

Quinnipiac University

***Staphylococcus aureus* Colonization in the Oral Cavity of
Healthy Individuals in Quinnipiac University**

by

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B.S. Temple University, 2011**

A Thesis

**Presented to the School of Health Science and
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Abstract

***Staphylococcus aureus* Colonization in the Oral Cavity of Healthy Individuals in Quinnipiac University**

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Methicillin-resistant *Staphylococcus aureus* (MRSA) is a strain of the gram-positive bacteria of *Staphylococcus aureus* that is resistant to multiple antibiotics, including Oxacillin, Cefoxatin, Amoxicillin, and Penicillin. The purpose of studying this antibiotic resistant bacteria was to (1) survey healthy adults in a college setting to determine the colonization of *S. aureus* and MRSA in the oral cavity, (2) gain a better understanding of the development of antibiotic resistance in this strain of *S. aureus*, and (3) to study the spread of MRSA in the oral cavity throughout the community and to determine the risk factors associated with it. MRSA has evolved from two different sources, community acquired and healthcare acquired with the former being more virulent and less resistant to

antibiotics and the latter being very resistant to antibiotics but with fewer virulence genes. Once distinct differences are sometimes indescribable as CA-MRSA enters the healthcare arena and vice versa. This pathogen can cause mild to severe infections and can spread person to person or via fomites. Fomites are objects that aid in the transmission of pathogenic organism from objects to individuals. The distinction between colonization with *S. aureus* and infection with *S. aureus* is significant, but healthy individuals colonized with *S. aureus* are at risk for infection themselves as well as spreading infection. Our sample population has a large percentage of students studying and working in the healthcare system, therefore, it is expected to see both CA- and HA-MRSA in the collected isolates. Six hundred and seventy five samples have been collected from healthy adult students in a college setting. Oral samples were cultured on MSA, a selective and differential agar for *S. aureus*. Preliminary results indicate 17.3% of samples collected tested positive for *S. aureus*. Techniques such as gram staining, Kirby Bauer testing, coagulase testing, and the comparison to known *S. aureus* samples were used to test for antibiotic sensitivity or resistance and confirmation of the species. This study focused on determining the presence of *S. aureus* (MSSA and MRSA) in the oral cavity of a healthy student population and has revealed that a 16.3% percentage of this population is colonized with *S. aureus* with only 3.7% MRSA carriers.

***Staphylococcus aureus* Colonization in the Oral Cavity of Healthy Individuals at Quinnipiac University**

This thesis is approved as creditable and independent investigation by a candidate for the degree of Master of Health Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Introduction

A wide variety of bacteria comprise the normal flora of the human body; these types of bacteria protect the body from pathogenic microorganisms. A prime example of a bacterium with high adaptability is *Staphylococcus aureus*, (*S. aureus*). *S. aureus* is a recognizable gram-positive cocci bacteria that appears clustered. This bacterium has established itself over the last decades as one that can survive in harsh conditions and one that can cause serious infection.^{1, 2,3,4,5,6,7, 8} *S. aureus* can be presented as two forms in relation to the human body, commensal or opportunistic pathogen. Being commensal means that these bacteria are considered part of the normal flora in certain sites of the body and would compete with opportunistic pathogens over sources. One in three people in the United States are colonized with *S. aureus* in a variety of places, which indicates the prevalence of *S. aureus* as normal flora in the overall population.^{4, 11,12}

In this case, *Staphylococcus aureus* may remain harmless and cause no disease or infection. Recent studies have shown that *Staphylococcus aureus* colonization in the nasal cavity is present in about 30% of the population.^{1,2,3,4,5,6,7} Additionally, larger studies have suggested that about 20% of the human population harbor *S. aureus*.^{7,9} These individuals are carriers of the *S. aureus* without being infected; they are asymptomatic. However, being a carrier yields

the risk of transmitting *S. aureus* to others who may be vulnerable to infection.^{6,7,8,9} *S. aureus* can colonize on different parts of the human body as harmless bacterium, mainly on the skin and the nasal cavity.^{1,5,6,7} Kluytman et al designated *S. aureus* colonization into three category, dominant carriers, non carriers, and occasional carriers. Dominant carriers consist of about 20% of the population and non carriers represent about 20% of the population, whereas occasional carriers comprise 60% of the population.^{10, 11,12} Recent studies suggest that the prevalence of carrying *S. aureus* in the nasal cavity is a risk factors for infection.²¹

A carrier runs the risk of transmitting *S. aureus* to others that are vulnerable to infection.⁶ It has been shown that *S. aureus* infections are occurring more than other types of bacterial infections as shown by *S. aureus* infection cases that are reported yearly.⁷ Comparing early studies that indicate the gigantic magnitude of the annual cases of *Staphylococcus aureus* infections' between 1995 and 2003, the number of cases increase tremendously from 13,550 to 390,000 cases.^{7, 10, 21} Unfortunately, preventable infections such as MRSA are causing more death cases in the USA than HIV. The death cases causes by HIV estimated to be 15,529 deaths; while, MRSA killed more than 18,000 annually.⁸⁹ This rise increased the annual cost of *Staphylococcus aureus* treatment from \$435.5 million to \$14.5 billion.^{7,10}

S. aureus can also be pathogenic and cause either skin infections, or fatal infections such as pneumonia and bacteremia.^{4,13} *S. aureus* was discovered in the 1880 by a British surgeon that recognized complications occurring in patients

after surgery, such as sepsis and blister formations, that were sometimes fatal.^{14,15} After the introduction of antibiotics such as penicillin, certain strains became resistant to the drug and later to other antibiotics including methicillin. It is important to understand that methicillin is not available for testing and it was substituted with similar antibiotics called oxacillin.

The development of this resistant *S. aureus* strain was due to the rapid use and misuse of antibiotic treatments.¹⁶ On the other hand, the intensive use of antibiotics for non-therapeutic purpose in the agriculture has also play a role in the increasing rate of resistant strains of *S. aureus*. It is estimated that 70% of the antibiotics used in the livestock in the Unite States were utilized in non-therapeutic purpose such as promote of growth and prevention of infection.⁷⁸ *S. aureus* is believed to be one of the major bacteria pathogens that causes skin and soft-tissue infections.^{4, 5,7,13}

The capability of *S. aureus* to infect is due to its ability for evasion of the human immune system. The first lines of defense against this bacteria is the skin and body secretions that keep the *S. aureus* from being able to enter sterile parts of the body; therefore, *S. aureus* colonizes these parts in numerous individuals worldwide.^{1,2,3,4,5,6,7} *S. aureus* overcomes some of the fundamental elements that are produced by the immune system by avoiding being engulfed by phagocytic leucocytes.^{4,17,18} *S. aureus* also produces several molecules that are secreted, such as reactive oxygen species that prolong its survival after ingestion by innate immune cells. As well as producing molecules that block the function of complement protein which is another defense mechanism produced by the

immune system to elicit a proper response against *Staphylococcus aureus*.^{4,17,18,19} Also, *S. aureus* contain several toxin that allow it to survive in the host and destroy its tissue such as the PVL (Panton-Valentine leukocidin) toxin.

The therapeutic evolution and golden era of antibiotics, also resulted in certain bacterial strains to be resistant to these antibiotics.²⁰ *S. aureus* has gained resistance genes to several antibiotics over the last decades, first reported shortly after their exposure to therapeutic treatment. This occurs due to the intensive use of antibiotics to fight infections.²⁰ Methicillin-resistant *S. aureus* (MRSA) was noted to cause infection in healthcare patients by 1961.^{3,4,5,23,24} This occurred a few years after discovering certain bacterial strains that were resistant to penicillin.^{3,5,7} As a consequences of the bacteria changing its genetic materials to acquire new resistant genes as part of its evolution, more than 80% of *Staphylococcus aureus* are resistant to penicillin.⁷ Methicillin-resistant *Staphylococcus aureus* is characterized by being resistant to Beta- beta lactam antibiotics which include penicillin, and oxacillin.^{6,21,22,25,26,27}

It important to noted the mode of action of the beta-lactams antibiotics in order to understand the mechanism that *S. aureus* evolved to overcome it. Beta-lactams antibiotics works by biding to the penicillin biding protein, that is present in the cell surface of the bacteria and inhabit the bacterial cell wall synthesis.⁹⁰ *S. aureus* become resistant to penicillin acquired a plasmid that contain the *blaz* gene which encode for a lactamase enzyme that destroy the beta-lactam ring. The rapid alteration of *S. aureus* to its genetic material in order to survive has allowed it also to acquire a new gene. This time it acquired the *mecA* gene which

permit *S. aureus* to become resistant to methicillin. The *mecA* gene encode for the alteration of the penicillin binding protein.

In 2002 it was revealed that MRSA was associated with about 40% of the infections in intensive care units in the United States.²⁰ Additionally, MRSA was mostly associated with nosocomial infections.^{3,22,25} This strain of MRSA was called Healthcare-associated Methicillin-resistant *Staphylococcus aureus* (HA-MRSA). All patients who have HA-MRSA share similar risk factors, which contribute to the rapid infection of these individuals. HA-MRSA risk factors are described as those who have either been hospitalized in the past, had a surgery, stayed in long term care facility such as nursing home, or dialysis patients.^{4,28,33} There is a rapid increase in the infections due to HA-MRSA worldwide.^{21,38,39} A surveillance system provided by the United States government, that examined cases of HA-MRSA between 1995-2003 illustrates that MRSA infections are increasing. In 1995 35.9% of hospital infections were due to MRSA while in 2003 this percentage doubled to 64.4%.²⁹ Furthermore, in 1995 there were 1838 isolates that tested positively for MRSA; while, in 2003 there were 3392 isolates that were confirmed to be MRSA. This significant increase shows that infections due to MRSA are problematic in hospitals.^{21,22,25,29}

According to the CDC, in 2005 there were more than 270,000 hospitalized patients with MRSA infections in the United States, with 17,260 reported deaths related to MRSA.³² One can see that the common aspect between all these patients is the locations of infections. It was well established that such an infection can be correlated to these settings and believed to originate from it. This

supports the notion that MRSA is the mostly prevalent gram-positive bacterium that causes death in the USA.^{4,23,31,40} In addition HA-MRSA is reported to contribute to more than 85% of the invasive infections occurring in hospitals based on the national surveillance system.^{21,32} Part of the reason that there are more MRSA infections is due to the presence of *Staphylococcus aureus* in the nasal cavity of some people.^{12,21} Based on the results of the 2003-2004 of the National Health and Nutrition Examination survey, the rate of MRSA carriers is 1.5% nationwide.^{22,34} However, several studies indicate that the percentage of MRSA is slightly different. According to a study that describes the nasal carriage of MRSA in a university student population indicates that the MRSA rate is 7%.³⁶ Several other studies that were conducted on the prevalence of MRSA suggested otherwise, with a range of nasal carriage between 1.5% to 31%.^{1,35,36,37}

Interestingly, the occurrence of MRSA took a new turn and was first starting seen in the community setting, where it was precipitously infecting individuals were not associated with healthcare settings or have not shown the risk factors that were very different than HA-MRSA.^{21,28,41} This strain was infecting young and healthy individuals, compared to the existing factors for HA-MRSA which infected relatively older patients with risk factors.^{21,28,41} This new strain was termed community-acquired Methicillin-resistant *Staphylococcus aureus* (CA- MRSA) based on the origination of infection location.

To illustrate the risk factors that are associated with the CA-MRSA infection and the reason to infect healthy and young individuals. Investigators

have reported that sharing personal items among athletes and college students allow the transmission and spread of outbreak in university setting. This is due to certain students that are colonized with MRSA in their nasal cavity.³⁶

Thus, it was presumed that there were two strains that may or may not have originated from the same strain that infected the human population at a rapid rate in the hospital and community setting. Researches have found that the genetic elements of each are genetically isolated which conclude that MRSA strains evolved in different locations independently.^{4,42,43,44}

However, research has shown that CA-MRSA infections are on the rise and is more predominant than the HA-MRSA infections^{4,42,43,44} Therefore, CA-MRSA has evolved faster to be more pathogenic and spread easily among individuals without the predisposing risk factors that are seen in HA-MRSA. To further research the origin of CA-MRSA, its first case was reported from the rural areas of Australia.^{45, 46} Surprisingly, these individuals have never been exposed to the healthcare setting before so there were no well-known risk factors associated with HA-MRSA.^{4,44,45} On the other hand, the first cases of CA-MRSA that were established in the United States was between 1997 and 1999, in which four children died due to necrotizing infection caused by CA-MRSA. Since then, CA-MRSA has infected many individuals and has become very virulent.^{41, 42}

Consequently, this transition of evolving from one location to another with *S. aureus* infections has necessitated the CDC to establish a lineage map that consists of all the strains that cause MRSA infection into groups.³⁰ It was found

that those infections related to HA-MRSA belong to the lineage USA 100, 200, 500, 600, and 800 strain. On the other hand, those related to CA-MRSA belong to USA 300 and USA 400 strain, while USA700 strain are shared by those isolated from both setting.³⁰

It has been established that HA-MRSA strains are resistant to several antibiotic drugs including the Beta-lactam family. On the other hand, the CA-MRSA are only resistant to the Beta-lactam antibiotics family, while still susceptible to clindamycin, sulfamethoxazole, tetracycline, and vancomycin.^{1,2,24,30} The resistant strain of *S. aureus* which include MRSA, evolved to be resistant to the Beta-lactam antibiotics by alternation of the penicillin binding protein (PBP2a). This protein is essential for the *S. aureus* to be protected from the Beta-lactams action, due to its part in the assembly of the cell wall.^{51, 52, 53, 54} The protein PBP2a is encoded by a gene called *mecA*, which is responsible for the resistant strain of *S. aureus*. In addition, *mecA* is transported through a staphylococcal chromosome cassette called *SCCmec*.^{50, 51, 55} The *SCCmec* gene mobile is very sophisticated in the transport of virulent genes among different species that allow rapid acquisition of resistant genes. There are several types of the *SCCmec* mobile genetic; consequently, *SCCmec* type I consists of only the *mecA* gene, and this allows it to be resistant to the Beta-lactams antibiotics family only. While *SCCmec* Type II and type III acquires more than one element that is responsible for multidrug resistance. *SCCmec* type IV also contains one resistant element as does type I, however, it is smaller than type I in size, which makes its more efficient in the horizontal transferee, and this

type of genetic elements are predominant in the CA-MRSA strain, whereas type II and type III are prevalent in HA-MRSA isolates.^{4, 50, 56, 57, 58, 59} Remarkably, other non-pathogenic *Staphylococcal* species aid in the transferring of the genetics island that contains the resistant genes to *S. aureus* (MSSA) to become MRSA.⁴

A trend was found between late 1970s and 1990s, where SCCmec was primarily found in the *Staphylococcus epidermidis* and not in the *S. aureus*. Evolution took a different direction by transferring those advanced mobile genetics island to *S. aureus*, that allow resistant occurrence.^{4, 60, 61, 62}

Interestingly, there is correlation between HA-MRSA and CA-MRSA in which they exchange some of their genetics information for better adaption. This results in similarity in the genetic pattern among these strains, that allow us to predict and examine USA100, which is prevalent in the HA-MRSA. However, exchanging genetic material has led to arrangement reassembly among other strain such as the USA300 and the USA 400, which are prevalent in the CA-MRSA. Recent studies have shown that the USA300 strain is taking over the USA400 strain as the dominant in the community since 2001.⁶⁴ Consequentially, the USA300 strain has been the prominent reason for high infections in the community setting in the United States.⁶⁴ This is an important point to consider since recent studies have detected gene locations to be similar in new isolates of MRSA. However, the origins of CA-MRSA and HA-MRSA are believed to originate independently after several community-reported cases are not related to any of the well-known health-care risk factors.^{4, 58}

Community-acquired methicillin resistant *Staphylococcus aureus* has been reported in inmates⁶⁷, military personnel⁶⁷, sport athletes⁶⁸, school children, and daycare children.^{63, 64} Additionally, the common theme between *HA-MRSA* and *CA-MRSA* is that both are transmitted not only by direct skin- to-skin contacts but also via clothes and uniforms that are used by ill individuals.^{69, 70} Furthermore, fomites contaminated with *CA-MRSA* can be a reservoir for outbreak or infections.⁶⁵ A study showed that *MRSA* can survive on a contaminated area for up to five weeks.⁵ *CA-MRSA* is able to easily spread rapidly in such communities.^{12, 14} A few studies have documented the prevalence of *CA-MRSA* in small student populations, but they were mainly investigating *MRSA* nasal carriage.^{1, 2, 3, 4, 5}

The aim of the project is to investigate the percentage of the Quinnipiac University student population that are (1) oral carriers of *Staphylococcus aureus* and (2) oral carriers of *Staphylococcus aureus* that contain antibiotic resistance genes in the oral cavity.

Materials and Methods

Subjects:

After designing the project and the experimental tools that were going to be involved in this study, a request of approval was obtained from the Quinnipiac University Human Experimentation Committee/Institutional Review Board since there are human subjects involved in the study.

The approval of students by the Human Experimentation Committee involves a consent form that clarifies the objective to participants, and states that this study is safe and non-invasive and approved by the University. The consent form with a brief explanation of the purpose of the study, is including in Appendix 2. Included in the consent form is a confidentiality agreement that protects the privacy of the individuals. Also, the consent form contains brief details of the experiment. Additionally, only participants who are older than 18 years of age are allowed to sign the consent form and participate in the study after given a brief introduction about the study.

Participation in this study was voluntary and anonymous. A questionnaire that consists of twenty two questions were distributed to the participants containing demographic data relating to age, sex, educational level, knowledge of MRSA, hobbies and the residences where they may interact with MRSA or a carrier, is including in Appendix 3. These questionnaire surveys were obtained

from students along, with the consent form, and the results survey entered manually into a survey database on the Internet (Survey monkey).

Sampling Technique:

A sterile cotton swab was provided to students and a swab of the oral cavity was obtained.¹ The cotton swabs were inoculated onto Mannitol Salt Agar (MSA) plates.¹ The MSA plates were then numbered accordingly in correlation to the assigned questionnaire survey, which made it easy to track each plate with the corresponding survey for later analysis. At the time of sample collection, only the first quadrant was streaked with a sterile swab to allow bacterial growth.^{1,88} A sterile inoculation loop was used to streak the other quadrants of the MSA plate to allow for bacterial growth on the plate. The MSA plate was then placed into the incubator for 24 hours at 35-37 °C, upside down to prevent bacterial contamination.^{1,88} After 24 hours of incubation the plates were retrieved and examined for any possible growth; if no growth was observed the plates were placed back into the incubator for another 24 hours at 35°C.^{1,88} After 48 hours of incubation the samples were retrieved and examined for growth again. MSA plates that contain a yellow colony, as a result of mannitol fermentation by the bacteria that yield a positive result for *S. aureus*, were kept for further testing while MSA plates that had no color change or colonies that were not yellow were discarded.

MSA plates with yellow colony formation were picked up with a sterile loop and inserted into a tube that contained about 8 ml of tryptic soy broth.^{1,88} After

inserting the sterile loop with bacteria from the MSA plate, the tubes were placed into the incubator for 24 hours at 35°C for continuation of bacterial growth. After 24 hours the tubes were retrieved from the incubators and prepared for long-standing storage.

The study was done into two phases, collecting the samples in one semester plus freezing them, then thawing the samples in addition to testing them in the second semester.

Long-term storage:

The first step for freezing the samples in -70°C is to obtain cryo-vials and marked these cryo-vials with the same-labeled information that was on the TSB tube, which correspond to the labeled information from the MSA plate. A volume of 150 µl of sterile pure glycerol was added to the cryo-vials tube. The tubes were vortexed for a few seconds, and with a new sterile tip 850 µl was withdrawn and inserted into the cryo-vials. These cryo-vials are placed in a special box with our information written on it in the -70°C freezer in room TH206 for future study.

Biochemical Testing; gram-stain, coagulase test, catalase test:

The samples were retrieved from the freezer and inoculated into TSB broth. They were then transferred to MSA plates for microorganism testing and confirmation of *S. aureus*, ensuring the presence and growth of *S. aureus* in case of contamination.¹ Thawing the samples was conducted as followed. A bucket of ice was obtained and our frozen samples were placed into the bucket. Sample

numbers and dates were written on to a new TSB tube and scrape frozen surface with sterile spatula were placed into the new TSB tube. This process was done in a fast fashion to ensure that the frozen samples were not at all thawed.

Gram staining was performed as the microbiology laboratory protocol's direction.⁸⁸ The presence of gram-positive, cocci shape bacterium that retained the crystal violet colors due to the presence of a thick layer of peptidoglycan was confirmed. This stain involve by first applying a crystal violet dye followed by the addition of iodine, addition of alcohol result in rapid decolonization. Ultimately, counterstaining with safranin. Only purple color yield is a positive result for gram-positive bacteria, which in this case is suspected to be *S. aureus*, since it was isolated from a Mannitol Salt Agar (MSA) positive samples.

Coagulase testing took place to determine whether these samples contain the coagulase enzyme or not.⁸⁸ The principle of this test involves the clumping formation, which is an indication that can help differentiates the *S. aureus*, which is coagulase –positive, from other species that are coagulase-negative.⁸ *S. aureus* positive for the coagulase enzyme which can convert fibrinogen to fibrin resulting in blood clotting.⁸ There are two procedures that can identify coagulase present in the collected isolates. Slide test, which consist of suspension of fresh bacteria on microscope slide mixed with a drop of EDTA-treated rabbit plasma. The clotting formation on the slides indicate that the isolates is coagulase-positive.^{73,74} Tube test, is the second method that can be used to identify the presence of coagulase enzyme. This test utilize by adding a fresh suspension of bacteria to a small tube containing the EDTA-treated rabbit plasma. While the

slide test is simple and yield fast results, the tube test may take up to 24 hours. However, the slide test may give false-negative results.⁷³ Therefore, the use of tube test yield confirmed results of coagulase-positive with high specificity. Recent, study have shown that *S. aureus* can be either coagulase-positive or negative; therefore, it is important to distinguish among them.^{73,74,75}

Catalase testing was performed by adding a drop of hydrogen peroxide to a microscope slide with suspension of fresh bacteria, and bubbles were observed.⁴ The catalase enzyme produce by *S. aureus* in order to survive against the defensive secretion of the host. The purpose of the catalase test to distinguish between catalase-positive of *Staphylococcus* species from catalase-negative of the *Streptococcus* speices.^{4,8}

Antimicrobial susceptibility tests:

Antimicrobial susceptibility testing was performed.⁸⁶ The purpose of this testing was to examine whether the *S. aureus* samples collected were resistant to antibiotics. A sterile swab was obtained to inoculated the cultivation of bacteria onto a Mueller Hinton media. Each Phosphate buffered Saline (PBS), contain bacterial cultivation was standardized with a 0.5 McFarland. The purpose of standardizing the bacteria suspension with 0.5 McFarland to yield 1 x 10⁸ CFU/ml of bacterial suspension in each tube. Therefore, ensuring that the density of bacterial suspension is the same for all isolates before plating them into the Muller-Hinton media.^{73,94}

After standardizing each PBS tube with 0.5 McFarland, a new cotton-swab

dipped and plated into the Mueller Hinton plate by rotating the plates while plating, in order to have a suspension of bacterial growth. Then with the help of antibiotics dispensers, seven different antibiotics were pressed into the MH media plate and incubated upside-down overnight at 35-37°C. The antibiotics used in this experiment were penicillin, tetracycline, oxacillin, ceftriaxone, ciprofloxacin, erythromycin and vancomycin. The table below was utilize from the BMS laboratory manual to determine the zone of inhibition for *Staphylococcus aureus* strains. After 24 hours the MH media plates were retrieved and measurement of the zone of inhibition were recorded in millimeters (mm).

