this issue is undocumented. Locals have made reference to naming the seasonal cold/flu after the most prominent calypso/soca of the year as an indicator of the perceived increases.

A rigorous food safety system should be implemented to combat this issue. For example the food handler registration/training should be more detailed (the current lecture lasts under one hour), and additional inspections carried out during the peak seasons (possibly at a cost to the food handlers, linked to their registration during this period). Private establishments may provide on-site safety equipment (gloves, aprons, etc.) as a business investment.

1.5. SEXUAL AND REPRODUCTIVE HEALTH (SRH)

Sexual and Reproductive Health issues are also of concern during this period. According to Deron, sex tourism and other "immoral sexual behaviour" is increased in countries where "carnival jamborees" exist. He highlighted the observation that in Trinidad and Tobago during the carnival period, a large volume of patrons "enjoyed music; drink in night clubs, hotels and brothel and [also] indulged in sexual acts for economic gains and social pleasure" (Deron, 2007). It is therefore anticipated that there are increased rates of sexually transmitted infections (STIs) including Human Immunodeficiency Virus (HIV), and unplanned pregnancies. Deron's theory needs to be further investigated, via research that identifies "risky behaviour" during the season, and links those behaviours to SRH issues via the critical review of medical reports, and laboratory reports, etc.

[4] Dust is defined as "fine, dry powder consisting of tiny particles of earth or waste matter lying on the ground or on surfaces or carried in the air"

The increased presence of SRH-related health education components (posters, load speaker ads, skits, TV ads, etc.) indicates that the Ministry of Health and other government agencies are aware of the link and are taking steps to combat this concern. The Population Programme also records an increased request for condoms, which are provided during the carnival period (Ocho, 2014). Event planners (fete promoters for example) may also capitalize on this opportunity by offering condoms for sale at their events. There are also increased opportunities for producers, script writers, actors and other individuals in the mass media field, to develop culturally sensitive health education materials for distribution.

1.6. SUBSTANCE USE/ABUSE

The use and abuse of alcohol and illegal substances is also a health issue of concern. Though not documented, carnival is a period where individuals indulge in excessive alcohol consumption. Alcohol and drugs can be a catalyst for, and can exacerbate, unruly behaviour and hooliganism in crowds, resulting in accidents and injuries as described above. Substance use/abuse also reduces inhibition, therefore increasing risky sexual behaviours (unprotected sex, sex with strangers, etc.).

1.7. LIFESTYLE

Lifestyle is a large category that incorporates heat-related illnesses, muscle cramps, and issues associated with ill-fitting shoes, among others. Heat-related illness (sun-burns, and headaches for example) and dehydration were amongst the commonest causes for patient presentations during mass gathering events (McCloskey & Endericks, 2013). This issue is exacerbated by the use of alcohol. For obvious reasons, less critical issues are associated with standing, walking and dancing for long periods with ill-fitting shoes. These include the presence of “corns” and calluses. Muscle injuries (strains and cramps) are also extremely prevalent, though less severe, and therefore under-reported.

Diet is a critical component of lifestyle. It must be noted that the choices of foods available during the carnival period are extremely limited, and usually only includes fried foods. Though this option may be considered the “fastest”, it does not encourage healthy eating habits during the carnival period, which will ultimately affect the long-term health of patrons. Private establishments providing healthy food options, in addition to the sale of sneakers, sun-screen, etc. are also potentials for business. Prior to carnival, there are also increased opportunities for gyms, trainers/life coaches to accommodate the increased exercise needed in preparation for carnival.

1.8. NON-COMMUNICABLE DISEASES & PSYCHOLOGICAL CONDITIONS

This period is associated with the exacerbation of underlying medical conditions, like asthmas and heart conditions, etc. Though limited, there are also psychological conditions, like panic attacks that may also occur as a result of being in large crowds.