Abbreviation	Name	Resistant	Intermediate	Sensitive	Classification
P	Penicillin	<28mm		>29mm	Penicillin
CF	Cephalothin	<14mm	15-17mm	>18mm	Cephalosporin
CRO	Ceftriaxone	<13mm	14-20mm	>21mm	Cephalosporin
GM	Gentamicin	<12mm	13-14mm	>15mm	Aminoglycoside
CIP	Ciprofloxacin	<15mm	16-20mm	>21mm	Flurooquine
TE	Tetracycline	<14mm	15-18mm	>19mm	Tetracycline
E	Erythromycin	<13mm	14-22mm	>23mm	Macrolide
OX	Oxacillin	≤10mm	11-12	≥13 mm	Penicillin
N	Neomycin	<12mm	13-16mm	>17mm	Aminoglycoside
B	Bacitracin	<8mm	9-12mm	>13	glycopeptide
VA	vancomycin			>15mm	glycopeptide
PB	Polymixin B	<8mm	9-11 mm	>12	polymixin

DNA Isolation:

In this step, the UltraClean Microbial DNA Kit made by (MO BIO Laboratory, Inc.) was used to extract pure DNA isolates collected. The Kit allowed the isolation of DNA by applying several solutions to the provided bead filled tubes, in addition to the collected microbial culture in order to lyse the proposal *S. aureus* isolates, and to obtain their DNA for further analysis. Only MSA differentiated positive samples were utilized in the extraction and isolation of DNA. First, 1.8 ml of *S. aureus* cultures in 24hr TSB was added to a 2 ml collection tube. They were then centrifuged at 10,000 x g for 30 seconds at room temperature, and the supernatant was transferred and the tubes were spun at 10,000 x g for 30 seconds at room temperature. A pipet tip was used to remove the media supernatant.

Next, the cell pellet was resuspended in 300 µl of MicroBead Solution and vortex. Then, the resuspended cell was transferred to a MicroBead tube. We add 50 µl of Solution MD1 to the MicroBead Tube. Fifth, the tubes were placed on vortex machine and secured by tape horizontally. The vortex was allowed to operate at high speed for 10 minute. Seventh, the tubes were placed in a centrifuge machine and centrifuged at 10,000 x g for 30 seconds at room temperature.

Next, after centrifugation, the supernatant was transferred to a clean 2 ml collection tube provided in the kit. A total of 300 to 350 µl of supernatant were collected. 100 µl of solution MD2 were added to the supernatant and vortex for 5

seconds and the tubes were incubated at 4 °C for 5 minutes. The tubes were then centrifuged at room temperature for 1 minute at 10,000 x g. The entire volume of supernatant without the pellet were transferred to a clean 2 ml collection tube.

A volume of 900 µl of Solution MD3 was added to supernatant and vortex for 5 seconds. Approximately 700 µl were added to the Spin Filter and centrifuged at 10,000 x g for 30 seconds at room temperature. Next, discarded the flow through and the remaining supernatant was added to the Spin Filter and centrifuged at 10,000 x g for 30 seconds at room temperature. A volume of 300 µl of Solution MD4 were added and centrifuged at 10,000 x g for 30 seconds at room temperature. The flow through was removed. The tubes were centrifuged again for 1 minute at 10,000 x g. The Spin Filters were placed in a new 2 ml collection tube.

Then, 50 µl of Solution MD5 was added to the center of the white filter membrane. The tubes were centrifuged at 10,000 x g for 30 seconds at room temperature. By removing the Spin Filter from the tube, the DNA was isolated and extracted in the tube and was then ready for PCR. Tubes that contained DNA extraction were stored in -20 °C freezer until shipment. They were then transferred into 96-well plates and sent for purification to Functional Biosciences, Inc., Madison, Wisconsin.

16s ribosomal RNA:

Samples that grow on MSA and catalase positive and either coagulase positive or coagulase negative were sent for 16s ribosomal RNA analysis. The 16s rRNA primers that used in this experiment is 16s-F-AGA GTT TGA TCC TGG CTC and 16s-R- TAC CGC GGC TGC TGG CAC. The 16s rRNA gene sequence contain variable and conserved region of about 15,50 bp. It contain interspecific polymorphisms region that yield specific and accurate difference when gene sequences is applied. The universal 16s rRNA primers are design to be complementary to the conserved region and either at the end or at 540 bp.⁹² In our experiment only the first 500 bp were sequenced.

NCBI database Search:

DNA from each of the MSA differentiated positive culture was sent for PCR sequencing. These sequences allow the identification of unknown organism or previously known organism.⁹¹ This method aids in the comparison between isolate identification with their common ancestor, in order to determine their unique genetics evolution. 16s ribosomal RNA is utilized in this experiment since it is common on all bacteria species, its function have not changed over times, and its reliable size allow it to be sequenced cheaper and faster.⁹¹ Another feature of 16s rRNA sequences, which with the coupling of bioinformatics databases such as NCBI can recognize the genus and species identification with percentage of match to that particular organism.⁹¹The National Center for Biotechnology Information (NCBI) have millions of nucleotides sequences as

databases; therefore, a basic search by blasting our sequences that we obtained into the search engine for nucleotides 16s rRNA yield the identification of the known cultured organisms with percentage that match the actual nucleotides from each isolates. After searching the database for each of the isolates, the NCBI has a function that generates a phylogeny tree so the isolates can be compared to each other.⁹ An advantage of using NCBI database is the daily updated of the DNA sequences to accommodate for the other linked database to the NCBI. ⁹⁴ However, the limitation for the NCBI nucleotide database can not be avoid in certain cases. Only the proposing authors of the credited sequences can modify their entry, which in some case an error may be confound for several years before modification occur.⁹⁴ Also, small fractions of the deposited sequenced genes are verified in experimental fashion, while the vast majority are interpreted by the similarity with the verified genes.⁹⁴ Another major problem for the identification of bacteria based 16s rRNA via NCBI BLAST is the lack of peer-reviewed sequences.⁹⁵ Although newly commercially gene banks are available with peer-reviewed sequences, but they contain narrow number of reference sequences compare to the NCBI BLAST.⁹⁵

Results

Our study consisted of 675 healthy individuals from Quinnipiac University. Participants were asked to sign a consent form and complete a questionnaire to obtain demographic information and assess any risk factors. Five hundred sixty four (83%) individual were not *Staphylococcus* species carriers, while 110 (16.29%) were *Staphylococcus* species carriers. To better understand the colonization in the oral cavity, a set of twenty two questions were answered by each participant to aid us in analyzing the data and assist us to have a better knowledge about each colonization in the oral cavity and risk factors that accompany such colonization. Additionally, some questions were asked to understand the general knowledge about MRSA infections, show in Table 1. These questions can also help to inform us as whether health science students have better knowledge in the topic than non-health science students.

Table 1. Demographic and risk factors of *Staphylococcus* species oral carriage among healthy individuals in Quinnipiac University.

Demographic & Risk factors	Response	Total Participants n, (%)	<i>Staphylococcus</i> species oral carriage n,(%)
Age	Total	675	110
	<18-23	586 (86.8)	95 (16.21)
	24-29	70 (10.3)	10 (14.28)
	>30	19 (2.8)	
	Missing	0	1
Gender	Male	216 (32)	38 (17.6)
	Female	459 (68)	67 (14.6)
	Missing	0	1
Major	HS	591 (87)	103 (17.4)
	Non-HS	84 (12.4)	7 (8.3)
	Missing	0	1
Level of education	Undergraduate	568 (84)	90 (15.8)
	Grad	107 (15.8)	15 (14)
	Missing	0	1
Sports athlete?	Yes	55 (8.14)	11 (2)
	No	401 (59.4)	62 (15.4)
	Past	219 (32.4)	32 (14.6)
	Missing	0	1
Go to the gym?	Yes; daily	120 (17)	19 (15.8)
	Yes; regularly	204 (30)	33 (16.17)
	Yes; sometime	265 (37.9)	42 (15.8)
	No	86 (12.7)	11 (12.7)
	Missing	0	1
Worked in a healthcare facility	Yes	393 (58.2)	71 (18)
	No	282 (41.7)	34 (12)
	Missing	0	1

(Table 1. cont.)

Demographic & Risk factors	Response	Total Participants n, (%)	<i>Staphylococcus</i> species oral carriage n,(%)
Currently working in healthcare facility	Yes	159 (23.5)	31 (19.5)
	No	516 (76.4)	74 (14.3)
	Missing	0	1
Dermatological conditions	Yes	132 (19.5)	23 (17.4)
	No	543 (80)	82 (15)
	Missing	0	1
Infected with MRSA?	Yes	10 (1.48)	1 (10)
	No	624 (92)	98 (15.7)
	Not sure	40 (5.9)	6 (5.7)
	Missing	0	1
Treated with antibiotics for illness	Yes	640 (95)	101 (15.7)
	No	35 (5.18)	4 (11.4)
	Missing	0	1
Stopped taking antibiotics, when felt better	Yes	224 (33)	29 (12.9)
	No	451 (66.8)	76 (16.8)
	Missing	0	1
Live with someone who worked in healthcare facility?	Yes	310 (45.9)	53 (7.8)
	No	365 (54)	52 (14.2)
	Missing	0	1
Do you know someone who has/had MRSA?	Yes	213 (31.5)	37 (17.3)
	No	461 (68.2)	68 (14.7)
	Missing	0	1

(Table 1. cont.)

Demographic & Risk factors	Response	Total Participants n, (%)	<i>Staphylococcus</i> species oral carriage n,(%)
MRSA kill more than AIDS?	TRUE	259 (38.3)	45 (17.3)
	FALSE	63 (9.3)	10 (15.8)
	Not sure	352 (52.1)	50 (14.2)
	Missing	0	1
You can be MRSA carrier without being sick?	TRUE	509 (75.4)	75 (14.7)
	FALSE	11 (1.6)	5 (45.4)
	Not sure	154 (22.8)	25 (16.23)
	Missing	0	1
Catch MRSA from casual contact with MRSA carrier?	TRUE	401 (59.4)	65 (16.2)
	FALSE	38 (5.6)	3 (7.8)
	Not sure	235 (34)	37 (14.6)
	Missing	0	1
Catch MRSA from sport/gym equipment?	TRUE	521 (77)	82 (15.7)
	FALSE	7 (1)	23 (21.9)
	Not sure	146 (21.6)	-
	Missing	0	1

Several of the risk factors for each of the *Staphylococcus* species oral colonization examined to aid in the understanding of MRSA colonization. Answers to the risk factors questions between MSSA and MRSA groups are examined in this table. The vast majority of both groups indicated using antibiotics to treat illness, while only 28.4% indicate stopping taking antibiotics when they felt better. Ninety two percentage have also indicate regular use of the recreation center or gym, shown in Table 2.

Table 2. Oral Carrier Answer to Risk Factors Questions

Risk Factors	Response	Oral carrier	
		MSSA	MRSA
Gender	Male	38 (17.6)	3 (60)
	Female	67 (14.6)	2 (40)
Major	HS	103 (17.4)	4 (80)
	Non-Hs	7 (8.3)	0
	Did not indicate	0	1
Sport	Yes	43 (42.1)	0 (0)
	No	62 (15.4)	5 (100)
Go the gym?	Yes	94 (92)	5 (100)
	No	11 (12.7)	0
Worked in healthcare facility	Yes	71 (69.6)	5 (100)
	No	34 (12)	0
Currently worked in healthcare facility	Yes	31 (30.3)	2 (40)
	No	74 (14.3)	3 (60)
Live with someone who work in the healthcare facility	Yes	53 (51.9)	0 (0)
	No	52 (14.2)	0
Dermatological condition	Yes	23 (22.5)	1 (20)
	No	82 (15)	4 (80)
Infected with MRSA	Yes	1 (0.98)	0 (0)
	No	98 (15.7)	
	Not sure	40 (5.9)	
Treated with antibiotics for illness	Yes	101 (99%)	5 (100)
	No	4 (11.4)	0
Stopped taking antibiotics when felt better	Yes	29 (28.4)	4 (80)
	No	76 (16.8)	1 (20)

MRSA, methicillin-resistant *S. aureus*; MSSA, methicillin-sensitive *S. aureus*

All twenty two questions for the (110) MSSA *Staphylococcus* species carrier versus the (565) no-carrier were analyzed to determine if there is any significant difference in influencing risk factors. The results reliable from 18% of the MSSA population worked in the healthcare facility versus 12%, shown in Table 3a. Based on the survey analysis of 18% versus 58.2% the null hypothesis was rejected with statistical significant of p value 0.0274.

Table 3a. Statistical analysis using difference of proportions between MSSA and non-carrier for risk factors association

Risk factors	Response	MSSA N=106	Non-carrier N=568	p-value	X ²	z-value
Working in healthcare facility	Yes	71 (18%)	393 (58.2%)	0.0274	-	2.206
	No	34 (12%)	282 (41.7%)			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, non-carrier: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

The knowledge of MRSA risk factors were analyzed to understand the difference among students, shown in Table 3b. More than 75% for the non-carrier and 14.7% of the oral carrier indicate the that you can be MRSA carrier without being sick. This indicate that individuals in both category non-carrier and carrier are aware that you can be MRSA carrier. Therefore the null hypothesis was rejected with significant of p value of 0.0274.

Table 3b. Statistical analysis using difference of proportions between MSSA and non-carrier for risk factors knowledge

Knowledge of Risk factors	Response	MSSA N=106	Non-carrier N=568	p-value	X ²	z-value
You can be MRSA carrier without being sick	True	75 (14.7%)	509 (75.4%)	0.0274	-	2.206
	False	5 (45.4%)	11 (1.6%)			
	Not sure	25 (16.23)	154 (22.8)			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, non-carrier: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

All twenty-two questions for the (110) MSSA *Staphylococcus* species and the (4) MRSA-carriers to see if there is any significant difference in the risk factors for each. Notably, 75% of the MRSA carriers stopped taking antibiotics when they felt better compared to 24.6% for the MSSA group. Furthermore, 72% of the MSSA carriers answered that they did not stop taking antibiotics when they felt better. Therefore, in this case we rejected the null hypothesis that indicate no difference among MSSA and MRSA carrier with statically significant of $p=0.0293$.

Table 4. Statistical analysis using difference of proportions between MSSA carriers and MRSA carriers for risk factor association

Risk factors	Response	MSSA N=106	MRSA N=4	p-value	X ²	z-value
Stopped taking antibiotics, when felt better	Yes	26 (24.6%)	3 (75%)	0.0293	-	2.179
	No	76 (72%)	1 (25%)			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, non-carriers: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

A component of the analysis to all twenty-two questions for the 110 MSSA *Staphylococcus* species carrier , 5 MRSA and the 565 no-carriers was performed to determine if there is any significant difference in the influencing risk factors. Sixty-nine percentage of the population that are *Staphylococcus* species carriers (MSSA) indicated working in a healthcare facility, while 100% of the MRSA carriers indicated working a the hospitals. Of the non-carrier population, 43% haven't worked in the healthcare facility compared to 12% of *Staphylococcus* species carriers, shown in Table 5a.

Another risk factor that was whether individual have stopped taking antibiotics when they felt well. Eighty percentage of the MRSA-carriers indicated that they stopped antibiotics before finishing the antibiotics course, which was, (16.8%) of the *Staphylococcus* species -carriers (MSSA) who indicated their compliance to the full antibiotics course, shown in Table 5a.

Also, a risk factor that was associated with *Staphylococcus* species and MRSA colonization is majoring in health science with a p value of 0.0347. of those colonized with *Staphylococcus* species 17.4% were health-science majors compare to 80% of those who are colonized with MRSA strain, shown in Table 5a.

Table 5a. Statistical analysis using difference of proportions between MSSA carriers, MRSA carriers, and non-carriers for risk factors association

Risk factors	Response	MSSA	MRSA	Non-carrier	p-value	X ²	z-value
Working in healthcare facility	Yes	71 (69.6)	5 (100)	393 (58.2%)	0.0666	5.4155	-
	No	34 (12)	0	282 (41.7%)			
Health majors	Yes	103(17.4%)	4 (80%)	591(87)%	0.0347	-	2.11
	No	7 (8.3%)	0	84 (12.4)			
	Did not indicate	0	1 (20%)	0			
Stopped taking antibiotics, when felt better	Yes	29 (12.9%)	4 (80%)	224 (33%)	0.0455	6.1806	-
	No	76 (16.8%)	1 (20%)	451 (66.8%)			

MSSA: Methicillin-sensitive Staphylococcus aureus, non-carriers: are other the samples that we collected in the study

Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Two knowledge based questions that were asked participants to assist their knowledge of MRSA risk factors in relation to their major. More than 14% of *Staphylococcus* species -carriers (MSSA) were not sure if MRSA kill more individuals annual in the United States than AIDS ⁸⁹, and 52.1 % of the non-carrier had the same answer. More than 70% of the non-carrier surveyed know that you can be a MRSA carrier without being sick, shown in Table 5b.

Table 5b. Statistical analysis using difference of proportions between MSSA carriers MRSA carriers, and non-carriers for risk factors knowledge

Risk factors	Response	MSSA	MRSA	Non-carrier	p-value	X ²	z-value
MRSA infection kill more people in the USA than AIDS annually	True	45 (17.3%)	1 (20)	259 (38.3%)	0.01687	10.2094	-
	False	10 (15.8%)	2 (40%)	63 (9.3%)			
	Not sure	50 (14.2%)	2 (40%)	352 (52.1%)			
You can be MRSA carrier without being sick	Yes	75 (14.7%)	4 (80%)	508 (75.4%)	0.04236	8.1839	-
	No	5 (45.4%)	0	11 (1.6%)			
	Not sure	25 (16.23%)	1 (40%)	154 (22.8%)			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, non-carriers: are other the samples that we collected in the study.

Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Table 6. Biochemical tests of positive *Staphylococcus* species carriers

<i>Staphylococcus</i> <i>species</i>	Total Samples N=110	Mannitol Salt Agar (MSA)	Gram Stain	Morphology	Catalase test	Coagulase test N=110	
						Positive	Negative
<i>Staphylococcus aureus</i>	86	+	+	cocci	+	+ (78)	- (8)
<i>Staphylococcus saprophyticus</i> <i>subsp</i>	8	+	+	Cocci	+	+ (7)	- (1)
<i>Staphylococcus warneri</i>	6	+	+	Cocci	+	+ (6)	
<i>Staphylococcus hominis</i> <i>subsp.</i>	1	+	+	Cocci	+	+ (1)	
<i>Staphylococcus pasteurii</i>	4	+	+	Cocci	+	+ (4)	
<i>Staphylococcus hyicus</i>	1	+	+	Cocci	+	+ (1)	
<i>Staphylococcus caprae</i>	1	+	+	Cocci	+	- (1)	
<i>Staphylococcus haemolyticus</i>	2	+	+	Cocci	+	+ (1)	- (1)
none	1	+	+	cocci	+	+ (1)	

An oral swab was collected from participants in the study and then plated onto Mannitol Salt Agar (MSA) media. Biochemical tests were then performed to identify *S. aureus*. 110 isolates were gram-positive, catalase-positive. From the samples, as expected the majority of *Staphylococcus* species were differentiated positively on the MSA media but not selected for *Staphylococcus aureus*, as shown in Table 6. As for the coagulase-test 99 isolates of *Staphylococcus* species were coagulase-positive and only 11 coagulase-negative.

Table 7. Identification of positive *Staphylococcus species* carriers by 16s rRNA sequencing and NCBI Blast Search

#	Samples number	Organism	Strain	% Match
1	102312km14	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
2	102312ma24	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
3	101112ab8	<i>Staphylococcus hominis subsp.</i>	strain DM 122, novobiosepticus strain GTC 1228	99%
4	101112ab15	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
5	101112ma10	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
6	101812ma10	<i>Staphylococcus saprophyticus subsp</i>	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%
7	101012ma13	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
8	101812ab9	<i>Staphylococcus saprophyticus subsp</i>	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%
9	101812ma8	<i>Staphylococcus warneri</i>	SG1, AW 25	99%
10	101812ma6	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%

#	Samples number	Organism	Strain	% Match
11	101012ma10	<i>Staphylococcus saprophyticus</i> subsp	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%
12	101112ab3	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
13	10312ms4	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
14	10312ms17	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%
15	101012ma8	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%
16	101012ab10	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%
17	101012ab9	<i>Staphylococcus warneri</i>	SG1, AW 25	99%
18	102312ma9	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%
19	101012ab12	<i>Staphylococcus saprophyticus</i> subsp	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%
20	101012ma4	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%
21	10312ms12	<i>Staphylococcus warneri</i>	SG1, AW 25	100%
22	102212ma14	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%

#	Samples number	Organism	Strain	% Match
<u>23</u>	101812ma17	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
24	102312makm12	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
25	92512ms”N”	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
26	92012ma1	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
27	92512ms25	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
28	92012ma12	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
29	92012ma4	<i>Staphylococcus warneri</i>	SG1, AW 25	100%
30	10512ab12	<i>Staphylococcus saprophyticus subsp</i>	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%
31	10312ms9	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
32	92512ms5	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
<u>33</u>	92412ma5	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%

#	Samples number	Organism	Strain	% Match
34	92512ms7	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
35	92512ms12	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
36	92012ma14	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
37	102412ma21	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
38	102412ma3	<i>Staphylococcus pasteurii</i>	ATCC51129	99%
39	102412ma13	<i>Staphylococcus warneri</i>	SG1, AW 25	99%
40	102312makm3	<i>Staphylococcus pasteurii</i>	ATCC51129	99%
41	102412ma29	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
42	102412ma20	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
43	102412ma22	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
44	102312ma26	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
45	102312jr14	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
46	102312ma18	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, MVF-7	99%

#	Samples number	Organism	Strain	% Match
47	102312makm15	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
48	102312ma17	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
49	102312jr26	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
50	102312ma6	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
51	102612ab4	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
52	102312makm24	<i>Staphylococcus warneri</i>	SG1, AW 25	99%
53	102312jr24	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
54	102412ma5	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
55	111712ma6	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
56	102312ma7	<i>Staphylococcus aureus subsp</i>	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
57	102312makm29	<i>Staphylococcus saprophyticus subsp</i>	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%

#	Samples number	Organism	Strain	% Match
58	102312ma12	<i>Staphylococcus pasteurii</i>	ATCC51129	99%
59	102212ma9	<i>Staphylococcus saprophyticus</i> subsp	bovis strain GTC 843,	91%
60	102312ma2	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
61	102312makm1	<i>Staphylococcus haemolyticus</i>	strain JCSC1435, strain SM 131	100%
62	102612ab2	<i>Staphylococcus pasteurii</i>	ATCC51129	99%
63	101812ma17	<i>Staphylococcus aureus</i> subsp	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
64	102312jr27	<i>Staphylococcus aureus</i> subsp	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
65	102312ma27	<i>Staphylococcus aureus</i> subsp	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
66	102412ma9	<i>Staphylococcus aureus</i> subsp	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
67	102312makm8	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	100%
68	102312jr1	<i>Staphylococcus aureus</i> subsp	N315, JH1, S33 R, anaerobius strain MVF-7,	99%
69	102312ma5	<i>Staphylococcus caprae</i> , <i>Staphylococcus capitis</i>	, strain ATCC 35538, strain LK 499	100%
70	102312makm27	<i>Staphylococcus aureus</i> subsp	N315, JH1, S33 R, anaerobius strain MVF-7,	99%

#	Samples number	Organism	Strain	% Match
71	102312km16	<i>Staphylococcus saprophyticus</i> subsp	saprophyticus ATCC 15305 strain, bovis strain GTC 843,	99%
72	102212ma1	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
73	102412ma16	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
74	102212ma13	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
75	111712ma13	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
76	10512ab3	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	98%
77	92512ms4	<i>Staphylococcus haemolyticus</i>	strain JCSC1435, strain SM 131	99%
78	10312ms13	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
79	92512ms16	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
80	92412ms12	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius strain MVF-7	99%
81	021913ma52	<i>Staphylococcus aureus</i> subsp.	N315, JH1, S33 R, anaerobius	99%

#	Samples number	Organism	Strain	% Match
82	012813ma5	<i>Staphylococcus aureus subsp.</i>	strain N315	94%
83	012813ma23	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
84	021913ma43	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
85	012813ma90	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
86	012813ma34	<i>Staphylococcus hyicus</i>	strain D. Sompolinsky no. 1	75%
87	021913ma42	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
88	012813ma13	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
89	012813ma87	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
90	012813ma98	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
91	012813ma91	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
92	012813ma26	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	97%
93	012813ma25	<i>Staphylococcus aureus subsp.</i>	N315, JH1,	99%

#	Samples number	Organism	Strain	% Match
94	021913ma8	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
95	012813ma67	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
96	012813ma1	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
97	012813ma31	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
98	012813ma57	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
99	012813ma22	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
100	012813ma29	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
101	012813ma101	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
102	021913ma14	<i>Staphylococcus aureus subsp.</i> <i>Aureus</i>	N315	88%
103	012813ma106	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
104	012813ma8	NONE		

#	Samples number	Organism	Strain	% Match
105	021913ma15	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
106	012813ma65	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
107	012813ma97	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
108	012813ma27	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	99%
109	012813ma10	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%
110	012813ma32	<i>Staphylococcus aureus subsp.</i>	N315, JH1, S33 R, anaerobius strain MVF-7	100%

The sequences were obtained and then blast using the NCBI database nucleotide blast search engine. There are a total of 109 isolates that we sequenced. All of the *S. aureus* isolates were Strain N315, JH1, S33 R, anaerobius strain MVF-7, with percentage match of 99% and 100%.

Table 8. Antibiotic resistance test assessments of zone inhibition of the positive *Staphylococcus* species isolates in millimeters (mm)

#	Samples number	Penicillin	Tetracycline	Erythromycin	Ciprofloxacin	Ceftriaxone	Oxacillin	Vancomycin	I.D
1	102312km14	19.5	27.5	27	28.5	30	19.5	20.5	S
2	102312ma24	24	17	13	28.5	28.5	24.5	24.5	S
3	101112ab8	39.5	31	35	34	26	28	23.5	S
4	101112ab15	23.5	33.5	32	28.5	30.5	34	21	S
5	101112ma10	34.5	31	30	34	25.5	26	23.5	S
6	101812ma10	30.5	30	0	25	22	15.5	21.5	S
7	101012ma13	21.5	29.5	31	35	35.5	24.5	23	S
8	101812ab9	21.5	32.5	0	29.5	26	21	25	S
9	101812ma8	26	31.5	32.5	34.5	29.5	22.5	25	S
10	101812ma6	18.5	19.5	21.5	25.5	12.5	0	20.5	R
11	101012ma10	19.5	19.5	19.5	19.5	19.5	19.5	19.5	S
12	101112ab3	21	21	21	21	21	21	21	S
13	10312ms4	21.5	21.5	21.5	21.5	21.5	21.5	21.5	S
14	10312ms17	44	44	44	44	44	44	44	S
15	101012ma8	25.5	25.5	25.5	25.5	25.5	25.5	25.5	S
16	101012ab10	19	19	19	19	19	19	19	S
17	101012ab9	47.5	47.5	47.5	47.5	47.5	47.5	47.5	S
18	102312ma9	19	19	19	19	19	19	19	S
19	101012ab12	23.5	23.5	23.5	23.5	23.5	23.5	23.5	S
20	101012ma4	31.5	31.5	31.5	31.5	31.5	31.5	31.5	S
21	10312ms12	21	21	21	21	21	21	21	S
22	102212ma14	43	43	43	43	43	43	43	S
23	101812ma17	ND	ND	ND	ND	ND	ND	ND	S
24	102312makm12	22.5	22.5	22.5	22.5	22.5	22.5	22.5	S
25	92512ms"N"	20.5	20.5	20.5	20.5	20.5	20.5	20.5	S
26	92012ma1	25.5	25.5	25.5	25.5	25.5	25.5	25.5	S

(Table 8. cont.)

#	Samples number	Penicillin	Tetracycline	Erythromycin	Ciprofloxacin	Ceftriaxone	Oxacillin	Vancomycin	I.D
27	92512ms25	20.5	20.5	20.5	20.5	20.5	20.5	20.5	S
28	92012ma12	36.5	36.5	36.5	36.5	36.5	36.5	36.5	S
29	92012ma4	26	26	26	26	26	26	26	S
30	10512ab12	37	37	37	37	37	37	37	S
31	10312ms9	22.5	22.5	22.5	22.5	22.5	22.5	22.5	S
32	92512ms5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	S
33	92412ma5	18	18	18	18	18	18	18	S
34	92512ms7	20.5	20.5	20.5	20.5	20.5	20.5	20.5	S
35	92512ms12	ND	ND	ND	ND	ND	ND	ND	S
36	92012ma14	25	25	25	25	25	25	25	S
37	102412ma21	18	18	18	18	18	18	18	S
38	102412ma3	25	25	25	25	25	25	25	S
39	102412ma13	19	19	19	19	19	19	19	S
40	102312makm3	39.5	39.5	39.5	39.5	39.5	39.5	39.5	S
41	102412MA29	21.5	21.5	21.5	21.5	21.5	21.5	21.5	S
42	102412ma20	21.5	21.5	21.5	21.5	21.5	21.5	21.5	S
43	102412ma22	21.5	21.5	21.5	21.5	21.5	21.5	21.5	S
44	102312ma26	24	24	24	24	24	24	24	S
45	102312jr14	24	24	24	24	24	24	24	S
46	102312ma18	16.5	16.5	16.5	16.5	16.5	16.5	16.5	S
47	102312makm15	42	42	42	42	42	42	42	S
48	102312ma17	21	21	21	21	21	21	21	S
49	102312jr26	24	24	24	24	24	24	24	S
50	102312ma6	22	22	22	22	22	22	22	S
51	102612ab4	47	47	47	47	47	47	47	S
52	102312makm24	22	22	22	22	22	22	22	S

(Table 8. cont.)

#	Samples number	Penicillin	Tetracycline	Erythromycin	Ciprofloxacin	Ceftriaxone	Oxacillin	Vancomycin	I.D
53	102312jr24	21	21	21	21	21	21	21	S
54	102412ma5	22	22	22	22	22	22	22	S
55	111712ma6	25	25	25	25	25	25	25	S
56	102312ma7	20	20	20	20	20	20	20	S
57	102312makm29	34	34	34	34	34	34	34	S
58	102312ma12	20.5	20.5	20.5	20.5	20.5	20.5	20.5	S
59	102212ma9	18.5	18.5	18.5	18.5	18.5	18.5	18.5	S
60	102312ma2	26.5	26.5	26.5	26.5	26.5	26.5	26.5	S
61	102312makm1	23	23	23	23	23	23	23	S
62	102612ab2	40	40	40	40	40	40	40	S
63	101812ma17	18.5	18.5	18.5	18.5	18.5	18.5	18.5	S
64	102312jr27	19	19	19	19	19	19	19	S
65	102312ma27	20.5	20.5	20.5	20.5	20.5	20.5	20.5	S
66	102412ma9	46	46	46	46	46	46	46	S
67	102312makm8	19.5	19.5	19.5	19.5	19.5	19.5	19.5	S
68	102312jr1	2.5	12.5	0	9	0	0	21.5	R
69	102312ma5	28	26.5	32.5	26.5	30.5	23	21	S
70	102312makm27	26	22.5	10	26	20.5	11.5	21.5	I
71	102312km16	17	13	10	26	33	16	20	S
72	102212ma1	22	31	0	30	27	22	21	S
73	102412ma16	21	1	0	32	30	23	23	S
74	102212ma13	22	30	11	25	31	22	22	S
75	111712ma13	18	13	30	25	31	17	20	S
76	10512ab3	18	11	19.5	23.5	12.5	0	21	R
77	92512ms4	18	13	30	25	31	17	20	S
78	10312ms13	ND	ND	ND	ND	ND	ND	ND	S

(Table 8. cont.)

#	Samples number	Penicillin	Tetracycline	Erythromycin	Ciprofloxacin	Ceftriaxone	Oxacillin	Vancomycin	I.D
79	92512ms16	ND	ND	ND	ND	ND	ND	ND	S
80	92412ms12	20	30	29.5	30	34	18	21	S
81	021913ma52	21	29.5	30	29.5	33	21	21	S
82	012813ma5	18.5	22	0	26.5	24.5	16.5	20.5	S
83	012813ma23	15.5	27	31	32	30.5	16.5	21	S
84	021913ma43	22	29	12	26	32.5	20	22.5	S
85	012813ma90	18.5	26	4.5	13	26	21.5	20.5	S
86	012813ma34	22	28	18.5	26	31	20.5	39.5	S
87	021913ma42	20	33.5	12.5	29.5	35.5	19.5	22.5	S
88	012813ma13	19	24.5	31.5	26.5	23.5	22	20	S
89	012813ma87	21	30	0	28	32	20	24	S
90	012813ma98	21.5	28.5	35.5	28.5	28.5	18.5	22.5	S
91	012813ma91	19.5	28	31	27.5	28.5	18.5	22	S
92	012813ma26	26.5	31	32	26.5	17.5	18.5	22.5	S
93	012813ma25	44	27.5	33.5	25	28.5	24.5	22	S
94	021913ma8	21.5	29.5	25	26.5	35	20.5	22	S
95	012813ma67	10	31.5	32.5	24	24	21.5	22.5	S
96	012813ma1	18	26	0	27	31.5	21.5	22	S
97	012813ma31	18.5	28	32.5	25	28.5	20	20.5	S
98	012813ma57	42.5	28.5	31	26.5	29	25	22.5	S
99	012813ma22	26.5	28	29.5	27	29	22.5	22.5	S
100	012813ma29	9.5	29	7.5	6	0	4	23	R
101	012813ma101	25.5	14.5	19.5	31.5	32.5	20.5	26	S
102	021913ma14	18	26.5	0.5	25	26	17.5	20.5	S
103	012813ma106	17	29.5	32.5	7	34.5	22.5	22	S
104	012813ma8	20	29	33	31.5	34	20	22	S

(Table 8. cont.)

#	Samples number	Penicillin	Tetracycline	Erythromycin	Ciprofloxacin	Ceftriaxone	Oxacillin	Vancomycin	I.D
105	021913ma15	18	31	31	25	30	17	20.5	S
106	012813ma65	23	28.5	30	31.5	32	19	22	S
107	012813ma97	21.5	33.5	30	27	34	17.5	21.5	S
108	012813ma27	18.5	28	31	30.5	26.5	20.5	21	S
109	012813ma10	18.5	27.5	6.5	27	28	20.5	21	S
110	012813ma32	43.5	30	11	26	31	23.5	21.5	S
Control	MRSA	11	27	0	25	10	9	20	R

Antibiotic susceptibility tests were performed to determine the zone in millimeters (mm) of inhibition of each antibiotic against *Staphylococcus* species. Four samples were contaminated and therefore it was difficult to re-grow them in MSA; these samples are marked no-data (ND) Antibiotic susceptibility tests were performed twice for each sample, and the averages of both times were recorded to have better mean and standard deviation. Identification of each isolates based on the resistance to oxacillin were designated by (S) sensitive to oxacillin, (I) intermediate resistant to oxacillin, and (R) resistant to oxacillin. The result in Table 8. show that 5 isolates were considered MRSA, 4 resistant and 1 intermediate. While, the rest of isolates were considered MSSA.

Table 9. Statistical analysis using t-test among MSSA and MRSA isolates

	Penicillin	Tetracycline	Erythromycin	Ciprofloxacin	Ceftriaxone	Oxacillin	Vancomycin
MEAN- MRSA	14.9	18.9	11.7	18	9.1	3.1	21.5
STD- MRSA	8.10	6.61	7.92	8.66	7.98	4.47	0.83
Mean- MSSA	23.56	25.21	22.79	25.48	26.35	22.52	23.23
STD- MSSA	9.14	8.99	11.60	8.55	8.63	8.32	8.07
t-test	0.0416	0.127	0.0384	0.061	0.0000317	0.0000012	0.63

The mean and the standard deviation for the MSSA (*Staphylococcus* species carrier) and MRSA samples of the antibiotic susceptibility tests were calculated by Microsoft Excel. A t-test was performed on these values to show that there is a significant difference among MRSA and MSSA for the penicillin, erythromycin, ceftriaxone and oxacillin, shown in Table 18. The values for the mean are recorded in millimeter for each antibiotics. In other words, the mean value of oxacillin for the MRSA isolates was 3.1 mm while the mean value for MSSA is 22.52 mm.

Therefore, the null hypothesis was rejected due statistically significant difference among MSSA and MRSA carriers.

Table 10. Antibiotic resistance of 106 *Staphylococcus* species isolates

Antimicrobials	% Of isolates Resistance	
	MSSA n=106 (15.7%)	MRSA n=4 (4.7%)
Penicillin	83	5
	3	3
Tetracycline		
Erythromycin	15	4
Ciprofloxacin	2	2
Ceftriaxone	0	4
Oxacillin	0	5
Vancomycin	0	0

The antibiotics resistance test is represented by the number of resistant isolates to each antibiotics, shown in Table 10. More than 80 isolates of the MSSA were resistant to penicillin, and all the MRSA isolates indeed resistant to penicillin as well. The total resistant to tetracycline were 6 isolates, three of them were MSSA and the other three were MRSA isolates. Five MRSA isolated were identified based on their resistant to oxacillin. Non of the isolates were resistant to vancomycin. This is important since vancomycin is the last resort to treat MRSA infections. only 4.7% (n=5) were considered MRSA due to their resistant to oxacillin. More than 80% of the isolates resistant to penicillin, shown in Figure 2b.

Table 11. Statistical analysis of risk factors associated with *Staphylococcus* species oral carriage for the tetracycline resistance group

Risk Factors	Response	Total number	p-value	X ²	z-value
Do you live with someone who had/had work in hospital?	Yes	6	0.0152	-	2.43
	No	0			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, non-carrier: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Statistical analysis using the Z-test and chi-square among all (106) MSSA

Staphylococcus species -carriers that are resistant to tetracycline for all the twenty-two risk factors. The tests imply that one case indicate statistical significant values. There are differences among those who live with someone who had/ has worked in the hospital and those who have not lived with someone who had/ has worked in healthcare facility. In this case we can reject the null hypothesis with statistical significant p-value of 0.0152 as shown in Table 11.

Table 12. Statistical analysis of risk factors associated with *Staphylococcus* species carriage for the erythromycin resistance group

Risk factors	Response	Total number	p-value	X ²	z-value
Have you ever stopped using antibiotics when felt well?	Yes	9	0.0214	-	2.301
	No	9			
	Missing	1			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, non-carrier: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Statistical analysis using the Z-test and chi-square among all (106) MSSA *Staphylococcus* species -carriers that are resistant to erythromycin for all the twenty-two risk factors. The test indicate that there is differences among those individual that have stopped taking antibiotics when they felt well and those who finish the antibiotics course as labeled. Therefore, we reject the null hypothesis, which indicate that there is no difference among these groups in this situation with a statistical significant difference with a p-value of 0.0214.

Table 13. Statistical analysis of risk factors associated with *Staphylococcus* species carriage for the ciprofloxacin resistance group

Risk factors	Response	Total number	p-value	X ²	z-value
Have you ever used antibiotics?	Yes	3	0.054	-	1.925
	No	1			

- MSSA, Methicillin-sensitive *Staphylococcus aureus*, non-carrier; are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Statistical analysis using the Z-test and chi-square among all (106) MSSA *Staphylococcus* species carriers that are resistant to ciprofloxacin for all the twenty-two risk factors. The test indicate statistical significant among individual that are treated for illness with antibiotics and those who have not. Therefore, we can reject the null hypothesis that indicates no difference among the groups with a statistical significant with a p-value of 0.054.

Table 14. Statistical analysis of risk factors associated with *Staphylococcus* species carriage for the ceftriaxone resistance group

Risk factors	Response	Total number	p-value	X ²	z-value
Have you ever stopped using antibiotics when felt well?	Yes	3	0.0322	-	2.14
	No	1			

- MSSA: Methicillin-sensitive *Staphylococcus aureus*, other: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Statistical analysis using the Z-test and chi-square among all (106) MSSA *Staphylococcus* species -carriers that are resistant to ceftriaxone for all the twenty-two risk factors. The test indicate that difference among those individual that have stopped taking antibiotics when they felt well and those who finish the antibiotics course as labeled. Therefore, we reject the null hypothesis in this situation with a statistical significant difference with a p-value of 0.0322.

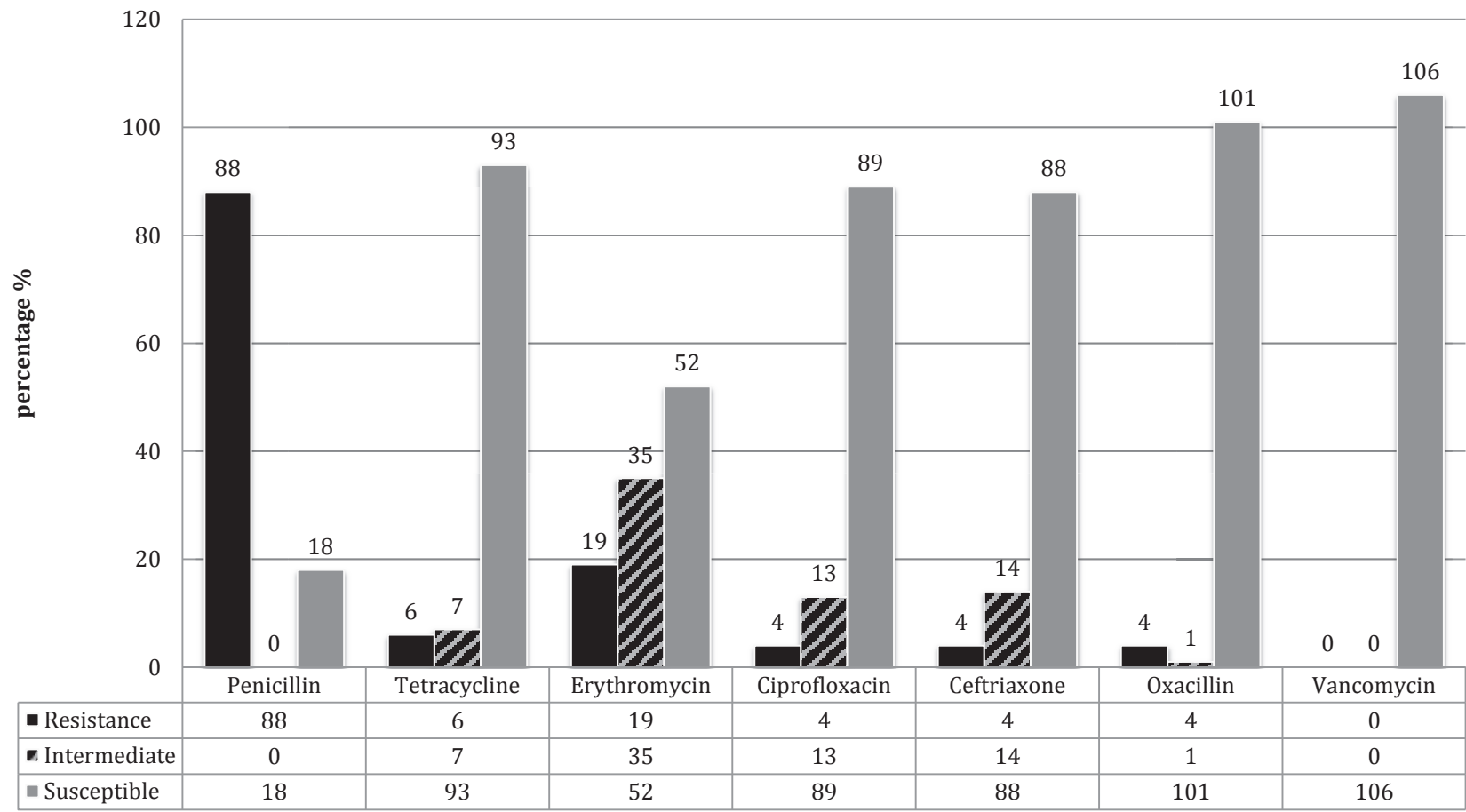
Table 15. Statistical analysis of risk factors associated with *Staphylococcus* species carriage for the oxacillin resistance group

Risk factors	Response	Total number	p-value	X ²	z-value
Have you ever stopped using antibiotics when felt well?	Yes	4	0.0077	-	2.66
	No	1			

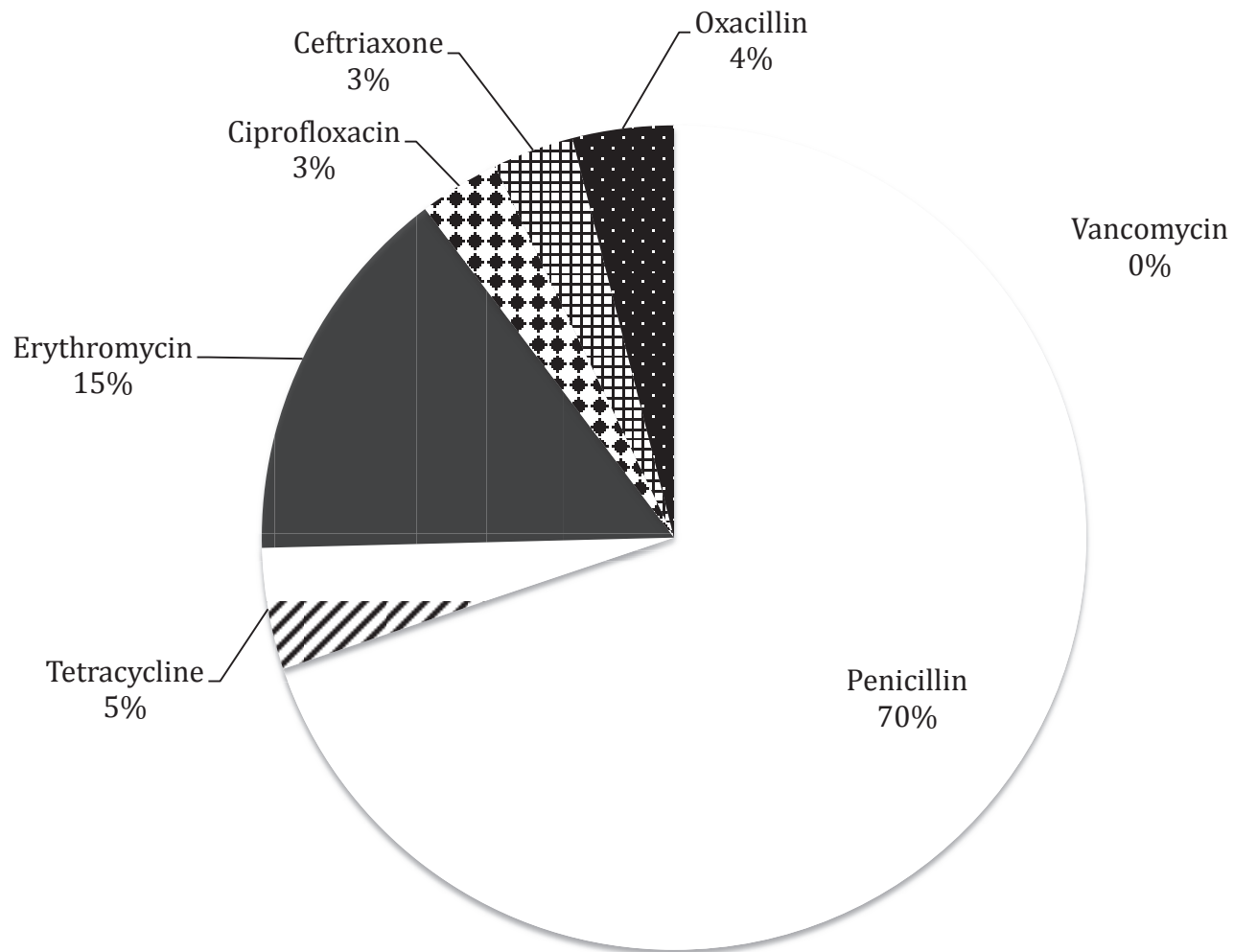
- MSSA: Methicillin-sensitive *Staphylococcus aureus*, other: are other the samples that we collected in the study.
- Z-value are performed for these risk factors with two answers only, while chi-square X² are performed for risk factors with 3 or more answers.