1.9. OCCUPATIONAL SAFETY AND HEALTH OF CARNIVAL SERVICE PROVIDERS

An emerging health issue relates to the Occupational Safety and Health of Carnival Service Providers. For example, there are burn, visual, and inhalation of toxic fumes related issues linked to the welding that is required to construct steel pan stand/frames and large costumes. Hearing loss is a significant concern for pan-tuners, in addition to pan players. There are hearing loss, risk of electrical shock (when moving overhead lines to allow free movement of trucks), falls (when riders hang dangerously from the side of the trucks), accidents (associated with drunk truck drivers) and other injuries associated with work on music trucks. There is a need to review (or implement where legislation already exists) the regulation of sound during this period.

It must also be noted that though the carnival period is seen as one of *liberation*, there are no holidays associated with the festival, as a result, individuals are expected to continue their normal working routine. Issues surrounding fatigue, alcohol consumption and dehydration, and their influence on the health and safety of key workers (physicians, nurses, policemen, etc.) are extremely important.

1.10. ENVIRONMENTAL HEALTH

Finally, there are Environmental Health concerns linked to the medical issues previously raised. For example, increased garbage/litter may result in food borne-illnesses; increased dust is linked to asthma attacks and influenzas, and water may be contaminated again resulting in food borne illnesses. Specifically, there were smoke inhalation and throat infection/irritation issues associated with the burning at the Beetham Landfill during the 2014 carnival period.

Ironically, there were also environmental health problems "created" by public health solutions. Critical examples are the portable toilets erected for public use. The portable toilets were unsanitary and therefore emitted foul smells. Many of these were in close proximity to food vendors, etc. An alternative includes private establishment providing sanitary services (portable, air-conditioned, maintained toilet/hand-washing facilities) for a fee.

2. ESTABLISHMENTS

The health related establishments include medical, public/environmental health and occupational health and safety.

2.1. MEDICAL

The Medical system is managed via the Ministry of Health nationally, and the Tobago House of Assembly (Division of Health and Social Services) in Tobago. Services are provided via decentralized Regional Health Authorities (RHA) to include (1) the North-West RHA, (2) the North-Central RHA, (3) the Eastern RHA, (4) the South-Western RHA and (5) the Tobago RHA.

The Tobago Regional Health Authority is unique, in that it is subject to the Tobago House of Assembly (THA) Act. According to the Tobago House of Assembly Act 40 of 1996, the THA is "responsible for the formulation and implementation of policy in respect of the matters set out in the Fifth Schedule" as it relates to Tobago. Health Services is one of the matters of the 5th schedule. The TRHA reports directly to the Division of Health and Social Services, THA.

The health facilities nation-wide include 110 health centres and nine (9) hospitals. Health Centres may be further subdivided based on the type and frequency of care provided, and includes 14 Outreach Centres, 82 Health Centres, and 14 District Facilities or Extended Care Health Centres.

The nine (9) hospitals include the Sangre Grande Hospital managed by the ERHA; the Caura Hospital, the Eric Williams Medical Sciences Complex, and the Mt. Hope Women's Hospital managed by the NCRHA; the Port-of-Spain General Hospital, and the St. Ann's Hospital (Mental Health) managed by the NWRHA; the Point Fortin Area Hospital, and the San Fernando General Hospital managed by the SWRHA; and the Scarborough General Hospital managed by the TRHA (Ministry of Health, 2010).

There are a number of private hospitals (St. Clair, West Shore, etc.), in addition to private doctor offices nation-wide. Many of these private facilities share medical staff with the public facilities.

2.2. PUBLIC/ENVIRONMENTAL HEALTH

Garbage collection and disposal fall under the jurisdiction of the Ministry of Local Government, via the various Municipality Corporations, and the Trinidad and Tobago Solid Waste Management Company Limited (SWMCOL) in Trinidad. In Tobago, the Public Health Services department of the Division of Health and Social Services manages such functions. The Community-based Environmental Protection and Enhancement Programme (CEPEP) nationally, and the Litter Eradication Programme (LEP) in Tobago, also provide waste removal and beautification services generally, and specifically during the carnival period.

According to the Public Health Ordinance Chapter 12:04, all food handlers in Trinidad and Tobago are required to be registered with the County Medical Officer of Health (CMOH) or Medical Officer of Health in their respective municipalities. The registration process requires the food handler to (a) be certified as medically fit, and (b) attend a short food safety lecture.