Statistical analysis using the Z-test and chi-square among all (106) MSSA *Staphylococcus* species -carriers that are resistant to oxacillin for all the twenty-two risk factors. The test indicate that difference among those individual that have stopped taking antibiotics when they felt well and those who finish the antibiotics course as labeled. Therefore, we reject the null hypothesis in this situation with a statistical significant difference with a p-value of 0.0077.

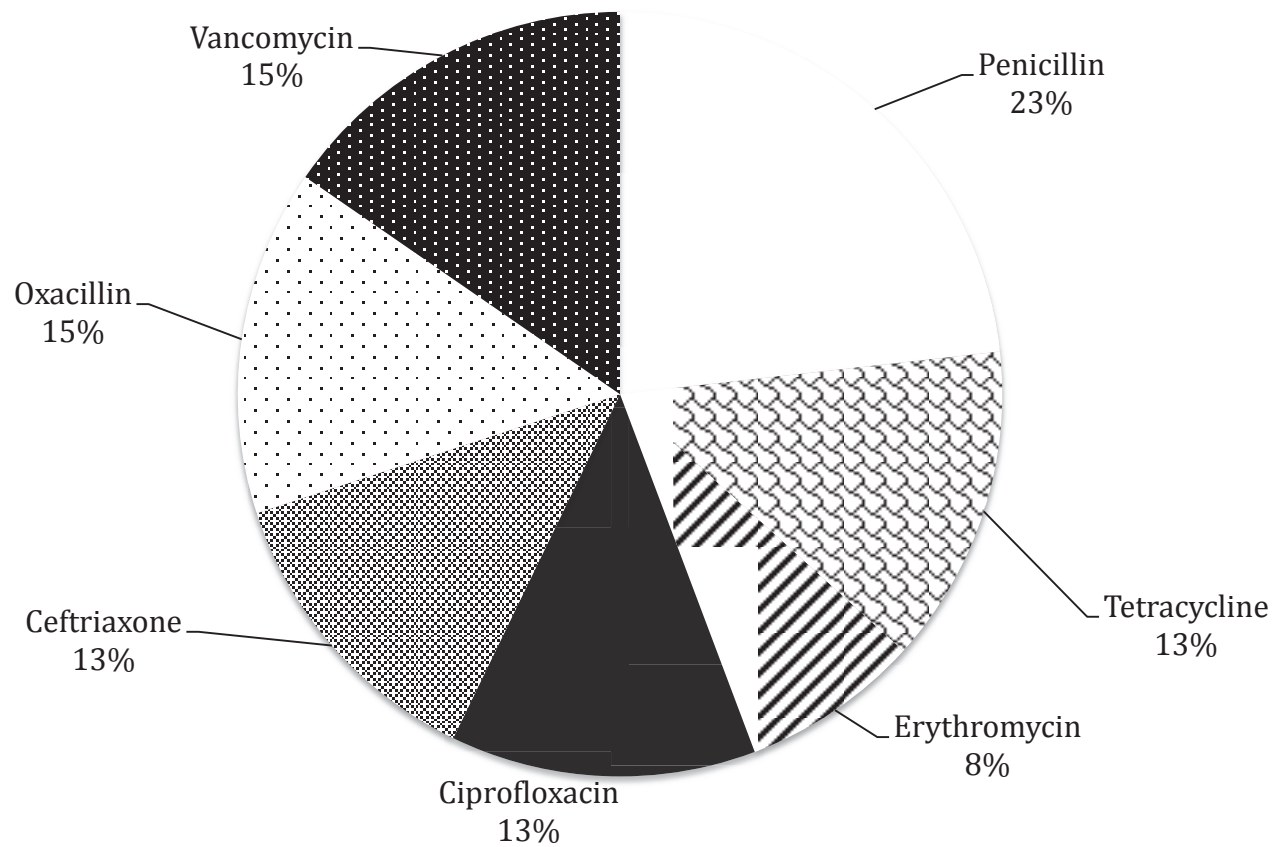
Figure 1: Antibiotic resistance of *Staphylococcus* species isolates (N=106)



Figuer 2a. Antibiotic Resistance result of 106 *Staphylococcus* species isolates



Figuer 2b. Antibiotic Susceptibility result of 106 *Staphylococcus* species isolates



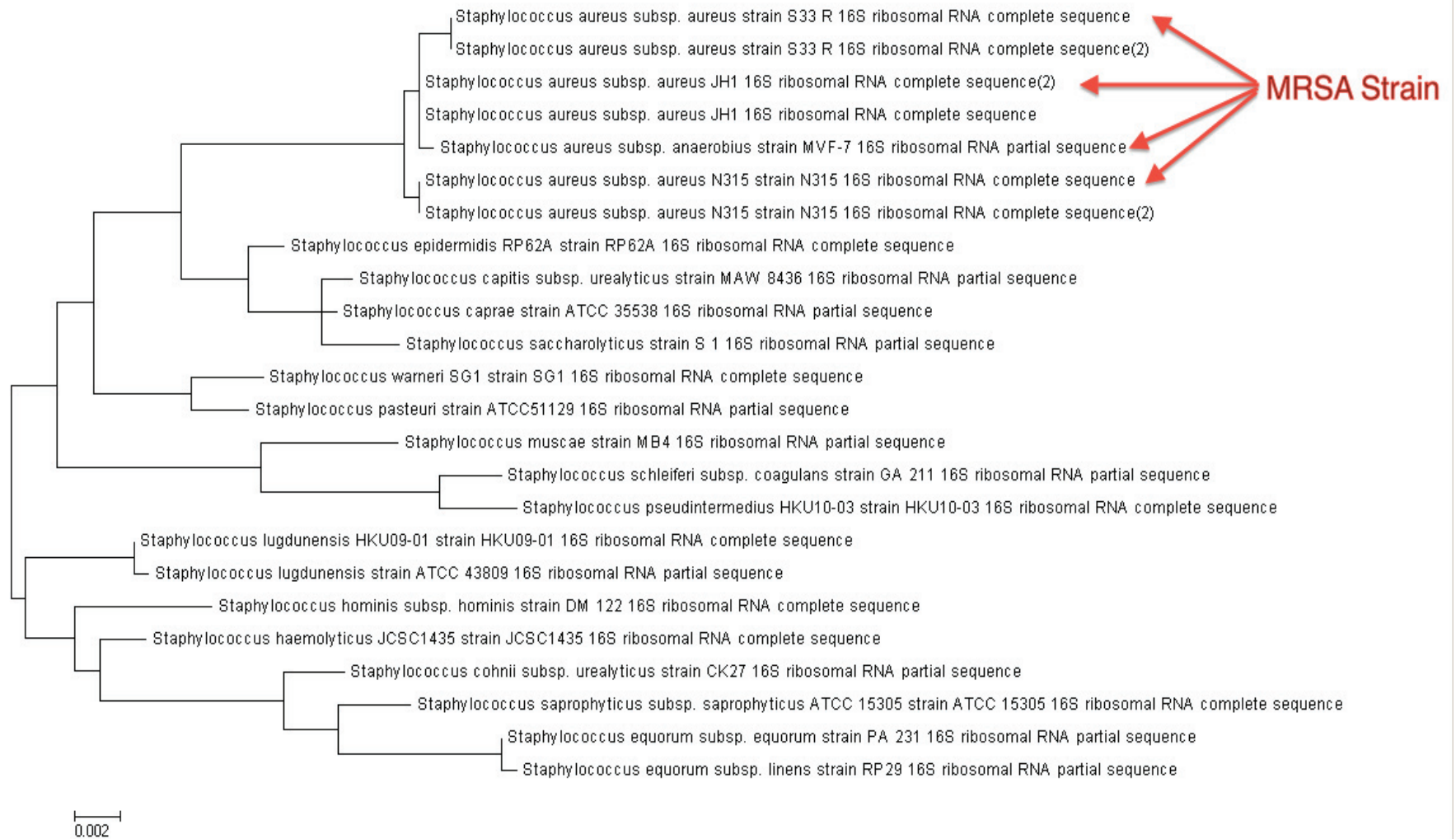


Figure 3. Molecular Phylogenetic analysis by Maximum Likelihood method of all positive *Staphylococcus* species isolates generated by NCBI and mega-blast.

Discussion

In this study we cultured 675 samples obtained from the oral cavity of healthy individuals; however, only 110 samples were able to grow on (MSA) media and display yellow, round colonies after 24 hours incubation at 35°C as shown in Table 6. It should be taken into consideration that the use of MSA as the only method to identify *S. aureus* may be insufficient, due to the ability of MSA to react and turn yellow with other organisms, thus potentially presenting a false positive for *S. aureus*.^{71, 72} Therefore, several biochemical tests were performed to aid in better identification of the pathogenic strain of *Staphylococci*.

Catalase test was the second biochemical test that is used in this setting to differentiate between *Staphylococci* species and *Streptococci* species. The catalase test utilized the presence of the catalase protein, which the *Staphylococci* makes use of in converting hydrogen peroxide to water and hydrogen.⁷³ A bubbling effect is observed upon the addition of a few drops of the hydrogen peroxide on the *S. aureus* colonies that are isolated from the (MSA). All 110 samples that grew on (MSA) media provided a positive result to the catalase test, as shown in Table 6.

Still, Gram Staining is another fundamental test that can be used to confirm the presence of the *S. aureus* colonies that was obtained from the (MSA) media. This test utilizes the presence of a thick protein layer of peptidoglycan. *S. aureus* colonies retained the crystal violet colors and appear cocci shape, and clustered under the microscopic.⁷³ This test further shows the characteristic of *S. aureus* to guarantee that the colonies obtained indeed were gram-positive bacterium of the *Staphylococci* species. All the 110 samples that were gram positive, cocci shape and clustered as show in Table 6.

To support our validation of the colonies that obtained from (MSA) media, a coagulase test were performed for each of the isolates. The principle behind this test is to examine whether a clumping formation will occur which differentiates the *S. aureus* positive from other *S. aureus* negative.⁷³ In the past, coagulase-negative *S. aureus* were considered harmless species of bacteria due to its lack of the clotting factors that convert fibrinogen to fibrin.⁷⁴ Studies from 1975 reported cases of negative-coagulase *S. aureus* to become pathogenic and cause infection in those nosocomial patients.⁷⁴ A study that conducted by the National Nosocomial Infection Surveillance between 1990-1995 has described coagulase-negative *S. aureus* as the third most common pathogen to cause infections in nosocomial patients by way of central nervous system shunt infection and urinary tract infection.⁷⁴ Additionally, a study describes 36% of bloodstream infections were associated with coagulase-negative *S. aureus*.⁷⁵ Therefore, in considering these findings, in order to yield a better test of the coagulase, a slide and a tube coagulase test were utilized. Our results show that

99 of the 110 *S.* species isolates were coagulase-positive, while only 11 coagulase-negative *S.* species were confirmed as shown in Table 6.

To further study all the samples that grow on MSA, all catalase positive and either coagulase positive or coagulase negative were sent for 16s ribosomal RNA test analysis to verify that they were *S. aureus* indeed. The DNA of each isolate was extracted separately by the use of UltraClean Microbial DNA Kit made by (MO BIO Laboratory, Inc.) and then sent to Functional Biosciences, Inc., Madison, Wisconsin. This test is being used to identify the genus and species of any type of bacteria that is or is not confirmed through biochemical testing. The objective of this test is to utilize the existing 16sRNA contained within the bacterium to verify its presence. The sequences of 16sRNA are then entered in NCBI Blast Search and identify the species identification in Table 7. only 86 samples out of the 110 isolates that were thought to be positive for the presence of *S. aureus*, were indeed *S. aureus* confirmatory. While the rest of the rest of isolates were *Staphylococci* species, shown in Table 7. This concludes a limitation of the (MSA) media in which some other species of *Staphylococci* were able to grow in the high concentration of salt, so the MSA was differentiated but not selected in this case.

The effectiveness of antibiotics against pathogenic organisms has saved the human population over the years. However, there has been an increase in resistant strains of bacteria that are not effected by several commonly used antibiotics due to the heavy use of antibiotics in therapeutics and agriculture.

Thus, the next step was taken to examine the antibiotics susceptibility in each of

the isolates. To help understand the pattern of antibiotics susceptibility among *Staphylococcus* species.

Kirby Bauer is a disk diffusion method that tests for the antibiotic sensitivity based on the zone of inhibition conducted as shown in Table 8. The zone of inhibition can be categorized as susceptible, intermediate resistance, or resistance based on the measurement value of each zone on inhibition. Reference to a standardized Kirby Bauer table provided in the methods and materials section to determine which isolates are resistant, intermediate or susceptible.

A trend of penicillin resistance was detected in the study. More than 83% of the *Staphylococcus* species isolates were penicillin resistant as shown in Table 10. Only 17% of the *Staphylococcus* species were susceptible to penicillin. This is closely similar to the result presented by the CDC which indicates that only 10% of the *Staphylococcus aureus* isolates in the United States population are susceptible to penicillin.^{32, 63}

The misuse and overuse of antibiotics allows certain selective group of bacteria to pass along a pathogenic strain to become resistant. One of the suspected reasons for the growing trend of resistant strains is the intensive use of antibiotics in the livestock and agriculture worldwide.⁷⁸ Antibiotics do not only fight infection but they also prevent infection and promote growth in animals. In 2003, The Animal Health Institute estimated that more than 10,000 tons of antibiotics are used by agriculture farms in the United States to promote growth

of livestock rather than fighting infections.⁷⁸ Penicillin and tetracycline are listed among these antibiotics that are used in both animal growth and human therapy.⁷⁸

Tetracycline is a broad-spectrum antibiotic that is capable of fighting infection caused by both gram-positive and gram-negative bacteria.⁷⁹ The mode of action tetracycline is through inhibition of the protein synthesis that is essential for bacteria.^{78, 79} Human therapeutic uses for tetracycline is common among those with acne.⁷⁹ However, the extensive use of tetracycline in both human and animal has decreased its effectiveness. A study conducted in several *Staphylococcus aureus* isolates including MRSA show the effectiveness of tetracycline to be 89.7% on the MSSA isolates, while 42.9% is shown to be effective on the MRSA isolates.⁸⁰

The study result showed a similar trend of 87% of the *Staphylococcus* species (MSSA) is susceptible to tetracycline while only 5.6% resistance is shown in Table 8, 10. On the other hand, MRSA isolates show 40% susceptibility and 60% resistance to tetracycline as presented in Table 10. The statistical analysis of the risk factors associated with *Staphylococcus* species for the Tetracycline resistant population, has shown statistical significant value of ($p=0.0152$) between individuals who live with someone who has worked in the healthcare facility as shown in Table 11. Therefore, living with someone who works in the healthcare facility is associated with colonization risk factors.

Another broad-spectrum antibiotic that is tested for its effectiveness against *S. aureus* is ceftriaxone. This antibiotic is a member of the third-generation of cephalosporins family, which is a class of the beta-lactam antibiotics that act on the synthesis of cell wall of the bacteria.⁸ Our results show that only 3.77% of the *S. aureus* species isolates are resistant to ceftriaxone, while 83% of the isolates were susceptible as shown in Table 8,10. This is similar to a surveillance study that was conducted in 2002, which shows range of the percentage of *S. aureus* to Ceftriaxone to be approximately 3%.⁸²

The statistical analysis of the risk factors associated with *Staphylococcus aureus* species for the ceftriaxone resistant population indicates statistical significance of a value ($p=0.0322$) between individuals who stopped taking antibiotics when they felt better as shown in Table 14. This antibiotic still shows effectiveness against *Staphylococcus aureus* and MRSA; however, the misuse of such antibiotics will put the entire population at risk of being infected with a more virulent strain that is multidrug resistance.

Additionally, the effectiveness of ciprofloxacin antibiotics were examined against the *Staphylococcus aureus* species isolates and MRSA. Ciprofloxacin is a member of the antibiotics family fluoroquinolone which they inhibit the cell division of the *Staphylococcus aureus*.⁸¹ Ciprofloxacin is another alternative broad-spectrum antibiotic that can clear MRSA colonization and treat infection with MSSA as well.⁸³ The results show that more than 84% of the MSSA isolates are susceptible to ciprofloxacin, while only 2 (40%) of the MRSA are resistant to ciprofloxacin compare to 1.8% of the MSSA are resistant to ciprofloxacin. A

previous study suggests that the rate of MSSA resistant to ciprofloxacin was 2% versus 55% for MRSA.⁸⁴ This study yield slightly different result than previous study, and perhaps due to the site of study, which in this study the oral cavity, while in the other study keratitis and conjunctivitis were primary examined.

The statistical analysis of the risk factors associated with *Staphylococcus* species for the ciprofloxacin resistance population indicates statistical significance with a (p-value =0.054) between individuals who were treated with antibiotics for illness as shown in Table 13.

Erythromycin is another antibiotic that we tested to further investigate the resistance pattern among the *S. aureus* isolates. It belongs to the macrolide family of antibiotics that inhabit the synthesis of certain essential protein.⁸ This antibiotic has been greatly used in the healthcare setting and therefore resistance rates have increased. This study suggested that 49% of the MSSA isolates were sensitive to erythromycin, 33% of the MSSA isolates were intermediate resistance, and only 17% resistant to it as shown in Table 8,10. On the other hand, a study investigating the risk factors of the Community Acquired MRSA in hospital concluded that 90% of their MSSA were resistant to erythromycin.⁸⁵

Staphylococcus aureus has remained resistant to other type of antibiotics; therefore, it was necessary to examine which *S. aureus* isolates are considered (MRSA) or (MSSA). Methicillin was the alterative antibiotic used for treatment against those *S. aureus* that have developed penicillin resistance. Methicillin is

another member of the beta-lactam family of antibiotics that act on the synthesis of the cell-wall as does the penicillin.^{1, 2, 3, 4, 5, 8} Methicillin-resistant *Staphylococcus aureus* (MRSA) was shown to cause infection in healthcare patients in 1961.^{3,4,5,23,24} This occurred a few years after discovering certain bacterial strains that were resistant to penicillin.^{3,5,7} Methicillin-resistant *Staphylococcus aureus* is characterized by resistance to beta- beta lactam antibiotics which include penicillin, methicillin, oxacillin.^{6,21,22,25,26,27}

Methicillin was replaced with a more stable form called oxacillin two years after its production due to reports of high kidney toxicity.^{1,2,3,25} Therefore, many of the studies that are written outside the United States may also refer to Methicillin-resistant *Staphylococcus aureus* (MRSA) as oxacillin resistant *Staphylococcus aureus* (ORSA). It was first documented that MRSA was associated with about 40% of the infections in intensive care units in the United States.²⁰ This strain of MRSA was called Healthcare- associated Methicillin-resistant *Staphylococcus Aureus* (HA-MRSA).

A surveillance system provided by the United States government, that examined cases of HA-MRSA between 1995-2003 illustrates that MRSA infections were increasing during that time. In 1995, 35.9% of hospital infections were due to MRSA while in 2003 this percentage doubled to 64.4%.²¹ This significant increase shows that infections due to MRSA are problematic in hospitals.^{21,22,25,29} In addition HA-MRSA is reported to contribute to more than 85% of the invasive infections occurring in hospitals based on the national surveillance system.^{21,32} Part of the reason that there are more MRSA infections

is due to the presence of *Staphylococcus aureus* in their nasal cavity of some people.^{12,21}

The rate of MRSA is varied based on the sampling sites and techniques used. Some studies have suggested that the MRSA colonized 1.5% of the population worldwide.^{22,34} Another study suggests that the prevalence of MRSA in the nasal cavity in healthy individuals from Texas University was 7%.^{1,35} This study concluded that 4.77% of the *Staphylococcus* species of the *aureus* strain were MRSA since it shows resistance pattern to Oxacillin as shown in Table 8, 10. This is a low MRSA percentage compared to the nasal study mainly because it studied the prevalence of MRSA in the oral cavity. Another reason that the oral site might not be prevalent with colonization as the nasal cavity may be due to certain environmental factors that *Staphylococcus aureus* prefer.

On the other hand, 95% of the *Staphylococcus* species isolates were susceptible to oxacillin; therefore, they were referred as methicillin-susceptible *Staphylococcus aureus* (MSSA) as shown in Table 10. The statistical analysis of the risk factors associated with *Staphylococcus* species for the Oxacillin resistant population, indicates statistical significant between individuals who stopped taking antibiotics when they felt better as shown in Table 15. This is an alarming concern not only to those who finish their course of antibiotics but also to the general population due to the rapid acquisition of non-pathogenic strain of *Staphylococcus* species to resistant genes.

Bacteria such as MRSA are spreading from healthcare setting to community setting at frightening rate due to the misuse of antibiotics, that results in the allowance of the non-pathogenic *S. aureus* to obtain several genes resistant to treatment and cause fatal infections. Taking antibiotics has several consequences on gut normal flora. One action of the antibiotics, is killing the normal flora that helps us in being healthy; thus, normal flora are suppressed and replaced by more resistant bacteria that could eventually cause life-threatening infections. A recent study suggested that resistant genes acquired by the normal flora in the gut exists immediately after seven days, which is the short-term use of a course of antibiotics.⁷⁶

The five positive methicillin-resistant *Staphylococcus aureus* that were confirmed by biochemical testing, 16sRNA and antibiotics susceptibility test show several risk factors. First, the gender of the individuals with MRSA strain was not an important factor to presume that infection in one gender is more prevalent than the other as the previous research project indicted. The nasal carriage from the previous study in our laboratory indicates that females are more likely to acquire MRSA than males. In this study, two of the isolates were collected from females while the other three were collected from males.

Additionally, four of the MRSA isolates were obtained from undergraduate health-science students. All five students colonized with MRSA isolates were participating in daily sports activity at the gym. Three of MRSA carriers indicated their recent or previous work in a healthcare facility. Also, two of the MRSA carriers were living with someone who working in a healthcare facility. One

MRSA carrier indicated dermatological illnesses. Remarkably, all five MRSA carriers were treated with antibiotics for an illness while four of them responded that they stopped taking antibiotics when they felt better.

Vancymycin was the last antibiotics to be tested on the collected samples. It belongs to the glycopeptide family, which inhibits the biosynthesis of cell wall of the gram-positive bacteria.⁸ All isolates that were collected were susceptible to vancymycin that is the last resort to combat MRSA infections. This show that the isolates collected did not exhibit any genes that evolve them to be resistant or intermediate to the last resort of antibiotics against MRSA infection.

The study has identified the oral carriage rate in the healthy student population to be 15.7% colonized with *Staphylococcus* species. *Staphylococcus aureus* that were susceptible to methicillin were defined as MSSA, while those resistant to methicillin were defined as MRSA. The oral carriage rate of MRSA was 4.7% in this healthy population. The main risk factors that is associated with such colonization is working in the healthcare facility, majoring in health-science and stopping taking antibiotics when feeling better.

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Appendix

Appendix 1. Biochemical testing of positive *Staphylococcus* Species carriers:

#	Samples number	Mannitol Salt Agar Y/N	Gram-Stain	Catalase test	Coagulase test
1	102312km14	Yes	Positive	Positive	Positive
2	102312ma24	Yes	Positive	Positive	Positive
3	101112ab8	Yes	Positive	Positive	Positive
4	101112ab15	Yes	Positive	Positive	Positive
5	101112ma10	Yes	Positive	Positive	Positive
6	101812ma10	Yes	Positive	Positive	Positive
7	101012ma13	Yes	Positive	Positive	Positive
8	101812ab9	Yes	Positive	Positive	Positive
9	101812ma8	Yes	Positive	Positive	Positive
10	101812ma6	Yes	Positive	Positive	Positive
11	101012ma10	Yes	Positive	Positive	Positive
12	101112ab3	Yes	Positive	Positive	Positive
13	10312ms4	Yes	Positive	Positive	Positive
14	10312ms17	Yes	Positive	Positive	Positive
15	101012ma8	Yes	Positive	Positive	Positive
16	101012ab10	Yes	Positive	Positive	Positive
17	101012ab9	Yes	Positive	Positive	Positive
18	102312ma9	Yes	Positive	Positive	Positive
19	101012ab12	Yes	Positive	Positive	Positive
20	101012ma4	Yes	Positive	Positive	Positive
21	10312ms12	Yes	Positive	Positive	Positive
22	102212ma14	Yes	Positive	Positive	Positive
23	101812ma17	Yes	Positive	Positive	Negative
24	102312makm12	Yes	Positive	Positive	Positive
25	92512ms"N"	Yes	Positive	Positive	Positive
26	92012ma1	Yes	Positive	Positive	Positive
27	92512ms25	Yes	Positive	Positive	Positive
28	92012ma12	Yes	Positive	Positive	Positive
29	92012ma4	Yes	Positive	Positive	Positive
30	10512ab12	Yes	Positive	Positive	Negative
31	10312ms9	Yes	Positive	Positive	Positive
32	92512ms5	Yes	Positive	Positive	Positive
33	92412ma5	Yes	Positive	Positive	Negative

Appendix 1. Cont.

#	Samples number	Mannitol Salt Agar Y/N	Gram-Stain	Catalase test	Coagulase test
34	92512ms7	Yes	Positive	Positive	Negative
35	92512ms12	Yes	Positive	Positive	Negative
36	92012ma14	Yes	Positive	Positive	Positive
37	102412ma21	Yes	Positive	Positive	Negative
38	102412ma3	Yes	Positive	Positive	Positive
39	102412ma13	Yes	Positive	Positive	Positive
40	102312makm3	Yes	Positive	Positive	Positive
41	102412ma29	Yes	Positive	Positive	Positive
42	102412ma20	Yes	Positive	Positive	Positive
43	102412ma22	Yes	Positive	Positive	Positive
44	102312ma26	Yes	Positive	Positive	Positive
45	102312jr14	Yes	Positive	Positive	Positive
46	102312ma18	Yes	Positive	Positive	Positive
47	102312makm15	Yes	Positive	Positive	Positive
48	102312ma17	Yes	Positive	Positive	Positive
49	102312jr26	Yes	Positive	Positive	Positive
50	102312ma6	Yes	Positive	Positive	Positive
51	102612ab4	Yes	Positive	Positive	Positive
52	102312makm24	Yes	Positive	Positive	Positive
53	102312jr24	Yes	Positive	Positive	Positive
54	102412ma5	Yes	Positive	Positive	Positive
55	111712ma6	Yes	Positive	Positive	Positive
56	102312ma7	Yes	Positive	Positive	Positive
57	102312makm29	Yes	Positive	Positive	Positive
58	102312ma12	Yes	Positive	Positive	Positive
59	102212ma9	Yes	Positive	Positive	Positive
60	102312ma2	Yes	Positive	Positive	Negative
61	102312makm1	Yes	Positive	Positive	Positive
62	102612ab2	Yes	Positive	Positive	Positive
63	101812ma17	Yes	Positive	Positive	Negative
64	102312jr27	Yes	Positive	Positive	Positive
65	102312ma27	Yes	Positive	Positive	Positive
66	102412ma9	Yes	Positive	Positive	Positive
67	102312makm8	Yes	Positive	Positive	Positive
68	102312jr1	Yes	Positive	Positive	Negative
69	102312ma5	Yes	Positive	Positive	Positive
70	102312makm27	Yes	Positive	Positive	Negative
71	102312km16	Yes	Positive	Positive	Positive
72	102212ma1	Yes	Positive	Positive	Positive
73	102412ma16	Yes	Positive	Positive	Positive

Appendix 1. Cont.

#	Samples number	Mannitol Salt Agar Y/N	Gram-Stain	Catalase test	Coagulase test
74	102212ma13	Yes	Positive	Positive	Positive
75	111712ma13	Yes	Positive	Positive	Positive
76	10512ab3	Yes	Positive	Positive	Positive
77	92512ms4	Yes	Positive	Positive	Negative
78	10312ms13	Yes	Positive	Positive	Positive
79	92512ms16	Yes	Positive	Positive	Positive
80	92412ms12	Yes	Positive	Positive	Positive
81	021913ma52	Yes	Positive	Positive	Positive
82	012813ma5	Yes	Positive	Positive	Positive
83	012813ma23	Yes	Positive	Positive	Positive
84	021913ma43	Yes	Positive	Positive	Positive
85	012813ma90	Yes	Positive	Positive	Positive
86	012813ma34	Yes	Positive	Positive	Positive
87	021913ma42	Yes	Positive	Positive	Positive
88	012813ma13	Yes	Positive	Positive	Positive
89	012813ma87	Yes	Positive	Positive	Positive
90	012813ma98	Yes	Positive	Positive	Positive
91	012813ma91	Yes	Positive	Positive	Positive
92	012813ma26	Yes	Positive	Positive	Positive
93	012813ma25	Yes	Positive	Positive	Positive
94	021913ma8	Yes	Positive	Positive	Positive
95	012813ma67	Yes	Positive	Positive	Positive
96	012813ma1	Yes	Positive	Positive	Positive
97	012813ma31	Yes	Positive	Positive	Positive
98	012813ma57	Yes	Positive	Positive	Positive
99	012813ma22	Yes	Positive	Positive	Positive
100	012813ma29	Yes	Positive	Positive	Positive
101	012813ma101	Yes	Positive	Positive	Positive
102	021913ma14	Yes	Positive	Positive	Positive
103	012813ma106	Yes	Positive	Positive	Positive
104	012813ma8	Yes	Positive	Positive	Positive
105	021913ma15	Yes	Positive	Positive	Positive
106	012813ma65	Yes	Positive	Positive	Positive
107	012813ma97	Yes	Positive	Positive	Positive
108	012813ma27	Yes	Positive	Positive	Positive
109	012813ma10	Yes	Positive	Positive	Positive
110	012813ma32	Yes	Positive	Positive	Positive
Control	MRSA	Yes	Positive	Positive	Positive

Appendix 2. Consent Form Number: 1909

Project Title: Demographics and Epidemiology of *Staphylococcus aureus* and MRSA Colonization in Healthy Individuals

Thank you for taking the time to participate in our research study. The experiment that you are participating in was approved and declared safe by Quinnipiac University Human Experimentation Committee/Institutional Review Board. The study in which you will be participating is part of a research program at Quinnipiac University under the supervision of Professor Lisa Cuchara., faculty member in the School of Health Sciences, Department of Biomedical Sciences. This is a closed research project where your identity is not maintained and your results are not linked to your identity.

Participation in this research study is voluntary. Please read the purpose and procedure thoroughly cautiously before signing below, asking us about any questions or concerns. As an individual, you have the right to refuse participation in this research study. If you choose not to participate, please inform us as soon as possible. At any time, you can withdraw from this research study, where any information or results attained will be fully discarded. All data will be collected anonymously in order to eliminate any risk of privacy invasion. No identifiable personal information will be obtained, only demographic data relating to your age, sex, educational level and relevant hobbies will be collected. **We do not anticipate any risks from participating in this study (that is, not beyond those encountered in the course of everyday life).**

Purpose of Project: The objective of this research will be to investigate the percentage of the Quinnipiac population of individuals that are (1) carriers of *Staphylococcus aureus* and (2) carriers of *Staphylococcus aureus* that contain antibiotic resistance genes. This study will examine the epidemiology of *Staphylococcus aureus* in a specific population of people as a representation of the larger population in CT and the USA. This study is aimed at determining the prevalence, frequency and virulence genes of *Staphylococcus aureus* in a selected population.

Procedure: You will be assigned a number to maintain confidentiality. You will be given a quick survey before the procedure. The procedure will be read in full detail by one of the experimenters. **The methods used in this procedure are non-invasive.** Once the procedure is fully understood and consented to, the experimenter will collect a sample from your nose or your mouth. Samples from the nose - obtain a sterile cotton-wool tipped swab and swab both the left and right anterior nares with even pressure and rotation four times around the base, just inside the nostrils. Sample from the mouth will include collecting saliva and/or swabbing your gumlines with a sterile swab. The swabs will be used to inoculate the first quadrant of a Trypticase Soy Agar and a selective and differential Mannitol Salt Agar plate. Pure colonies will then be isolated via the quadrant streak method. Once inoculated, the swabs will be disposed in an appropriate waste container. The plates will then be incubated for 24 hours at 35°C. Macro- and Microscopic observations of the Trypticase Soy Agar and selective & differential Mannitol Salt Agar plates will be used in order to identify *Staphylococcus aureus*. Samples will be then frozen and/or have DNA extracted for PCR amplification and gel electrophoresis as the methods to determine the presence or absence of antibiotic resistance genes.

By agreeing to participate in this study it is understood that I am at least 18 years of age. **I understand the purpose and procedure and I agree to participate as a subject.**

Signature _____ Date _____

Appendix 3. Survey Questions

1. Have you heard of MRSA? (y/n)
2. (T/F) MRSA infection kills more people in the United States than AIDS does.
3. What is your age?
4. Graduation Year?
5. Level of Education?
6. Are you male or female? (m/f)
7. What is your major/occupation?
8. Have you worked in a health care facility (hospital)? (y/n)
9. Do you participate in a sports team?
10. If so what sport? (no or type or sport)
11. Do you have a history of any dermatology conditions, such as acne problems? (y/n)
12. The only way to get MRSA is in a hospital (T/F)
13. You could be a MRSA carrier and not have any symptoms (T/F)
14. You can catch MRSA from casual contact with an infected person (T/F)
15. You can catch MRSA from objects (towels, sporting equipment, etc.) (T/F)
16. You can catch MRSA from a "healthy" hospital worker (T/F)
17. Have you ever been infected with MRSA? (y/n)
18. Do you know someone that has had MRSA? (y/n)
19. Have you ever been treated for an illness with antibiotics? (y/n)
20. Have you ever stopped taking antibiotics when you felt better? (y/n)

Survey questions continue on the next page

“Thanks for your help now if you wouldn't mind providing us with a quick and easy sample, it's a simple nasal swab, please step right over here”

Please Also Record

- At Time of Collection
 - sample collected?
 - if yes record include date- initials-#n, ex: 062209-CP-1, June 22, 2009-CP-first sample collected that day, if no leave blank
- After 24-48 hrs of Growth
 - Growth/No Growth
 - Color Change (yes/yellow, no/red)
 - pos/neg
- Sample Preservation
 - Stab (y/n)
 - Frozen Sample (tube numbers)

Appendix 4. Survey Results

Sample	Age	Graduation	Gender	Education	Majors
9/25/2012 01	21	2013	Female	Undergraduate	biology
9/25/2012 02	21	2013	Female	Undergraduate	biomedical sciences
9/25/2012 03	22	2012	Male	Undergraduate	biomedical sciences
9/25/2012 04	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 05	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 06	21	2013	Female	Undergraduate	physicians assistant / spanish
9/25/2012 07	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 08	22	2013	Female	Undergraduate	health science studies
9/25/2012 09	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 10	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 11	21	2013	Female	Undergraduate	biology
9/25/2012 12	21	2013	Male	Undergraduate	biomedical sciences
9/25/2012 13	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 14	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 15	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 16	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 17	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 19	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 20	20	2013	Female	Undergraduate	physicians assistant
9/25/2012 21	22	2013	Female	Undergraduate	physicians assistant
9/25/2012 22	21	2013	Male	Undergraduate	physicians assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
9/25/2012 23	20	2013	Male	Undergraduate	physicians assistant
9/25/2012 24	21	2013	Male	Undergraduate	physicians assistant
9/25/2012 25	21	2013	Male	Undergraduate	physicians assistant
9/25/2012 26	21	2013	Female	Undergraduate	health science studies
9/25/2012 27	22	2013	Female	Undergraduate	physicians assistant
9/25/2012 28	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 29	21	2012	Female	Undergraduate	health science studies
9/25/2012 30	20	2013	Female	Undergraduate	physicians assistant
9/25/2012 31	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 32	21	2013	Female	Undergraduate	physicians assistant
9/25/2012 33	21	2013	Male	Undergraduate	physicians assistant
9/24/2012 01	29	2004	Female	Undergraduate	botany and microorganisms
9/24/2012 02	27	2008	Female	grads	N/A
9/24/2012 03	30	N/A	Male	grads	biomedical sciences
9/24/2012 04	26	2012	Male	master	student
9/24/2012 05	24	2010	Female	grads	cellular and molecular biology
9/24/2012 06	26	2009	Male	grads	applied medical sciences
9/24/2012 07	8	2010	Male	grads	molecular biology
9/24/2012 08	23	2010	Male	grads	research assistant
9/24/2012 09	23	2011	Male	grads	student

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
9/24/2012 11	24	2013	Female	grads	molecular and cellular biology
9/24/2012 12	22	2014	Female	grads	molecular and cell biology
11182012MA19	20	2014	Female	Undergraduate	Physician Assistant
10182012MA20	20	2014	Male	Undergraduate	Physician Assistant
10182012MA19	20	2014	Female	Undergraduate	Physician Assistant
10182012MA18	20	2013	Female	Undergraduate	Health Science
10182012MA17	21	2013	Male	Undergraduate	Biology
10182012MA21	20	2014	Female	Undergraduate	Physician Assistant/CNA and EMT
10182012MA22	20	2014	Female	Undergraduate	Physician Assistant
10182012MA30	22	2013	Female	Undergraduate	Health Sciences
10182012MA24	21	2013	Female	Undergraduate	Health Sciences
10182012MA25	19	2014	Female	Undergraduate	Health Sciences
10182012MA23	26	2013	Female	Undergraduate	Health Sciences
10182012MA27	22	2013	Male	Undergraduate	Health Sciences
10182012MA26	19	2015	Female	Undergraduate	Health Sciences
10182012MA28	20	2014	Female	Undergraduate	Health Science
10182012MA29	22	2013	Male	Undergraduate	Health Science
10182012MA1	20	2013	Female	Undergraduate	Health Sciences
10182012MA2	20	2014	Female	Undergraduate	Health Sciences
10182012MA3	21	2013	Female	Undergraduate	Behavioral Neuroscience
10182012MA4	20	2013	Female	Undergraduate	Physical Therapy
10182012MA5	21	2013	Female	Undergraduate	Physician Assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10182012MA6	21	2013	Female	Undergraduate	Biomedical Sciences
10182012MA7	21	2013	Female	Undergraduate	Biomedical Sciences
10182012MA8	21	2013	Female	Undergraduate	Biomedical Sciences
10182012MA9	22	2013	Female	Undergraduate	Diagnostic Imaging
10182012MA10	28	2013	Male	Undergraduate	Diagnostic Imaging
10182012MA11	22	2013	Female	Undergraduate	Diagnostic Imaging
10182012MA12	21	2012	Female	Undergraduate	Health Sciences
10182012MA13	21	2014	Female	Undergraduate	Health Sciences
10182012MA14	18	2015	Female	Undergraduate	Diagnostic Imaging
10182012MA15	21	2013	Male	Undergraduate	Health Sciences
10182012MA16	21	2013	Female	Undergraduate	Health Sciences/Criminal Justice
10112012AB20	21	2013	Female	Undergraduate	Biomedical Sciences
10112012MA1	19	2016	Male	Undergraduate	Biology
10112012MA2	18	2016	Female	Undergraduate	biomedical sciences
10112012MA3	18	2016	Female	Undergraduate	Biomedical Sciences
10112012MA4	18	2016	Male	Undergraduate	Biology
10112012MA5	18	2016	Male	Undergraduate	Biology
10112012MA6	18	2016	Male	Undergraduate	Biology
10112012MA8	18	2016	Female	Undergraduate	Biochemistry
10112012MA9	18	2015	Female	Undergraduate	Biochemistry/Pre-Med
10112012MA15	19	2016	Female	Undergraduate	Biology
10112012MA11	18	2016	Female	Undergraduate	Biology
10112012MA7	19	2015	Male	Undergraduate	Biology
10112012MA10	18	2016	Male	Undergraduate	Biology
10112012MA12	18	2016	Female	Undergraduate	Biology
10112012MA13	18	2016	Female	Undergraduate	Biochemical Engineering

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10112012MA16	18	2016	Male	Undergraduate	Biology
10112012AB1	18	2016	Female	Undergraduate	Health Science
10112012AB2	20	2015	Male	Undergraduate	Undeclared
10112012AB3	19	2016	Female	Undergraduate	Health Sciences
10112012AB4	18	2016	Female	Undergraduate	Undeclared
10112012AB5	18	2016	Female	Undergraduate	Athletic Training/Sports Medicine
10112012AB6	18	2016	Male	Undergraduate	AT/Sports Medicine
10112012AB7	18	2016	Female	Undergraduate	Physician's Assistant
10112012AB8	18	2016	Female	Undergraduate	Nursing
10112012AB9	18	2016	Female	Undergraduate	Health Sciences
10112012AB10	18	2016	Female	Undergraduate	Occupational Therapy
10112012AB11	18	2016	Female	Undergraduate	Health Sciences
10112012AB12	18	2016	Female	Undergraduate	Sports Medicine
10112012AB13	18	2016	Female	Undergraduate	Athletic Training
10112012AB14	18	2017	Female	Undergraduate	Physical Therapy
10112012AB15	18	2016	Male	Undergraduate	Mechanical Engineering
10112012AB16	19	2016	Female	Undergraduate	Health Sciences
10112012AB17	19	2015	Female	Undergraduate	Health Sciences
10112012AB18	18	2016	Female	Undergraduate	Nursing
10112012AB19	18	2016	Female	Undergraduate	Occupational Therapy
10/11/2012AB20	21	2013	Female	Undergraduate	biomedical sciences
10/11/2012MA1	19	2016	Male	High School	biology
10/11/2012MA2	18	2016	Female	High School	biomedical sciences
10/11/2012MA3	18	2016	Female	Undergraduate	biomedical sciences

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/11/2012MA4	18	2016	Male	Undergraduate	biology
10/11/2012MA5	18	2016	Male	Undergraduate	biology
10/11/2012MA6	18	2016	Male	High School	biology
10/11/2012MA8	18	2016	Female	Undergraduate	biochemistry
10/11/2012MA9	18	2015	Female	Undergraduate	biochemistry/p re-med
10/11/2012MA1 5	19	2016	Female	Undergraduate	biology
10/11/2012MA1 1	18	2016	Female	Undergraduate	biology
10/11/2012MA7	19	2015	Male	Undergraduate	biology
10/11/2012MA1 0	18	2016	Male	Undergraduate	biology
10/11/2012MA1 2	18	2016	Female	Undergraduate	biology
10/11/2012MA1 3	18	2016	Female	Undergraduate	biochemical engineering
10/11/2012MA1 6	18	2016	Male	Undergraduate	biology
10/11/2012AB1	18	2016	Female	Undergraduate	health science studies
10/11/2012AB2	20	2015	Male	Undergraduate	none
10/11/2012AB3	19	2016	Female	Undergraduate	health science studies
10/11/2012AB4	18	2016	Female	Undergraduate	undecided
10/11/2012AB5	18	2016	Female	Undergraduate	athletic training/sports medicine
10/11/2012AB6	18	2016	Male	Undergraduate	athletic training/sports medicine
10/11/2012AB7	18	2016	Female	Undergraduate	physicians assistant
10/11/2012AB8	18	2016	Female	Undergraduate	nursing
10/11/2012AB9	18	2016	Female	Undergraduate	health science studies
10/11/2012AB1 0	18	2016	Female	Undergraduate	occupational therapy
10/11/2012AB1 1	18	2016	Female	Undergraduate	health science studies
10/11/2012AB1 2	18	2016	Female	Undergraduate	sports medicine

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/11/2012AB1 3	18	2016	Female	Undergraduate	athletic training
10/11/2012AB1 4	18	2016	Female	Undergraduate	physical therapy
10/11/2012AB1 5	18	2016	Female	Undergraduate	mechanical engineering
10/11/2012AB1 6	19	2016	Female	Undergraduate	health science studies
10/11/2012AB1 7	19	2015	Female	Undergraduate	health science studies
10/11/2012AB1 8	18	2016	Female	High School	nursing
10/11/2012AB1 9	18	2016	Female	Undergraduate	occupational therapy
10/3/2012 01	19	2016	Female	Undergraduate	biology
10/3/2012 03	18	2016	Female	Undergraduate	pre-med
10/3/2012 04	18	2016	Male	Undergraduate	biology
10/3/2012 05	19	2016	Male	Undergraduate	biomedical sciences
10/3/2012 06	18	2016	Male	Undergraduate	biomedical sciences
10/3/2012 07	18	2016	Female	Undergraduate	biology
10/3/2012 08	18	2016	Male	Undergraduate	biology
10/3/2012 09	18	2016	Male	Undergraduate	biology
10/3/2012 10	19	2015	Female	Undergraduate	behavioral neuroscience
10/3/2012 11	18	2016	Female	Undergraduate	biomedical sciences
10/3/2012 12	18	2016	Female	Undergraduate	biology
10/3/2012 13	18	2016	Female	Undergraduate	biomedical sciences
10/3/2012 14	18	2016	Female	Undergraduate	biology
10/3/2012 15	18	2016	Female	Undergraduate	biology
10/3/2012 16	18	2016	Female	Undergraduate	behavioral neuroscience
10/3/2012 17	18	2016	Female	Undergraduate	biology/pre- med
10/3/2012 18	19	2015	Female	Undergraduate	biology
10/10/2012 MA1	18	2016	Male	Undergraduate	biology
10/10/2012 MA2	19	2016	Female	Undergraduate	biology