In Trinidad, the Public Health Inspectorate functions within the Ministry of Health (with responsibility for the boroughs – Caroni, St George, etc.), and within the Ministry of Local Government (with responsibility for the municipalities - Post of Spain Corporation, etc.). The structure includes a complex reporting system, which periodically presents jurisdictional challenges. The Public Health Inspector III reports to the CMOH, who reports to the Chief Medical Officer (CMO) in the Ministry of Health for some counties; the Public Health Inspector IV reports to the Chief Public Health Inspector, who reports to the CMO in other counties; and the Public Health Inspector IV reports to their municipality head in the regional corporations.

In Tobago, the Inspectorate function under the Division of Health and Social Services, Public Health department, under the guidance of the County Medical Officer of Health (CMOH). The CMOH in Tobago reports to the Division of Health and Social Services in addition to the Chief Medical Officer of the Ministry of Health.

2.3. OCCUPATIONAL SAFETY AND HEALTH

According to the Occupational Safety and Health (OSH) Act 2004 as amended, the Trinidad and Tobago OSH Authority is a multi-stakeholder Board that advises the Minister of Labour on labour-related health and safety policies. The OSH Agency is responsible for the implementation and execution of those policies, and is the enforcing body of OSH regulations. The Agency is currently housed in the Ministry of Labour and Small and Micro Enterprise Development, with a small cadre of Inspectors.

2.4. COORDINATION DURING THE CARNIVAL PERIOD

During the carnival period, a robust coordinated system, or "Unified Command Structure" is implemented. The Office for Disaster Preparedness and Management (ODPM) manages this coordinated response in Trinidad, while the Tobago Emergency Management Agency (TEMA) manages the response in Tobago.

These Carnival Joint Operation Command Posts include representatives from the Trinidad and Tobago Police Service, the Trinidad and Tobago Fire Service, the Trinidad and Tobago Defence Force, the Trinidad and Tobago Cadet Force, the Regional Health Authorities, the Trinidad and Tobago Medical Association, the Trinidad and Tobago Red Cross, the Tobago Emergency Management Agency (in Tobago) and the Office for Disaster Preparedness and Management (in Trinidad).

The Carnival Joint Operation Command Posts include the setting up of Advanced Medical Posts, Mobile Command Units, and Police Mobile Units. The objectives of this coordination includes:

I. Maintaining law and order during the festivities;
II. Preventing and mitigating against acts of violence;
III. Triaging, diagnosing, stabilizing and treating all medical casualties with the aim of reducing congestion at the Accident and Emergency departments at the various hospitals;
IV. Managing lost and found children;
V. Managing surveillance systems at critical locations

In Trinidad a National Operation Centre is erected in addition to venue operation centres. In Port of Spain for example, the Port of Spain Corporation Emergency Operations Centre is also erected during the carnival period (Disaster Management Unit, 2011).

3. SCOPE OF HEALTH SERVICES AVAILABLE

3.1. MEDICAL

The medical services available in Trinidad and Tobago (within either the private or public system) fall into three categories: Primary Care, Secondary Care and Tertiary Care.

Primary Care is the first point of contact a person has with the health system, where people receive care for most of their everyday health needs. Primary care is typically provided by primary care physicians, and by nurses, dieticians, mental health professionals, pharmacists, therapists, and others. Primary care includes the prevention, diagnosis, treatment and follow-up of various health conditions. It also includes referrals to specialists and diagnostic services such as laboratory tests or x-rays. According to the Ministry of Health's website, Primary Care services are provided at the network of Health centres, and these services include:

I. Antenatal Clinic
II. Cervical Screening
III. Child Welfare Clinic
IV. Chronic Disease Clinic (Heart disease, diabetes, etc.)
V. Counselling and Welfare
VI. Dental (including Dental Extractions)
VII. Dressings
VIII. Electrocardiogram (ECG)
IX. Sexual and Reproductive Care (Family Planning, Pap Smear, etc.)
X. General Practice
XI. Hansen's Clinic
XII. Home Visit
XIII. Paediatric Clinic
XIV. Pre- and Post-natal clinic

Secondary Health Care services are provided by a physician specialist (such as a paediatrician or internist) upon referral by a primary care physician. These services are provided at the hospitals and include:

I. Accident & Emergency
II. Dietary
III. Electrocardiograph (ECG)
IV. Health Information Services (Medical Records)
V. Laboratory
VI. Maternity Ward (includes Newborn Nursery)
VII. Medicine (includes Department of Medicine and Medical Wards)
VIII. Mortuary
IX. Operating Theatre
X. Out Patients Clinics

XI. Paediatric Ward
XII. Pharmacy / Dispensary
XIII. Physiotherapy
XIV. Psychiatric Unit
XV. Radiology / X-Ray
XVI. Surgery

The Carnival Joint Operation Command Posts may include Advanced Medical Posts (AMP), which are on-site shelters insulated from the sun's ultra violet rays and easily mobilized by a trailer that is outfitted with Trauma Emergency Medical Kits.

Tertiary Care services are provided by highly specialized providers such as neurosurgeons, thoracic surgeons and intensive care units in the academic health science centres. The Eric Williams Medical Sciences Complex and Mount Hope Women's Hospital provide tertiary services.

The Carnival Joint Operation Command Posts may include Advanced Medical Posts (AMP), which are on-site shelters insulated from the sun's ultra violet rays and easily mobilized by a trailer that is outfitted with Trauma Emergency Medical Kits. It is a Generator powered device, has water storage and purifications capability, emergency lighting, and can be used as a Portable Isolation Contamination System. Ambulances equipped with the necessary diagnostic and stabilization equipment for mobile pre-hospital emergency patient care and transfer between the AMP and the surrounding Hospitals (when needed) are also available (Office of the Chief Secretary, 2010)

There has been an increased presence of Health Education-related materials during the carnival period. These include mass media advertisements (television and radio), brochures, posters, on-site information booths (that provide limited screening), etc. The topics covered include personal safety (don't accept drinks from strangers, keep in groups, don't walk around with/flash large quantities of money), road safety (don't drink and drive, over-taking safely, etc.), and food safety (appropriate vending practices, hand washing, etc.). These advertisements are developed and distributed via various Ministries of Government and the Tobago House of Assembly.

3.2. PUBLIC/ENVIRONMENTAL HEALTH

There are expanded public/environmental health services during the carnival period. At the main stages/venues, there is continual waste removal by the government agencies (SWMCOL, CEPEP, Public Health, LEP) and their subcontractors. Public sanitation (toilets, running water) facilities are erected at high-traffic/main-stage areas. In addition, Public Health Food Inspectors also make frequent inspection trips at private and public events.

Dust presents several health issues, and provisions have been made to reduce such. For example, the areas (roads, stage, etc.) where Panorama competitions are held have been paved. In addition, special attention has been paid to managing crowds. For example, barriers have now been erected at Panorama and along some of the carnival procession routes to prevent spectators from converging onto the stage area.

3.3. OTHER HEALTH/SAFETY SERVICES

Child Safety is managed via several mechanisms including having nametags on children, etc. The Division of Health and Social Services/THA provide booths for the Safety and Care Service for Minors in Tobago. There is an enhanced security (police and private) presence for the children's parades.

Most of the larger carnival bands also provide a host of health and safety conveniences for its band members. These include "sober-spaces" where coffee, etc. is provided; air-conditioned "cool down" spaces where water and other drinks are provided as part of the package; toilet facilities; and care packages (condoms, tampons, sanitizers, biscuits, etc.).

4. TIMING AND SCALE

Considering the scope and timing of carnival activities, carnival health issues now arise all year, even though most may manifest themselves in the traditional high season of carnival. For example, the occupational health and safety issues of carnival service providers (eye injuries in welders, back injuries in steel-benders, etc.) have now become year-round issues that require interventions (preventative and curative). Issues affecting human sexuality (unplanned pregnancies, STI/HIV infections) also require extended treatment, and social support, again, expanding the health needs associated with carnival. The health facilities are usually inundated with patients with cough/cold symptoms immediately following the carnival period.