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/10/2012 MA3	18	2016	Male	Undergraduate	biomedical sciences
10/10/2012 MA4	18	2016	Male	Undergraduate	biology
10/10/2012 MA5	18	2016	Female	Undergraduate	biomedical sciences
10/10/2012 MA6	18	2016	Female	Undergraduate	biology
10/10/2012 MA7	18	2016	Male	Undergraduate	behavioral neuroscience
10/10/2012 MA8	18	2016	Female	Undergraduate	biology
10/10/2012 MA9	19	2015	Male	Undergraduate	n/a
10/10/2012 MA10	18	2016	Male	High School	biology
10/10/2012 MA11	18	2016	Male	Undergraduate	biology
10/10/2012 MA12	19	2016	Female	Undergraduate	biology/pre-med
10/10/2012 MA13	18	2016	Male	Undergraduate	biochemistry
10/10/2012 AB1	18	2016	Female	Undergraduate	behavioral neuroscience
10/10/2012 AB2	18	2016	Female	Undergraduate	biology
10/10/2012 AB3	18	2016	Female	Undergraduate	biology
10/10/2012 AB4	18	2016	Male	Undergraduate	biomedical sciences
10/10/2012 AB5	19	2015	Male	Undergraduate	biology
10/10/2012 AB6	18	2016	Male	High School	biology
10/10/2012 AB7	19	2016	Male	Undergraduate	biomedical sciences
10/10/2012 AB8	18	2016	Male	Undergraduate	biochemistry
10/10/2012 AB9	18	2016	Female	Undergraduate	biology
10/10/2012 AB10	18	2016	Male	Undergraduate	biology
10/10/2012 AB11	18	2016	Female	Undergraduate	behavioral neuroscience
10/10/2012 AB12	18	2016	Male	Undergraduate	biomedical sciences
10/10/2012 AB13	18	2016	Male	Undergraduate	biomedical sciences

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/10/2012 AB14	18	2016	Female	Undergraduate	biology
10/10/2012 AB15	18	2016	Female	Undergraduate	behavioral neuroscience
10/10/2012 AB16	18	2016	Female	High School	behavioral neuroscience
10/10/2012 AB17	18	2016	Female	Undergraduate	biomedical sciences
10/10/2012 AB18	18	2016	Female	Undergraduate	biology
10/10/2012 AB19	41- 50	2006	Female	PhD	professor
10/05/2012 AB12	18	2016	Female	Undergraduate	behavioral neuroscience
10/05/2012 AB11	18	2016	Female	Undergraduate	biology
10/05/2012 AB10	18	2016	Male	High School	biology
10/05/2012 AB09	18	2016	Female	Undergraduate	behavioral neuroscience
10/05/2012 AB08	18	2016	Female	Undergraduate	biology
10/05/2012 AB07	19	2016	Female	Undergraduate	biology
10/05/2012 AB06	18	2016	Female	Undergraduate	biology
10/05/2012 AB05	18	2016	Female	Undergraduate	behavioral neuroscience
10/05/2012 AB04	18	2016	Female	Undergraduate	biology
10/05/2012 AB04	18	2016	Female	Undergraduate	biology
10/05/2012 AB03	18	2016	Male	Undergraduate	biomedical sciences
10/05/2012 AB02	19	2015	Male	Undergraduate	biomedical sciences
10/05/2012 AB01	18	2016	Female	Undergraduate	biochemistry
10/05/2012 AB16	21	2015	Female	Undergraduate	political science
10/05/2012 AB13	18	2016	Female	High School	biology

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/05/2012 AB15	18	2016	Male	Undergraduate	engineering
10/05/2012 AB17	18	2016	Female	Undergraduate	biology
10/05/2012 AB18	18	2016	Female	Undergraduate	biology
10/05/2012 AB14	19	2016	Male	Undergraduate	biology
09/26/2012 JR02	21	2013	Male	Undergraduate	biomedical sciences
09/26/2012 JR01	21	2013	Female	Undergraduate	psychology
10/18/2012 MA30	22	2013	Female	Undergraduate	health science studies
10/18/2012 MA29	22	2013	Male	Undergraduate	science
10/18/2012 MA28	20	2014	Female	Undergraduate	health science studies
10/18/2012 MA27	22	2013	Male	Undergraduate	health science studies
10/18/2012 MA26	19	2015	Female	Undergraduate	health science studies
10/18/2012 MA25	19	2014	Female	Undergraduate	health science studies
10/18/2012 MA24	21	2013	Female	Undergraduate	health science studies
10/18/2012 MA23	26	2013	Female	Undergraduate	health science studies
10/18/2012 MA22	20	2014	Female	Undergraduate	physicians assistant
10/18/2012 MA21	20	2014	Female	Undergraduate	physicians assistant
10/18/2012 MA20	20	2014	Male	Undergraduate	physicians assistant
10/18/2012 MA19	20	2014	Female	Undergraduate	physicians assistant
10/18/2012 MA18	20	2013	Female	Undergraduate	health science studies
10/18/2012 MA17	21	2013	Male	Undergraduate	biology

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/18/2012 MA16	21	2013	Female	Undergraduate	health science studies / criminal justice
10/18/2012 MA15	21	2013	Male	Undergraduate	health science studies
10/18/2012 MA14	18	2015	Female	Undergraduate	diagnostic imaging
10/18/2012 MA13	21	2014	Female	Undergraduate	health science studies
10/18/2012 MA12	21	2012	Female	Undergraduate	health science studies
10/18/2012 MA11	22	2013	Female	Undergraduate	diagnostic imaging
10/18/2012 MA10	28	2013	Male	High School	diagnostic imaging
10/18/2012 MA09	22	2013	Female	Undergraduate	diagnostic imaging
10/18/2012 MA08	21	2013	Female	Undergraduate	biomedical sciences
10/18/2012 MA07	21	2013	Female	Undergraduate	student
10/18/2012 MA06	21	2013	Female	Undergraduate	biomedical sciences
10/18/2012 MA05	21	2013	Female	Undergraduate	physicians assistant
10/18/2012 MA04	20	2013	Female	Undergraduate	physical therapy
10/18/2012 MA03	21	2013	Female	Undergraduate	behavioral neuroscience
10/18/2012 MA02	20	2014	Female	Undergraduate	health science studies
10/18/2012 MA01	20	2013	Female	Undergraduate	health science studies
10242012ma1	21	2013	Female	Undergraduate	ELMPA
10242012ma2	22	2013	Female	Undergraduate	Health Science Studies
10242012ma3	22	2013	Male	Undergraduate	Biology
10242012ma4	21	2013	Female	Undergraduate	Biology
10242012ma5	22	2013	Male	Undergraduate	Biomedical Science

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10242012ma6	20	2014	Male	Undergraduate	Biomedical Science minor in microbiology and chemistry
10242012ma7	21	2013	Female	Undergraduate	biology / education
10242012ma8	21	2013	Female	Undergraduate	PA student
10242012ma9	20	2014	Female	Undergraduate	Health Science
10242012ma10	20	2014	Female	Undergraduate	Biology
10242012ma11	20	2014	Female	Undergraduate	Biomedical Science
10242012ma12	21	2014	Female	Undergraduate	Biology
10242012ma13	20	2014	Female	Undergraduate	physician assistant
10242012ma14	20	2014	Female	Undergraduate	PA
10242012ma15	21	2014	Female	Undergraduate	biomedical science
10242012ma16	20	2014	Female	Undergraduate	health sciences
10242012ma17	20	2014	Female	Undergraduate	ELMPA CNA in nursing home health care supervisor at YMCA summer camp, peer tutor
10242012ma18	20	2014	Male	Undergraduate	biology
10242012ma19	20	2014	Female	Undergraduate	pharmacy tech / biomedical sciences
10242012ma20	20	2014	Female	Undergraduate	health science studies
10242012ma21	20	2014	Female	Undergraduate	biology
10242012ma22	20	2014	Male	Undergraduate	biology
10242012ma23	20	2014	Female	Undergraduate	biomedical science
10242012ma24	20	2014	Female	Undergraduate	entry level masters physician assistant
10242012ma25	20	2014	Female	Undergraduate	biomedical science

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10242012ma26	26	2014	Female	Undergraduate	physician assistant
10242012ma27	21	2014	Female	Undergraduate	biomedical science
10242012ma28	20	2014	Female	Undergraduate	biomedical science
10242012ma29	20	2014	Female	Undergraduate	biology
10242012ma30	20	2014	Female	Undergraduate	biology
10232012jr1	24	2012	Male	grads	student
10232012jr2	26	2013	Male	grads	lab tech
10232012jr3	8	2nd 3rd semester	Male	grads	BMS
10232012jr4	27	2013	Male	grads	biomedical sciences
10232012jr5	26	2012	Female	grads	biomedical science
10232012jr6	28	2013	Female	grads	bms
10232012jr7	27	MLS	Male	grads	MLS
10232012jr8	31-40	2013	Male	grads	environmental consultant
10232012jr9	26	2009	Male	grads	medical laboratory
10232012jr10	26	2009 - PROBABLY MEANT STARTED IN 09 GRADUATING 2013	Female	grads	STUDENT
10232012JR11	30	2006 -- PROBABLY MEANT GRADUATING IN 2010	Female	grads	MD
10232012JR12	41-50	2013	Male	grads	VETERINARIAN
10232012JR13	28	2007	Male	grads	BIOMEDICAL TECH
10232012JR14	27	2008	Male	bachelor	Medical laboratory science
10/23/2012KM1	19	2015	Female	Undergraduate	nursing

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/23/2012KM2	20	2015	Female	Undergraduate	nursing
10/23/2012KM3	18	2015	Female	Undergraduate	nursing
10/23/2012KM4	19	2015	Female	High School	nursing
10/23/2012KM5	19	2015	Female	Undergraduate	nursing
10/23/2012KM6	19	2015	Female	Undergraduate	nursing
10/23/2012KM7	19	2015	Female	Undergraduate	nursing
10/23/2012KM8	19	2015	Female	Undergraduate	nursing
10/23/2012KM9	19	2015	Female	Undergraduate	nursing
10/23/2012KM10	20	2015	Female	Undergraduate	nursing
10/23/2012KM11	18	2015	Female	Undergraduate	nursing
10/23/2012KM12	20	2015	Female	Undergraduate	nursing
10/23/2012KM13	20	2014	Female	Undergraduate	health science studies
10/23/2012KM14	20	2014	Female	Undergraduate	biology
10/23/2012KM15	20	2014	Male	Undergraduate	none
10/23/2012KM16	21	2013	Male	Undergraduate	biology
10/23/2012KM17	21	2013	Male	Undergraduate	microbiology
10/23/2012MA1	21	2013	Male	Undergraduate	health science studies
10/23/2012MA2	2	2015	Female	Undergraduate	health science studies
10/23/2012MA3	19	2015	Female	Undergraduate	nursing
10/23/2012MA4	19	2015	Female	Undergraduate	nursing
10/23/2012MA5	19	2015	Female	Undergraduate	nursing
10/23/2012MA7	19	2015	Female	Undergraduate	nursing
10/23/2012MA8	19	2015	Female	Undergraduate	nursing
10/23/2012MA9	19	2015	Female	Undergraduate	nursing
10/23/2012MA10	19	2015	Female	Undergraduate	nursing
10/23/2012MA11	20	2015	Female	Undergraduate	nursing
10/23/2012MA12	28	2014	Female	Undergraduate	health science studies
10/23/2012MA13	19	2015	Female	Undergraduate	nursing

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/23/2012MA17	18	2014	Male	Undergraduate	biomedical sciences
10/23/2012MA18	20	2014	Male	Undergraduate	biology
10/23/2012MA19	19	2014	Female	Undergraduate	health science studies
10/23/2012MA20	20	2014	Female	Undergraduate	health science studies
10/23/2012MA21	20	2014	Female	Undergraduate	physician's assistant
10/23/2012MA22	21	2013	Female	Undergraduate	physician's assistant
10/23/2012MA24	21	2013	Female	Undergraduate	behavioral neuroscience
10/23/2012MA25	20	2012	Male	Undergraduate	biology
10/23/2012MA23	21	2013	Female	Undergraduate	health science studies
10/23/2012MA26	20	2014	Male	Undergraduate	biology
10/23/2012MA27	20	2014	Male	Undergraduate	biomedical sciences
10/23/2012MA28	19	2014	Female	Undergraduate	biomedical sciences
10/23/2012MA29	19	2014	Male	Undergraduate	biomedical sciences
10/23/2012MA30	20	2013	Male	Undergraduate	pre-med
10/23/2012MA31	20	2014	Male	Undergraduate	biomedical sciences
10/23/2012MA32	20	2014	Male	Undergraduate	biomedical sciences
10/23/2012MA14	20	2013	Female	Undergraduate	microbiology
10/23/2012MA15	20	2013	Male	Undergraduate	biomedical sciences/pre-med
10/22/2012MA12	19	2016	Female	Undergraduate	undeclared science
10/22/2012MA13	18	2016	Female	Undergraduate	health science studies

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/22/2012MA11	18	2016	Female	Undergraduate	occupational therapy
10/22/2012MA3	18	2016	Female	Undergraduate	nursing
10/22/2012MA7	18	2016	Male	Undergraduate	health science studies
10/22/2012MA6	18	2016	Female	Undergraduate	physician's assistant
10/22/2012MA5	18	2015	Male	Undergraduate	physical therapy
10/22/2012MA10	18	2016	Female	Undergraduate	health science studies
10/22/2012MA9	18	2016	Female	Undergraduate	athletic training
10/22/2012MA8	18	2016	Female	Undergraduate	nursing
10/22/2012MA14	18	2016	Male	Undergraduate	health science studies
10/22/2012MA1	18	2016	Female	Undergraduate	nursing
10/22/2012MA4	18	2016	Female	Undergraduate	health science studies
10/22/2012MA2	18	2016	Female	Undergraduate	occupational therapy
10/23/2012JR15	21	2013	Female	Undergraduate	international business
10/23/2012JR16	21	2013	Female	Undergraduate	business management
10/23/2012JR17	20	2014	Male	Undergraduate	Film, video, interactive media
10/23/2012JR18	20	2014	Female	Undergraduate	legal studies
10/23/2012JR19	20	2015	Female	Undergraduate	psychology/criminal justice
10/23/2012JR20	19	2015	Female	Undergraduate	history
10/23/2012JR21	21	2013	Female	Undergraduate	sociology
10/23/2012JR22	22	2013	Female	Undergraduate	media studies
10/23/2012JR23	21	2013	Female	Undergraduate	political science/creative writing
10/23/2012JR24	21	2013	Female	Undergraduate	journalism
10/23/2012JR25	21	2013	Male	Undergraduate	psychology
10/23/2012JR26	21	2013	Female	Undergraduate	accounting
10/23/2012JR27	21	2013	Male	Undergraduate	accounting
10/23/2012JR28	21	2013	Female	Undergraduate	international business

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/23/2012JR29	20	2014	Male	Undergraduate	math
10/24/2012JR30	21	2014	Female	Undergraduate	psychology
10/23/2012MA1	19	2015	Female	Undergraduate	nursing
10/23/2012MA2	21	2013	Female	Undergraduate	health science studies
10/23/2012MA3	19	2015	Female	Undergraduate	nursing
10/23/2012MA4	19	2015	Female	Undergraduate	nursing
10/23/2012MA5	19	2015	Female	Undergraduate	nursing
10/23/2012MA6	19	2015	Female	Undergraduate	nursing
10/23/2012MA7	19	2015	Female	Undergraduate	nursing
10/23/2012MA8	19	2015	Female	Undergraduate	nursing
10/23/2012MA9	19	2015	Female	Undergraduate	nursing
10/23/2012MA10	21	2013	Female	Undergraduate	radiology/physician's assistant
10/23/2012MA11	19	2015	Female	Undergraduate	nursing
10/23/2012MA12	20	2015	Female	Undergraduate	nursing
10/23/2012MA13	20	2014	Male	Undergraduate	biology/psychology
10/23/2012MA14	30	2013	Female	N/A	health science studies
10/23/2012MA15	20	2014	Female	Undergraduate	biology
10/23/2012MA16	21	2014	Female	Undergraduate	physician's assistant
10/23/2012MA17	21	2014	Female	Undergraduate	physician's assistant
10/23/2012MA18	20	2014	Female	Undergraduate	physician's assistant
10/23/2012MA19	19	2014	Female	Undergraduate	physician's assistant
10/23/2012MA20	20	2014	Female	Undergraduate	physician's assistant
10/23/2012MA21	20	2014	Female	Undergraduate	biology
10/23/2012MA22	21	2013	Female	Undergraduate	diagnostic imaging
10/23/2012MA23	20	2014	Male	Undergraduate	N/A
10/23/2012MA24	21	2014	Female	Undergraduate	health science studies

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
10/23/2012MA26	19	2015	Female	Undergraduate	microbiology
10/23/2012MA27	20	2014	Male	Undergraduate	biomedical sciences
10/26/2012 AB8	20	2014	Male	Undergraduate	biochemistry
10/26/2012 AB11	20	2014	Male	Undergraduate	biology
10/26/2012 AB5	21	2013	Female	Undergraduate	biology
10/26/2012 AB7	21	2013	Female	Undergraduate	biology
10/26/2012 AB12	21	2013	Female	Undergraduate	athletic training
10/26/2012 AB10	20	2013	Female	Undergraduate	behavioral neuroscience
10/26/2012 AB9	21	2013	Male	Undergraduate	biology
10/26/2012 AB4	21	2013	Female	Undergraduate	biology
10/26/2012 AB3	21	2013	Female	Undergraduate	health science studies
10/26/2012 AB2	21	2013	Female	Undergraduate	chemistry
10/26/2012 AB6	19	2014	Female	Undergraduate	biomedical sciences
10/26/2012 AB1	21	2014	Male	Undergraduate	physician's assistant
11/7/2012MAA B1	31-40	1999	Male	PhD	professor
11/7/2012MAA B2	22	2013	Female	Undergraduate	pre-med
11/7/2012MAA B9	21	2013	Female	Undergraduate	biomedical sciences
11/7/2012MAA B4	21	2013	Female	Undergraduate	health science studies
11/7/2012MAA B3	20	2014	Female	Undergraduate	biology/pre-med
11/7/2012MAA B5	22	2013	Female	Undergraduate	biomedical sciences
11/7/2012MAA B6	21	2013	Female	Undergraduate	biomedical sciences
11/7/2012MAA B10	21	2013	Female	Undergraduate	biomedical sciences
11/7/2012MAA B8	21	2013	Male	Undergraduate	biology
11/7/2012MAA B7	21	2013	Male	Undergraduate	health science studies

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
11/7/2012MAA B14	20	2014	Male	Undergraduate	biochemistry
11/7/2012MAA B12	19	2014	Female	Undergraduate	behavioral neuroscience
11/7/2012MAA B11	20	2014	Male	Undergraduate	biomedical sciences
11/7/2012MAA B17	21	2013	Female	Undergraduate	biomedical sciences
11/7/2012MAA B16	23	2013	Male	Undergraduate	health science studies
11/7/2012MAA B15	22	2012	Female	Undergraduate	biology
11/7/2012MAA B13	21	2013	Female	Undergraduate	health science studies
10/26/2012JR6	18	2016	Female	Undergraduate	physical therapy
10/26/2012JR4	18	2015	Male	Undergraduate	biochemistry
10/26/2012JR7	18	2016	Female	Undergraduate	biomedical sciences
10/26/2012JR5	18	2016	Male	Undergraduate	physical therapy
10/26/2012JR8	20	2014	Female	Undergraduate	health science studies
10/26/2012JR2	18	2016	Female	Undergraduate	biomedical sciences
10/26/2012JR1	18	2016	Female	Undergraduate	health science studies
10/26/2012JR3	18	2016	Female	Undergraduate	athletic training
10/26/2012JR9	18	2016	Male	Undergraduate	health science studies
10/26/2012JR10	2	2016	Female	Undergraduate	biology
11/7/2012MAA B18	18	2016	Male	Undergraduate	undeclared liberal arts
11/7/2012MAA B19	19	2016	Male	Undergraduate	film
11/12/2012MA KM1	19	2016	Male	Undergraduate	broadcast journalism
11/12/2012MA KM3	18	2016	Female	Undergraduate	biology/pre- med
11/12/2012MA KM4	19	2016	Female	Undergraduate	marketing

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
11/12/2012MA KM5	18	2016	Male	Undergraduate	business undecided
11/12/2012MA KM6	18	2016	Female	Undergraduate	broadcast journalism
11/12/2012MA KM7	18	2016	Female	Undergraduate	broadcast journalism
11/12/2012MA KM8	19	2016	Female	Undergraduate	health science studies
11/12/2012MA KM11	18	2016	Female	Undergraduate	nursing
11/12/2012MA KM10	18	2016	Female	Undergraduate	business
11/12/2012MA KM15	18	2016	Female	Undergraduate	english
11/12/2012MA KM16	18	2016	Female	Undergraduate	occupational therapy
11/12/2012MA KM17	18	2016	Male	Undergraduate	business
11/12/2012MA KM14	18	2016	Female	Undergraduate	business
11/12/2012MA KM13	18	2016	Male	Undergraduate	finance
11/12/2012MA KM12	18	2016	Male	Undergraduate	communicatio ns
11/12/2012MA KM2	19	2016	Female	Undergraduate	biochemistry
11/12/2012MA KM9	18	2016	Male	Undergraduate	psychology
11/7/2012MAA B29	18	2016	Female	Undergraduate	business undeclared
11/7/2012MAA B27	18	2016	Female	Undergraduate	engineering undeclared
11/7/2012MAA B28	18	2016	Male	Undergraduate	health sciences undeclared
11/13/2012MA AB32	19	2016	Female	Undergraduate	biomedical sciences
31	18	2016	Female	Undergraduate	health science studies
11/7/2012MAA B30	18	2016	Female	Undergraduate	health science studies
11/7/2012MAA B26	18	2016	Female	Undergraduate	film, video, interactive