The "scale" component measures the ability of the sector to provide the necessary services given the increased need during the carnival period. Though various agencies indicate an increased presence (garbage collection, food inspections, etc.) the volume of staff and the infrastructure required to continually monitor and maintain these activities is simply not available during the peak periods. For example, the Public Health Inspectorate does not have the capacity to provide 24-hour food monitoring at ALL events (private and public) during the 2 weeks before carnival inclusive of carnival Monday and Tuesday. The sanitation system, seems to work relatively well at the main events (the Savannah, etc.), however garbage collection is inadequate along the streets of Port of Spain since the main streets are blocked, preventing the garbage trucks from moving freely.

The scale of "welfare" services is also limited. For example, though at the main venues, public toilets are available, these are usually untidy, without toilet paper, and without running water. In addition, these services are usually not available along the streets outside of the main staging areas, where most of the patrons traverse. In some instances, the public toilets that are usually available at other periods, are locked during the carnival period, as was evident at the Scarborough Esplanade in Tobago in 2014. This presents a public health risk, since individuals are forced to urinate (and defecate) on the streets, on buildings and nearby bushes, without the "luxury" of running water to wash hands after the fact.

For example, though at the main venues, public toilets are available, these are usually untidy, without toilet paper, and without running water.…This presents a public health risk, since individuals are forced to urinate (and defecate) on the streets, on buildings and nearby bushes, without the "luxury" of running water to wash hands after the fact.

5. TECHNOLOGY & SKILLS

Technology refers to the capacity to use to deliver on the outputs of the various agencies. As previously indicated, accidents and injuries are significant health issues associated with carnival and the current health system is ill-equipped with response technology. For example, medical evacuation helicopters are not available for quick transport, and in their absence, crowd control technologies, enhanced ambulances and designated emergency routes must be a priority. The current life-saving techniques employed by our Emergency Management Services (on the ambulances) are extremely limited, and enhanced training and legislative restrictions lifted to ensure that the required skills are available.

Technology also refers to our ability to use our culture, practices, beliefs and norms to positively influence those outcomes. For example, we have a strong oral tradition in the form of calypso, speech band, etc., and these art forms should also be used as the vehicles for our health education messages.

6. INITIAL CONCEPTION OF CHANGE IN SCALE AND SCOPE

Mass-gathering health can be understood as an inter-relationship between three domains: (1) biomedical; (2) environmental; and (3) psychosocial (Arbon, 2007). As a result, interventions to improve such must take into consideration those three factors. A model that may be used to identify and implement interventions, as outlined in the Planning Framework For Public Health Practice (National Public Health Partnership Secretariat, 2000), includes:

I. Public policy development
II. Legislation and regulation
III. Resource allocation
IV. Engineering and technical interventions
V. Incentives (financial and non-financial)
VI. Service development and delivery
VII. Education (including skills development) within industry groups (steel band, calypso, mas)
VIII. Communication (including social marketing)
IX. Collaboration/partnership building (community & inter-sectoral)
X. Community & organisational development (including organisational policy)

Some of the immediate needs include the development of (a) mass egress plan for Port of Spain (and other areas where large carnival activities take place) and event/venue evacuation plans; (b) a comprehensive measurement system; and (c) an expanded health promotion system.

6.1. MASS EGRESS/EVACUATION PLANS

The mass evacuation of a particular area is necessary (a) when a hazard, be it natural or technological, threatens and puts at risk the safety of those within the area, or (b) following the impact of a hazard which has subsequently rendered the area uninhabitable. Evacuation becomes necessary when the benefits of leaving significantly outweigh the risk of 'sheltering-in-place'. Several key components of carnival may require mass evacuations, for example a fire at a main stage event or a fete, collision of a music truck, which has overturned on a narrow roadway, or a flood in Port of Spain on Carnival Tuesday. The mass egress plans would outline (in detail) the components associated with the five phases of evacuation: (1) the decision (to order an evacuation); (2) Warning; (3) Evacuation; (4) Shelter; and (5) Return (HM Government, 2014).

Currently, there are no mass evacuation plans for Trinidad (Ofiice of Disaster Preparedness and Management, 2013), however a Scarborough Emergency Evacuation Plan has been developed by TEMA (Office of the Chief Secretary, 2012). Event and/or hazard specific mass egress planning for the main carnival venues is critical and should be a priority for development and implementation.