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
11/7/2012MAA B20	18	2016	Female	Undergraduate	biology
11/7/2012MAA B21	18	2016	Female	Undergraduate	legal studies
11/7/2012MAA B23	18	2016	Male	Undergraduate	business
11/7/2012MAA B22	18	2016	Male	Undergraduate	marketing
11/7/2012MAA B24	18	2016	Female	Undergraduate	IDD
11/7/2012MAA B25	18	2016	Female	Undergraduate	nursing
11/13/2012MA AB33	18	2016	Female	Undergraduate	political science
11/13/2012MA AB13	18	2016	Male	Undergraduate	athletic training
11/13/2012MA ABKM11	18	2016	Male	Undergraduate	english
11/13/2012MA ABKM9	18	2016	Female	Undergraduate	occupational therapy
11/13/2012MA ABKM16	18	2016	Female	Undergraduate	physical therapy
11/13/2012MA ABKM17	18	2016	Female	Undergraduate	biomedical sciences
11/13/2012MA ABKM14	18	2016	Male	Undergraduate	game design
11/13/2012MA ABKM10	18	2016	Male	Undergraduate	english
11/13/2012MA ABKM5	19	2016	Male	High School	engineering
11/13/2012MA ABKM12	18	2016	Male	Undergraduate	international business
11/13/2012MA ABKM6	18	2016	Female	Undergraduate	english
11/13/2012MA ABKM7	18	2016	Male	Undergraduate	history
11/13/2012MA ABKM8	18	2015	Female	Undergraduate	physical therapy/health sciences
11/13/2012MA ABKM4	18	2016	Male	Undergraduate	business
11/13/2012MA ABKM3	18	2016	Female	Undergraduate	physician's assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
11/13/2012MA ABKM1	18	2016	Female	Undergraduate	nursing
11/13/2012MA ABKM2	18	2016	Male	Undergraduate	journalism
1/28/2013 MA40	24	2010	Male	grads	physician's assistant
1/28/2013 MA1	31- 40	2014	Female	master	physician's assistant
1/28/2013 MA45	29	2006	Female	grads	physician's assistant
1/28/2013 MA43	22	2012	Female	bachelor	physician's assistant
1/28/2013 MA42	22	2012	Female	bachelor	physician's assistant
1/28/2013 MA41	24	2014	Male	grads	physician's assistant
1/28/2013 MA41	24	2014	Male	grads	physician's assistant
1/28/2013 MA56	23	2012	Male	grads	physician's assistant
1/28/2013 MA53	26	2008	Female	bachelor	student
1/28/2013 MA44	27	2008	Female	grads	physician's assistant
1/28/2013 MA52	27	2007	Male	grads	physician's assistant
1/28/2013 MA18	29	2014	Male	grads	physician's assistant
1/28/2013 MA10	27	2014	Male	grads	physician's assistant
1/28/2013 MA7	24	2010	Female	grads	physician's assistant
1/28/2013 MA8	27	2014	Female	grads	physician's assistant
1/28/2013 MA57	23	2012	Male	grads	physician's assistant
1/28/2013 MA59	23	2014	Male	Undergraduate	physician's assistant
1/28/2013 MA19	22	2012	Male	grads	physician's assistant
1/28/2013 MA13	24	2010	Female	grads	physician's assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA58	22	2014	Male	grads	physician's assistant
1/28/2013 MA20	30	2014	Male	grads	student
1/28/2013 MA11	31- 40	2014	Female	grads	physician's assistant
1/28/2013 MA51	30	2014	Male	grads	physician's assistant
1/28/2013 MA22	26	2008	Male	grads	physician's assistant
1/28/2013 MA60	23	2012	Male	grads	physician's assistant
1/28/2013 MA9	27	2014	Male	grads	physician's assistant
1/28/2013 MA48	26	2014	Male	grads	physician's assistant
1/28/2013 MA21	28	2014	Male	grads	physician's assistant
1/28/2013 MA50	25	2014	Female	grads	physician's assistant
1/28/2013 MA49	22	2014	Female	grads	student
1/28/2013 MA3	23	2014	Female	grads	physician's assistant
1/28/2013 MA2	24	2014	Female	grads	physician's assistant
1/28/2013 MA17	25	2014	Male	grads	physician's assistant
1/28/2013 MA16	22	2014	Female	grads	physician's assistant
1/28/2013 MA14	22	2012	Female	grads	physician's assistant
1/28/2013 MA15	22	2012	Female	grads	physician's assistant
1/28/2013 MA4	23	2014	Female	grads	physician's assistant
1/28/2013 MA5	22	2014	Female	grads	physician's assistant
1/28/2013 MA6	31- 40	2004	Female	grads	physician's assistant
1/28/2013 MA12	24	2010	Female	grads	physician's assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA47	27	2014	Male	grads	physician's assistant
1/28/2013 MA46	26	2008	Male	grads	physician's assistant
1/28/2013 MA54	25	2014	Female	grads	physician's assistant
1/28/2013 MA55	31-40	2014	Male	grads	occupational therapy/physician's assistant
1/28/2013 MA66	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA62	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA36	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA37	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA40	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA39	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA41	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA42	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA43	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA44	20	2014	Male	Undergraduate	health science studies
1/28/2013 MA45	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA49	20	2013	Female	Undergraduate	health science studies
1/28/2013 MA46	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA47	20	2013	Female	grads	physical therapy
1/28/2013 MA51	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA50	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA52	21	2014	Male	Undergraduate	athletic training

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA38	21	2014	Female	Undergraduate	health science studies
1/28/2013 MA48	20	2014	Male	Undergraduate	athletic training
1/28/2013 MA57	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA53	20	2014	Female	High School	athletic training/physical therapy
1/28/2013 MA63	20	2013	Female	Undergraduate	health science studies
1/28/2013 MA54	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA61	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA55	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA60	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA59	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA56	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA58	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA72	21	2013	Female	Undergraduate	physical therapy
1/28/2013 MA73	24	2013	Male	Undergraduate	physician's assistant
1/28/2013 MA109	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA74	21	2014	Male	Undergraduate	physical therapy
1/28/2013 MA77	21	2014	Male	Undergraduate	health science studies
1/28/2013 MA76	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA75	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA78	20	2014	Female	Undergraduate	health science studies
1/28/2013 MA79	20	2013	Female	Undergraduate	physical therapy

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA85	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA86	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA87	22	2013	Male	Undergraduate	health science studies
1/28/2013 MA88	20	2014	Female	Undergraduate	student
1/28/2013 MA80	21	2013	Female	Undergraduate	health science studies
1/28/2013 MA81	21	2013	Female	Undergraduate	health science studies/physical therapy
1/28/2013 MA82	21	2014	Male	Undergraduate	physical therapy
1/28/2013 MA83	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA84	20	2013	Female	Undergraduate	student
1/28/2013 MA106	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA105	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA104	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA103	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA108	21	2014	Female	Undergraduate	athletic training
1/28/2013 MA107	21	2014	Male	Undergraduate	athletic training
1/28/2013 MA101	22	2013	Male	Undergraduate	health science studies
1/28/2013 MA102	20	2013	Male	Undergraduate	physical therapy
1/28/2013 MA100	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA92	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA91	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA90	20	2014	Female	Undergraduate	physical therapy

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA89	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA93	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA95	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA94	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA96	20	2014	Male	Undergraduate	student
1/28/2013 MA97	20	2013	Male	Undergraduate	physical therapy
1/28/2013 MA98	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA99	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA71	20	2013	Male	Undergraduate	physical therapy
1/28/2013 MA70	21	2013	Male	Undergraduate	physical therapy
1/28/2013 MA69	20	2013	Male	Undergraduate	physical therapy
1/28/2013 MA68	20	2013	Female	Undergraduate	health science studies
1/28/2013 MA67	20	2013	Female	Undergraduate	health science studies
1/28/2013 MA64	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA65	20	2013	Female	Undergraduate	physical therapy
1/28/2013 MA25	20	2014	Male	Undergraduate	athletic training
1/28/2013 MA1	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA2	21	2014	Female	Undergraduate	athletic training
1/28/2013 MA6	20	2014	Female	Undergraduate	health science studies
1/28/2013 MA5	20	2014	Female	Undergraduate	athletic training/sports medicine
1/28/2013 MA4	20	2014	Female	Undergraduate	athletic training

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA3	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA18	21	2014	Female	Undergraduate	physical therapy
1/28/2013 MA9	21	2014	Male	Undergraduate	athletic training
1/28/2013 MA10	23	2014	Female	Undergraduate	athletic training
1/28/2013 MA11	20	2014	Female	Undergraduate	athletic training
1/28/2013 MA7	21	2013	Female	Undergraduate	health science studies
1/28/2013 MA19	21	2014	Female	Undergraduate	physical therapy
1/28/2013 MA8	21	2014	Female	Undergraduate	athletic training
1/28/2013 MA28	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA33	20	2014	Male	Undergraduate	athletic training
1/28/2013 MA12	20	2014	Female	Undergraduate	athletic training/physical therapy
1/28/2013 MA31	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA32	21	2014	Male	Undergraduate	physical therapy
1/28/2013 MA29	22	2013	Female	Undergraduate	health science studies
1/28/2013 MA20	20	2013	Female	Undergraduate	health science studies
1/28/2013 MA17	21	2014	Female	Undergraduate	athletic training/physical therapy
1/28/2013 MA34	21	2013	Female	Undergraduate	athletic training
1/28/2013 MA16	20	2014	Male	Undergraduate	physical therapy
1/28/2013 MA13	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA14	20	2014	Female	Undergraduate	athletic training

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
1/28/2013 MA22	21	2014	Male	Undergraduate	athletic training/sports medicine
1/28/2013 MA30	21	2014	Female	Undergraduate	physical therapy
1/28/2013 MA27	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA23	20	2014	Female	Undergraduate	health science studies
1/28/2013 MA15	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA26	20	2014	Female	Undergraduate	athletic training
1/28/2013 MA35	20	2014	Female	Undergraduate	physical therapy
1/28/2013 MA24	21	2014	Female	Undergraduate	physical therapy
1/28/2013 MA21	20	2014	Female	Undergraduate	physical therapy
2/19/2013 MA1	31- 40	2014	Female	master	physician's assisntat
2/19/2013 MA2	24	2014	Female	grads	physician's assistant
2/19/2013 MA3	23	2014	Female	grads	physician's assistant
2/19/2013 MA4	23	2014	Female	grads	physician's assistant
2/19/2013 MA5	22	2014	Female	grads	physician's assistant
2/19/2013 MA6	31- 40	2014	Female	grads	physician's assistant
2/19/2013 MA7	24	2010	Female	grads	physician's assistant
2/19/2013 MA8	27	2014	Female	grads	physician's assistant
2/19/2013 MA9	27	2014	Male	grads	physician's assistant
2/19/2013 MA10	27	2014	Male	grads	physician's assistant
2/19/2013 MA11	31- 40	2014	Female	grads	physician's assistant
2/19/2013 MA12	24	2010	Female	grads	physician's assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
2/19/2013 MA13	24	2010	Female	grads	physician's assistant
2/19/2013 MA14	22	2012	Female	grads	physician's assistant
2/19/2013 MA15	22	2012	Female	grads	physician's assistant
2/19/2013 MA16	22	2014	Female	grads	physician's assistant
2/19/2013 MA17	25	2014	Male	grads	physician's assistant
2/19/2013 MA18	29	2014	Male	grads	physician's assistant
2/19/2013 MA19	22	2012	Male	grads	physician's assistant
2/19/2013 MA20	30	2014	Male	grads	student
2/19/2013 MA21	28	2014	Male	grads	physician's assistant
2/19/2013 MA22	26	2008	Male	grads	physician's assistant
2/19/2013 MA40	24	2010	Male	grads	physician's assistant
2/19/2013 MA41	24	2014	Male	grads	physician's assistant
2/19/2013 MA42	22	2012	Female	bachelor	physician's assistant
2/19/2013 MA43	22	2012	Female	bachelor	physician's assistant
2/19/2013 MA44	27	2008	Female	grads	physician's assistant
2/19/2013 MA45	29	2006	Female	grads	physician's assistant
2/19/2013 MA46	26	2008	Male	grads	physician's assistant
2/19/2013 MA47	27	2014	Male	grads	physician's assistant
2/19/2013 MA48	26	2014	Male	grads	physician's assistant
2/19/2013 MA49	22	2014	Female	grads	student
2/19/2013 MA50	25	2014	Female	grads	physician's assistant
2/19/2013 MA51	30	2014	Male	grads	physician's assistant

Appendix 4. Cont.

Sample	Age	Graduation	Gender	Education	Majors
2/19/2013 MA52	27	2007	Male	grads	physician's assistant
2/19/2013 MA53	26	2008	Female	bachelor	student
2/19/2013 MA54	25	2014	Female	grads	physician's assistant
2/19/2013 MA55	31-40	2014	Male	grads	occupational therapy/physician's assistant
2/19/2013 MA56	23	2012	Male	grads	physician's assistant
2/19/2013 MA57	23	2012	Male	grads	physician's assistant
2/19/2013 MA58	22	2014	Male	grads	physician's assistant
2/19/2013 MA59	23	2014	Male	grads	physician's assistant
2/19/2013 MA60	23	2012	Male	grads	physician's assistant