6.2. ENHANCED MEASUREMENT SYSTEM – RESEARCH/DATA COLLECTION AGENDA, DISEASE AND INJURY SURVEILLANCE SYSTEM

The information presented above included primarily anecdotal references, as the data was not available (either not collected, or collected in a manner that it not user-friendly [in paper medical records for example]). This presents a significant public policy development challenge, as Trinidad and Tobago does not have the data required to make "evidence-based decisions". As a result, an enhanced measurement system is urgently needed. This system includes the development of a strategic research (data collection) agenda, which identifies the priority areas (where there are "data-deficiencies"), the funding opportunities, an implementing structure (to include agencies and how they interact) and timelines.

Surveillance is strengthened by having multiple systems; by having direct access to local public health teams on the ground who can rapidly check on information; by having single points of contact across organizations where information can be cross-checked; and by having a robust command, control and coordination system where all information is brought together in one place

A comprehensive disease and injury surveillance[5] system is also critically needed within the medical/public health system generally, but specifically during the carnival period, when mass gatherings and therefore mass causality events are likely to occur. As previously outlined, injuries relating to accidents, and food-borne illnesses increase during the carnival period. To effectively deal with such problems, medical/public health professionals must quickly detect issues and intervene to prevent further illness/ injury and death.

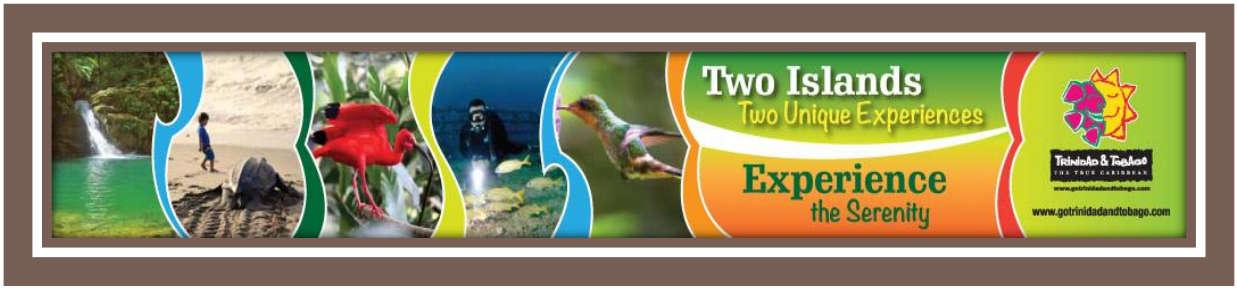
Surveillance is strengthened by having multiple systems; by having direct access to local public health teams on the ground who can rapidly check on information; by having single points of contact across organisations where information can be cross-checked; and by having a robust command, control and coordination system where all information is brought together in one place (McCloskey & Endericks, 2013). The recommended types of surveillance include syndromic (and injury), venue-specific/sentinel site, and laboratory/microbiological. Of course, internationally required surveillance remains critical. A robust surveillance system is critical for the effective collation, analysis and response to disease and injury.

5 Disease surveillance is the epidemiological practice of recording, monitoring and analysis disease occurrences for trends (patterns of progression).

6.3. HEALTH PROMOTION/EDUCATION

According to the World Health Organization's 2005 Bangkok Charter for Health Promotion in a Globalized World, health promotion can be defined as "the process of enabling people to increase control over their health and its determinants, and thereby improve their health" (World Health Organization, 2005). Health promotion includes health education, advocacy, research, social marketing, community capacity building, program development, implementation and evaluation, and policy development.

The various health concerns of carnival can be mitigated with effective health promotion programmes. For example, to mitigate the negative health effects of food borne illnesses, the implementation of an enhanced health education programme (including the use of cultural components); advocating for the provision of sanitation conveniences (safe water sources and bathroom facilities) at the main stage areas, and long the streets of Port of Spain during the carnival period; building the capacity of food handlers by effectively educating about safe preparation, cooking, storage and reheating practices; while implementing a rigorous Public Health Inspection system would ultimately reduce the levels of food-borne illnesses recorded. Prevention and mitigation of the health concerns of carnival require a health promotion model (not just a health education model).



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