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
9/25/2012 01	no	daily	yes	no	no	no	yes	yes
9/25/2012 02	no	sometimes	yes	no	no	no	yes	no
9/25/2012 03	no	no	yes	no	yes	no	yes	no
9/25/2012 04	in the past	regularly	yes	yes	yes	yes	yes	no
9/25/2012 05	in the past	sometimes	yes	yes	no	no	yes	no
9/25/2012 06	no	sometimes	yes	no	yes	yes	yes	no
9/25/2012 07	no	regularly	yes	no	no	no	yes	no
9/25/2012 08	no	sometimes	yes	no	no	no	yes	no
9/25/2012 09	in the past	regularly	yes	no	yes	no	yes	no
9/25/2012 10	no	regularly	yes	no	yes	no	yes	no
9/25/2012 11	in the past	regularly	yes	no	yes	no	yes	no
9/25/2012 12	no	regularly	yes	no	yes	yes	yes	yes
9/25/2012 13	no	sometimes	yes	yes	yes	no	yes	no
9/25/2012 14	yes	daily	yes	no	no	no	yes	yes
9/25/2012 15	no	regularly	yes	no	yes	no	yes	yes
9/25/2012 16	no	sometimes	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
9/25/2012 17	no	sometimes	yes	yes	yes	no	yes	no
9/25/2012 19	no	sometimes	yes	no	yes	no	yes	no
9/25/2012 20	no	no	yes	no	yes	no	yes	yes
9/25/2012 21	no	regularly	yes	yes	yes	yes	yes	no
9/25/2012 22	in the past	regularly	yes	yes	no	no	yes	no
9/25/2012 23	no	regularly	yes	yes	yes	no	yes	no
9/25/2012 24	no	regularly	yes	yes	yes	no	yes	no
9/25/2012 25	no	sometimes	yes	yes	yes	no	yes	no
9/25/2012 26	no	regularly	yes	no	no	no	yes	no
9/25/2012 27	no	regularly	yes	yes	yes	yes	yes	no
9/25/2012 28	in the past	regularly	yes	yes	no	no	yes	no
9/25/2012 29	in the past	daily	yes	yes	yes	yes	yes	no
9/25/2012 30	no	sometimes	yes	no	yes	no	yes	no
9/25/2012 31	in the past	daily	yes	yes	yes	yes	yes	no
9/25/2012 32	in the past	sometimes	yes	no	yes	no	yes	no
9/25/2012 33	no	sometimes	yes	yes	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
9/24/2012 01	no	sometimes	no	no	no	no	yes	no
9/24/2012 02	no	no	no	no	no	no	yes	yes
9/24/2012 03	no	sometimes	yes	yes	no	no	no	no
9/24/2012 04	no	regularly	yes	no	no	no	yes	yes
9/24/2012 05	in the past	regularly	yes	yes	no	yes	yes	no
9/24/2012 06	no	sometimes	yes	no	no	no	no	no
9/24/2012 07	in the past	daily	yes	no	no	no	yes	no
9/24/2012 08	in the past	daily	yes	yes	no	yes	yes	no
9/24/2012 09	no	regularly	yes	no	no	no	yes	no
9/24/2012 11	no	sometimes	yes	yes	no	no	yes	yes
9/24/2012 12	no	no	no	no	no	no	yes	no
11182012MA 19	no	sometimes	yes	yes	no	no	yes	no
10182012MA 20	no	sometimes	yes	no	no	no	yes	no
10182012MA 19	no	sometimes	yes	yes	no	no	yes	yes
10182012MA 18	no	regularly	yes	no	no	no	yes	no
10182012MA 17	no	daily	yes	yes	yes	yes	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10182012MA 21	yes	regularly	yes	no	no	no	yes	no
10182012MA 22	no	daily	yes	yes	yes	no	no	no
10182012MA 30	in the past	no	no	no	yes	no	yes	yes
10182012MA 24	in the past	regularly	yes	yes	yes	yes	yes	yes
10182012MA 25	no	sometimes	no	no	yes	yes	yes	no
10182012MA 23	no	no	yes	yes	no	no	yes	no
10182012MA 27	no	daily	yes	no	no	no	yes	yes
10182012MA 26	in the past	regularly	no	no	no	no	yes	yes
10182012MA 28	no	sometimes	no	no	no	yes	yes	no
10182012MA 29	no	daily	yes	yes	no	yes	yes	yes
10182012MA 1	no	regularly	yes	no	yes	no	yes	yes
10182012MA 2	in the past	daily	no	no	no	no	yes	no
10182012MA 3	no	regularly	no	no	no	yes	yes	no
10182012MA 4	no	sometimes	no	no	yes	no	yes	no
10182012MA 5	no	daily	yes	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10182012MA6	no	sometimes	no	no	no	yes	yes	no
10182012MA7	no	regularly	no	no	no	no	yes	no
10182012MA8	no	sometimes	yes	no	yes	yes	yes	no
10182012MA9	no	sometimes	yes	yes	yes	no	yes	no
10182012MA10	no	sometimes	yes	yes	no	no	yes	yes
10182012MA11	no	no	yes	yes	no	no	yes	no
10182012MA12	no	regularly	yes	no	yes	no	yes	no
10182012MA13	no	sometimes	yes	no	yes	no	no	no
10182012MA14	no	daily	no	no	yes	no	yes	yes
10182012MA15	no	sometimes	no	no	no	no	yes	yes
10182012MA16	in the past	no	no	no	no	no	yes	no
10112012AB20	in the past	regularly	no	no	yes	no	yes	no
10112012MA1	in the past	sometimes	yes	no	yes	no	yes	no
10112012MA2	no	sometimes	no	no	no	no	yes	yes
10112012MA3	no	sometimes	yes	no	yes	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10112012MA4	in the past	daily	no	no	no	yes	yes	no
10112012MA5	in the past	regularly	no	no	no	yes	yes	yes
10112012MA6	no	daily	yes	no	no	no	yes	yes
10112012MA8	in the past	regularly	yes	no	no	no	yes	yes
10112012MA9	in the past	regularly	yes	yes	yes	yes	yes	yes
10112012MA15	no	sometimes	no	no	yes	no	no	no
10112012MA11	no	no	no	no	no	yes	no	no
10112012MA7	no	daily	yes	yes	no	no	yes	no
10112012MA10	in the past	daily	yes	no	yes	no	yes	yes
10112012MA12	in the past	sometimes	no	no	no	yes	yes	yes
10112012MA13	in the past	daily	yes	no	yes	no	yes	yes
10112012MA16	in the past	sometimes	no	no	no	no	yes	yes
10112012AB1	in the past	sometimes	no	no	no	no	yes	yes
10112012AB2	no	daily	no	no	yes	no	yes	no
10112012AB3	no	sometimes	no	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10112012AB 4	no	daily	yes	no	yes	no	yes	yes
10112012AB 5	no	regularly	yes	no	no	no	yes	yes
10112012AB 6	in the past	daily	no	no	yes	yes	no	no
10112012AB 7	yes	regularly	yes	no	no	no	yes	no
10112012AB 8	in the past	sometimes	yes	no	yes	no	yes	no
10112012AB 9	in the past	sometimes	yes	no	no	no	yes	yes
10112012AB 10	no	regularly	no	no	no	no	yes	yes
10112012AB 11	in the past	sometimes	no	no	yes	no	yes	no
10112012AB 12	no	sometimes	no	no	no	no	yes	no
10112012AB 13	yes	regularly	no	no	no	no	yes	yes
10112012AB 14	in the past	no	no	no	no	no	yes	no
10112012AB 15	yes	regularly	no	no	no	no	yes	no
10112012AB 16	no	regularly	yes	no	yes	no	yes	yes
10112012AB 17	no	sometimes	no	no	no	no	yes	no
10112012AB 18	no	sometimes	no	no	no	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10112012AB19	no	regularly	no	no	no	no	yes	no
10/11/2012AB20	in the past	regularly	no	no	yes	no	yes	no
10/11/2012MA1	in the past	sometimes	yes	no	yes	no	yes	no
10/11/2012MA2	no	sometimes	no	no	no	no	yes	yes
10/11/2012MA3	no	sometimes	yes	no	yes	no	yes	yes
10/11/2012MA4	in the past	daily	no	no	no	yes	yes	no
10/11/2012MA5	in the past	regularly	no	no	no	no	yes	yes
10/11/2012MA6	no	daily	yes	no	no	yes	yes	yes
10/11/2012MA8	in the past	regularly	yes	no	no	no	yes	yes
10/11/2012MA9	in the past	regularly	yes	yes	yes	yes	yes	yes
10/11/2012MA15	no	sometimes	no	no	yes	no	no	no
10/11/2012MA11	no	no	no	no	no	yes	no	no
10/11/2012MA7	no	daily	yes	yes	no	no	yes	no
10/11/2012MA10	in the past	daily	yes	no	yes	no	yes	yes
10/11/2012MA12	in the past	no	no	no	no	yes	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/11/2012M A13	in the past	daily	yes	no	yes	no	yes	yes
10/11/2012M A16	in the past	sometimes	no	no	no	no	yes	no
10/11/2012A B1	in the past	sometimes	no	no	no	no	yes	yes
10/11/2012A B2	no	daily	no	no	yes	no	yes	no
10/11/2012A B3	no	sometimes	no	no	yes	no	yes	no
10/11/2012A B4	no	daily	yes	no	yes	no	yes	yes
10/11/2012A B5	no	regularly	yes	no	no	no	yes	yes
10/11/2012A B6	in the past	daily	no	no	yes	yes	no	no
10/11/2012A B7	yes	regularly	yes	no	no	no	yes	no
10/11/2012A B8	in the past	sometimes	yes	no	yes	no	yes	no
10/11/2012A B9	in the past	sometimes	yes	no	no	no	yes	yes
10/11/2012A B10	no	regularly	no	no	no	no	yes	yes
10/11/2012A B11	in the past	regularly	no	no	yes	no	yes	no
10/11/2012A B12	no	sometimes	no	no	no	no	yes	no
10/11/2012A B13	yes	regularly	no	no	no	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/11/2012A B14	in the past	no	no	no	no	no	yes	no
10/11/2012A B15	yes	regularly	no	no	no	no	yes	no
10/11/2012A B16	no	regularly	yes	no	yes	no	yes	yes
10/11/2012A B17	no	sometimes	no	no	no	no	yes	no
10/11/2012A B18	no	sometimes	no	no	no	no	yes	yes
10/11/2012A B19	no	regularly	no	no	no	no	yes	no
10/3/2012 01	no	regularly	no	no	yes	no	yes	no
10/3/2012 03	no	no	yes	no	no	no	yes	yes
10/3/2012 04	in the past	sometimes	no	no	yes	yes	yes	no
10/3/2012 05	no	sometimes	no	no	no	no	yes	no
10/3/2012 06	in the past	sometimes	yes	no	no	no	yes	no
10/3/2012 07	in the past	sometimes	no	no	no	no	yes	yes
10/3/2012 08	in the past	sometimes	no	no	no	no	yes	no
10/3/2012 09	no	no	yes	no	no	no	yes	no
10/3/2012 10	no	regularly	no	no	no	no	yes	yes
10/3/2012 11	yes	regularly	no	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/3/2012 12	no	sometimes	no	no	yes	no	yes	no
10/3/2012 13	yes	sometimes	no	no	no	no	yes	no
10/3/2012 14	no	regularly	yes	yes	yes	no	yes	no
10/3/2012 15	in the past	regularly	yes	no	yes	no	yes	no
10/3/2012 16	yes	daily	no	no	yes	no	yes	no
10/3/2012 17	no	sometimes	yes	yes	no	no	yes	no
10/3/2012 18	no	sometimes	no	no	no	no	yes	yes
10/10/2012 MA1	in the past	regularly	no	no	yes	yes	yes	no
10/10/2012 MA2	yes	sometimes	no	no	no	no	yes	no
10/10/2012 MA3	in the past	no	no	no	no	no	yes	no
10/10/2012 MA4	in the past	daily	no	no	no	no	yes	no
10/10/2012 MA5	in the past	regularly	yes	no	no	no	yes	yes
10/10/2012 MA6	in the past	sometimes	yes	yes	no	no	yes	yes
10/10/2012 MA7	no	sometimes	no	no	no	no	yes	yes
10/10/2012 MA8	yes	regularly	yes	no	no	no	yes	yes
10/10/2012 MA9	in the past	daily	yes	no	no	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/10/2012 MA10	in the past	sometimes	no	no	yes	no	yes	no
10/10/2012 MA11	in the past	regularly	no	no	no	no	yes	yes
10/10/2012 MA12	no	sometimes	yes	no	yes	yes	no	no
10/10/2012 MA13	no	regularly	no	no	yes	no	yes	no
10/10/2012 AB1	in the past	sometimes	no	no	no	yes	yes	yes
10/10/2012 AB2	no	sometimes	no	no	yes	no	yes	yes
10/10/2012 AB3	in the past	sometimes	no	no	no	no	yes	no
10/10/2012 AB4	no	no	no	no	no	no	no	no
10/10/2012 AB5	no	sometimes	no	no	yes	no	yes	no
10/10/2012 AB6	no	sometimes	no	no	no	no	yes	no
10/10/2012 AB7	no	sometimes	yes	no	no	no	yes	no
10/10/2012 AB8	in the past	sometimes	no	no	no	no	yes	yes
10/10/2012 AB9	in the past	sometimes	no	no	no	no	yes	no
10/10/2012 AB10	in the past	no	no	no	no	no	yes	no
10/10/2012 AB11	yes	regularly	no	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/10/2012 AB12	in the past	no	no	no	no	no	yes	no
10/10/2012 AB13	yes	sometimes	no	no	no	no	yes	no
10/10/2012 AB14	in the past	sometimes	yes	no	no	no	yes	yes
10/10/2012 AB15	in the past	sometimes	no	no	no	yes	yes	yes
10/10/2012 AB16	no	no	no	no	no	yes	yes	no
10/10/2012 AB17	no	regularly	no	no	yes	no	yes	no
10/10/2012 AB18	in the past	regularly	yes	yes	yes	no	yes	no
10/10/2012 AB19	no	no	yes	no	no	no	yes	no
10/05/2012 AB12	in the past	regularly	no	no	yes	no	yes	no
10/05/2012 AB11	in the past	regularly	yes	no	no	no	yes	no
10/05/2012 AB10	in the past	regularly	no	no	yes	yes	yes	yes
10/05/2012 AB09	in the past	daily	no	no	no	no	yes	no
10/05/2012 AB08	in the past	regularly	yes	yes	no	no	yes	no
10/05/2012 AB07	in the past	regularly	yes	no	no	no	yes	no
10/05/2012 AB06	no	regularly	no	yes	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/05/2012 AB05	in the past	no	no	no	no	no	yes	yes
10/05/2012 AB04	no	sometimes	yes	no	no	no	yes	no
10/05/2012 AB04	no	sometimes	yes	no	no	no	yes	no
10/05/2012 AB03	no	daily	no	no	yes	no	yes	yes
10/05/2012 AB02	no	daily	no	no	no	no	yes	yes
10/05/2012 AB01	no	sometimes	no	no	no	yes	yes	yes
10/05/2012 AB16	yes	sometimes	yes	yes	no	yes	yes	yes
10/05/2012 AB13	yes	daily	no	no	no	yes	no	no
10/05/2012 AB15	in the past	sometimes	yes	no	no	no	yes	no
10/05/2012 AB17	no	sometimes	yes	yes	yes	no	yes	no
10/05/2012 AB18	yes	daily	no	no	no	no	yes	yes
10/05/2012 AB14	in the past	daily	no	no	no	no	yes	yes
09/26/2012 JR02	no	daily	yes	no	no	no	yes	no
09/26/2012 JR01	no	sometimes	no	no	yes	yes	yes	yes
10/18/2012 MA30	in the past	no	no	no	yes	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/18/2012 MA29	no	daily	yes	yes	no	yes	yes	yes
10/18/2012 MA28	no	sometimes	no	no	no	yes	yes	no
10/18/2012 MA27	no	daily	yes	no	no	no	yes	yes
10/18/2012 MA26	in the past	regularly	no	no	no	no	yes	yes
10/18/2012 MA25	no	sometimes	no	no	yes	yes	yes	no
10/18/2012 MA24	in the past	regularly	yes	yes	yes	yes	yes	yes
10/18/2012 MA23	no	no	yes	yes	no	no	yes	no
10/18/2012 MA22	no	daily	yes	yes	yes	no	no	no
10/18/2012 MA21	yes	regularly	yes	no	no	no	yes	no
10/18/2012 MA20	no	sometimes	yes	no	no	no	yes	no
10/18/2012 MA19	no	sometimes	yes	yes	no	no	yes	no
10/18/2012 MA18	no	regularly	yes	no	no	no	yes	no
10/18/2012 MA17	no	daily	yes	yes	yes	yes	yes	no
10/18/2012 MA16	in the past	no	no	no	no	no	yes	no
10/18/2012 MA15	no	sometimes	no	no	no	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/18/2012 MA14	no	daily	no	no	yes	no	yes	yes
10/18/2012 MA13	no	sometimes	yes	no	yes	no	no	no
10/18/2012 MA12	no	regularly	yes	no	yes	no	yes	no
10/18/2012 MA11	no	no	yes	yes	no	no	yes	no
10/18/2012 MA10	no	sometimes	yes	yes	no	no	yes	yes
10/18/2012 MA09	no	sometimes	yes	yes	yes	no	yes	no
10/18/2012 MA08	no	sometimes	yes	no	yes	yes	yes	no
10/18/2012 MA07	no	no	no	no	no	no	yes	no
10/18/2012 MA06	no	sometimes	no	no	no	yes	yes	no
10/18/2012 MA05	no	daily	yes	no	no	no	yes	no
10/18/2012 MA04	no	sometimes	no	no	yes	no	yes	no
10/18/2012 MA03	no	regularly	no	no	no	yes	yes	no
10/18/2012 MA02	in the past	daily	no	no	no	no	yes	no
10/18/2012 MA01	no	regularly	yes	no	yes	no	yes	yes
10242012ma1	no	sometimes	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10242012ma2	yes	regularly	yes	no	yes	no	yes	no
10242012ma3	in the past	regularly	no	no	no	yes	yes	no
10242012ma4	no	sometimes	yes	no	yes	no	yes	yes
10242012ma5	in the past	sometimes	yes	yes	yes	no	yes	no
10242012ma6	in the past	regularly	yes	no	no	yes	yes	no
10242012ma7	no	daily	no	no	no	no	yes	no
10242012ma8	in the past	daily	yes	yes	yes	no	yes	yes
10242012ma9	no	no	yes	no	no	yes	yes	no
10242012ma10	in the past	regularly	yes	no	yes	no	yes	no
10242012ma11	no	regularly	yes	yes	yes	no	yes	no
10242012ma12	in the past	regularly	yes	no	yes	no	yes	yes
10242012ma13	no	sometimes	yes	yes	yes	no	yes	no
10242012ma14	in the past	sometimes	yes	yes	no	no	yes	no
10242012ma15	no	daily	no	no	yes	yes	yes	no
10242012ma16	no	regularly	yes	yes	yes	no	yes	yes
10242012ma17	in the past	regularly	yes	yes	yes	yes	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10242012ma18	no	sometimes	yes	no	no	no	yes	yes
10242012ma19	no	no	yes	no	no	no	yes	yes
10242012ma20	in the past	daily	yes	no	no	no	yes	no
10242012ma21	in the past	sometimes	yes	no	yes	yes	yes	no
10242012ma22	no	sometimes	no	no	yes	no	yes	no
10242012ma23	no	daily	yes	yes	yes	no	yes	yes
10242012ma24	no	sometimes	yes	no	yes	yes	yes	no
10242012ma25	no	sometimes	no	no	yes	no	yes	no
10242012ma26	no	regularly	yes	no	no	no	yes	no
10242012ma27	in the past	sometimes	no	no	yes	no	yes	yes
10242012ma28	no	sometimes	no	no	yes	no	yes	yes
10242012ma29	no	regularly	yes	yes	yes	yes	yes	yes
10242012ma30	no	sometimes	no	no	no	yes	yes	yes
10232012jr1	no	regularly	yes	no	yes	no	yes	yes
10232012jr2	no	sometimes	yes	no	yes	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10232012jr3	no	regularly	no	no	no	no	yes	yes
10232012jr4	no	sometimes	yes	no	yes	no	yes	yes
10232012jr5	no	no	yes	no	yes	no	yes	yes
10232012jr6	no	no	no	no	no	yes	no	no
10232012jr7	no	regularly	yes	yes	no	no	yes	yes
10232012jr8	in the past	sometimes	no	no	no	yes	yes	no
10232012jr9	yes	sometimes	yes	no	yes	no	yes	yes
10232012jr10	no	no	no	no	no	no	yes	no
10232012JR11	no	no	yes	no	no	yes	yes	yes
10232012JR12	no	no	yes	no	yes	no	yes	no
10232012JR13	no	no	yes	no	no	no	yes	yes
10232012JR14	no	no	yes	no	no	no	yes	yes
10/23/2012KM1	in the past	sometimes	yes	no	yes	no	yes	yes
10/23/2012KM2	no	sometimes	no	no	yes	no	yes	yes
10/23/2012KM3	yes	daily	no	no	no	no	yes	no
10/23/2012KM4	in the past	sometimes	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/23/2012K M5	no	regularly	yes	yes	no	no	yes	no
10/23/2012K M6	no	no	no	no	yes	yes	yes	no
10/23/2012K M7	in the past	sometimes	yes	no	no	no	yes	yes
10/23/2012K M8	in the past	regularly	no	no	yes	no	yes	no
10/23/2012K M9	in the past	daily	no	no	yes	no	yes	yes
10/23/2012K M10	no	regularly	yes	no	no	no	yes	no
10/23/2012K M11	in the past	daily	yes	no	yes	no	yes	no
10/23/2012K M12	no	sometimes	no	no	no	no	yes	no
10/23/2012K M13	yes	daily	no	no	yes	no	yes	yes
10/23/2012K M14	no	regularly	no	no	yes	yes	yes	no
10/23/2012K M15	no	daily	no	no	yes	no	yes	no
10/23/2012K M16	no	sometimes	no	no	yes	no	yes	no
10/23/2012K M17	no	no	no	no	no	yes	yes	no
10/23/2012M A1	yes	daily	yes	no	yes	no	yes	no
10/23/2012M A2	in the past	sometimes	no	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/23/2012M A3	no	sometimes	no	no	yes	no	yes	no
10/23/2012M A4	no	regularly	yes	no	no	no	yes	no
10/23/2012M A5	no	sometimes	no	no	yes	no	yes	no
10/23/2012M A7	no	sometimes	no	no	no	no	yes	no
10/23/2012M A8	in the past	sometimes	no	no	no	no	yes	yes
10/23/2012M A9	no	sometimes	no	no	no	yes	yes	no
10/23/2012M A10	no	sometimes	yes	no	yes	no	yes	no
10/23/2012M A11	in the past	daily	no	no	yes	no	yes	no
10/23/2012M A12	no	sometimes	yes	no	yes	no	yes	yes
10/23/2012M A13	in the past	daily	no	no	yes	no	yes	no
10/23/2012M A17	no	no	no	no	no	no	yes	yes
10/23/2012M A18	no	no	yes	no	no	no	yes	no
10/23/2012M A19	in the past	daily	yes	yes	yes	no	yes	no
10/23/2012M A20	no	sometimes	no	no	yes	yes	yes	no
10/23/2012M A21	no	sometimes	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/23/2012M A22	in the past	daily	yes	yes	yes	yes	yes	no
10/23/2012M A24	in the past	regularly	yes	no	yes	no	yes	no
10/23/2012M A25	no	regularly	no	no	yes	no	yes	no
10/23/2012M A23	no	no	yes	yes	yes	no	yes	no
10/23/2012M A26	no	sometimes	yes	no	no	no	yes	no
10/23/2012M A27	no	daily	yes	yes	yes	no	yes	yes
10/23/2012M A28	no	no	no	no	no	yes	yes	no
10/23/2012M A29	no	regularly	yes	yes	no	no	yes	yes
10/23/2012M A30	in the past	sometimes	yes	yes	yes	no	yes	yes
10/23/2012M A31	no	no	yes	no	yes	yes	yes	no
10/23/2012M A32	no	sometimes	yes	no	no	no	yes	no
10/23/2012M A14	in the past	sometimes	yes	no	no	no	yes	no
10/23/2012M A15	in the past	sometimes	no	no	yes	yes	yes	yes
10/22/2012M A12	in the past	regularly	yes	no	yes	no	no	no
10/22/2012M A13	no	regularly	yes	no	yes	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/22/2012M A11	no	no	no	no	no	yes	yes	yes
10/22/2012M A3	no	no	no	no	no	no	yes	no
10/22/2012M A7	in the past	daily	no	no	no	no	yes	yes
10/22/2012M A6	in the past	sometimes	yes	no	yes	no	yes	yes
10/22/2012M A5	no	sometimes	yes	no	yes	yes	yes	yes
10/22/2012M A10	yes	daily	no	no	no	no	yes	yes
10/22/2012M A9	yes	regularly	no	no	no	no	yes	yes
10/22/2012M A8	no	sometimes	no	no	no	no	yes	no
10/22/2012M A14	yes	daily	no	no	no	no	yes	yes
10/22/2012M A1	no	sometimes	yes	no	yes	yes	yes	yes
10/22/2012M A4	yes	daily	no	no	no	no	yes	no
10/22/2012M A2	in the past	sometimes	no	no	no	no	yes	no
10/23/2012JR 15	no	regularly	no	no	yes	yes	yes	yes
10/23/2012JR 16	in the past	regularly	no	no	no	no	yes	yes
10/23/2012JR 17	in the past	daily	no	no	no	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/23/2012JR 18	no	no	no	no	yes	no	yes	yes
10/23/2012JR 19	no	daily	yes	no	no	no	no	no
10/23/2012JR 20	no	sometimes	no	no	yes	no	yes	no
10/23/2012JR 21	no	sometimes	no	no	yes	yes	yes	no
10/23/2012JR 22	no	daily	no	no	yes	yes	yes	yes
10/23/2012JR 23	no	no	no	no	yes	no	yes	yes
10/23/2012JR 24	no	sometimes	no	no	yes	no	yes	yes
10/23/2012JR 25	no	sometimes	no	no	no	no	yes	no
10/23/2012JR 26	in the past	regularly	yes	no	yes	no	yes	no
10/23/2012JR 27	no	no	no	no	no	no	yes	no
10/23/2012JR 28	yes	sometimes	no	no	no	no	yes	yes
10/23/2012JR 29	in the past	sometimes	no	no	no	yes	yes	no
10/24/2012JR 30	no	no	no	no	yes	no	yes	yes
10/23/2012M A1	yes	regularly	no	no	no	yes	yes	no
10/23/2012M A2	no	regularly	no	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/23/2012M A3	no	sometimes	yes	yes	yes	no	yes	no
10/23/2012M A4	in the past	regularly	no	no	yes	no	yes	no
10/23/2012M A5	in the past	sometimes	yes	no	yes	no	yes	no
10/23/2012M A6	no	regularly	yes	no	yes	no	yes	no
10/23/2012M A7	no	regularly	yes	no	no	no	yes	no
10/23/2012M A8	in the past	sometimes	yes	no	yes	yes	yes	yes
10/23/2012M A9	in the past	sometimes	yes	no	no	no	yes	no
10/23/2012M A10	in the past	regularly	yes	yes	no	no	yes	no
10/23/2012M A11	yes	daily	no	no	no	no	yes	no
10/23/2012M A12	no	daily	yes	no	yes	no	yes	no
10/23/2012M A13	no	no	no	no	no	no	yes	no
10/23/2012M A14	in the past	sometimes	yes	no	no	no	yes	no
10/23/2012M A15	no	no	no	no	no	no	yes	no
10/23/2012M A16	yes	regularly	yes	yes	yes	no	yes	no
10/23/2012M A17	yes	regularly	yes	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/23/2012M A18	yes	regularly	yes	yes	no	no	yes	no
10/23/2012M A19	no	sometimes	yes	yes	yes	yes	yes	yes
10/23/2012M A20	no	sometimes	yes	yes	yes	yes	yes	no
10/23/2012M A21	no	daily	no	no	yes	no	yes	no
10/23/2012M A22	in the past	sometimes	yes	yes	yes	no	yes	yes
10/23/2012M A23	in the past	daily	yes	no	no	no	yes	no
10/23/2012M A24	in the past	regularly	no	no	yes	no	yes	no
10/23/2012M A26	no	regularly	no	no	yes	no	yes	yes
10/23/2012M A27	no	sometimes	no	no	no	no	yes	no
10/26/2012 AB8	in the past	sometimes	yes	no	no	no	yes	yes
10/26/2012 AB11	no	sometimes	no	no	no	no	yes	no
10/26/2012 AB5	no	regularly	yes	no	yes	no	yes	no
10/26/2012 AB7	yes	daily	no	no	no	no	yes	yes
10/26/2012 AB12	no	sometimes	yes	yes	yes	no	yes	no
10/26/2012 AB10	no	regularly	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/26/2012 AB9	no	regularly	yes	yes	no	no	yes	yes
10/26/2012 AB4	no	sometimes	yes	no	no	no	yes	no
10/26/2012 AB3	yes	daily	yes	no	yes	no	yes	no
10/26/2012 AB2	no	no	no	no	yes	no	no	no
10/26/2012 AB6	in the past	regularly	no	no	no	yes	yes	no
10/26/2012 AB1	in the past	sometimes	yes	no	no	no	yes	no
11/7/2012MA AB1	no	regularly	no	no	no	no	yes	yes
11/7/2012MA AB2	no	no	no	no	no	no	yes	no
11/7/2012MA AB9	no	sometimes	yes	no	no	yes	yes	no
11/7/2012MA AB4	yes	regularly	yes	no	no	no	yes	no
11/7/2012MA AB3	no	sometimes	no	no	yes	no	yes	no
11/7/2012MA AB5	no	no	yes	yes	yes	yes	yes	yes
11/7/2012MA AB6	no	sometimes	yes	no	no	no	yes	yes
11/7/2012MA AB10	no	daily	yes	no	yes	no	yes	no
11/7/2012MA AB8	no	daily	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
11/7/2012MA AB7	no	sometimes	yes	no	no	no	yes	no
11/7/2012MA AB14	no	sometimes	yes	no	no	no	yes	no
11/7/2012MA AB12	in the past	sometimes	yes	no	yes	yes	yes	no
11/7/2012MA AB11	no	regularly	yes	yes	yes	no	yes	no
11/7/2012MA AB17	no	no	no	no	no	no	yes	yes
11/7/2012MA AB16	yes	daily	yes	no	no	no	yes	no
11/7/2012MA AB15	in the past	sometimes	yes	yes	no	yes	yes	yes
11/7/2012MA AB13	no	sometimes	yes	no	yes	no	yes	no
10/26/2012JR 6	no	sometimes	no	no	no	no	yes	no
10/26/2012JR 4	no	no	no	no	no	no	no	no
10/26/2012JR 7	yes	daily	no	no	yes	no	no	no
10/26/2012JR 5	in the past	daily	yes	no	no	no	no	no
10/26/2012JR 8	in the past	sometimes	no	no	no	no	yes	no
10/26/2012JR 2	in the past	sometimes	no	no	no	no	yes	yes
10/26/2012JR 1	no	regularly	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
10/26/2012JR3	in the past	regularly	no	no	yes	no	yes	yes
10/26/2012JR9	in the past	daily	no	no	yes	no	yes	yes
10/26/2012JR10	in the past	sometimes	no	no	yes	no	yes	yes
11/7/2012MAAB18	no	daily	yes	no	no	no	yes	no
11/7/2012MAAB19	in the past	regularly	no	no	no	no	yes	no
11/12/2012MAKM1	in the past	regularly	no	no	no	no	no	no
11/12/2012MAKM3	yes	daily	no	no	yes	yes	yes	yes
11/12/2012MAKM4	no	daily	no	no	no	no	yes	no
11/12/2012MAKM5	in the past	regularly	no	no	no	no	yes	no
11/12/2012MAKM6	no	no	no	no	yes	no	no	no
11/12/2012MAKM7	no	regularly	no	yes	no	no	yes	no
11/12/2012MAKM8	in the past	sometimes	no	no	no	no	yes	no
11/12/2012MAKM11	in the past	sometimes	yes	yes	yes	no	yes	no
11/12/2012MAKM10	in the past	regularly	no	no	no	no	yes	yes
11/12/2012MAKM15	no	no	no	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
11/12/2012M AKM16	in the past	no	no	no	no	no	yes	no
11/12/2012M AKM17	yes	daily	no	no	no	no	yes	yes
11/12/2012M AKM14	no	regularly	no	no	no	no	yes	yes
11/12/2012M AKM13	no	sometimes	no	no	no	no	yes	no
11/12/2012M AKM12	no	sometimes	no	no	no	no	yes	yes
11/12/2012M AKM2	in the past	sometimes	no	no	yes	no	yes	yes
11/12/2012M AKM9	no	sometimes	no	no	no	no	yes	no
11/7/2012MA AB29	in the past	regularly	yes	no	no	no	yes	yes
11/7/2012MA AB27	in the past	sometimes	no	no	yes	no	yes	no
11/7/2012MA AB28	in the past	regularly	no	no	no	no	yes	yes
11/13/2012M AAB32	no	daily	no	no	no	no	yes	no
31	in the past	sometimes	no	no	no	no	yes	yes
11/7/2012MA AB30	yes	regularly	no	no	yes	no	yes	no
11/7/2012MA AB26	no	sometimes	no	no	no	no	yes	yes
11/7/2012MA AB20	no	regularly	no	no	no	yes	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
11/7/2012MA AB21	no	no	no	no	no	no	yes	no
11/7/2012MA AB23	in the past	sometimes	no	no	yes	no	yes	yes
11/7/2012MA AB22	no	sometimes	no	no	no	no	yes	yes
11/7/2012MA AB24	no	regularly	no	no	no	no	no	no
11/7/2012MA AB25	no	regularly	yes	no	no	yes	yes	yes
11/13/2012M AAB33	in the past	sometimes	no	no	no	no	yes	no
11/13/2012M AAB13	no	sometimes	no	no	no	no	yes	no
11/13/2012M AABKM11	no	daily	no	no	no	yes	yes	no
11/13/2012M AABKM9	in the past	sometimes	no	no	yes	no	yes	yes
11/13/2012M AABKM16	in the past	sometimes	yes	no	no	no	yes	no
11/13/2012M AABKM17	yes	regularly	no	no	no	no	yes	yes
11/13/2012M AABKM14	no	no	no	no	no	no	no	no
11/13/2012M AABKM10	no	sometimes	no	no	yes	yes	yes	no
11/13/2012M AABKM5	in the past	no	no	no	no	no	yes	no
11/13/2012M AABKM12	in the past	sometimes	no	no	no	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
11/13/2012M AABKM6	yes	daily	no	no	yes	no	yes	yes
11/13/2012M AABKM7	in the past	regularly	yes	no	no	yes	yes	yes
11/13/2012M AABKM8	no	no	no	no	no	no	yes	yes
11/13/2012M AABKM4	no	daily	no	no	yes	no	yes	no
11/13/2012M AABKM3	no	regularly	yes	no	yes	no	yes	yes
11/13/2012M AABKM1	no	sometimes	no	no	yes	no	yes	no
11/13/2012M AABKM2	in the past	no	no	no	yes	no	yes	yes
1/28/2013 MA40	no	no	yes	no	no	yes	yes	no
1/28/2013 MA1	no	no	yes	yes	no	yes	yes	no
1/28/2013 MA45	no	no	yes	no	yes	no	yes	no
1/28/2013 MA43	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA42	in the past	sometimes	yes	no	yes	no	yes	no
1/28/2013 MA41	no	sometimes	yes	yes	no	no	yes	no
1/28/2013 MA41	no	sometimes	yes	yes	no	no	yes	no
1/28/2013 MA56	in the past	sometimes	yes	yes	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA53	no	sometimes	yes	no	yes	no	yes	yes
1/28/2013 MA44	no	no	yes	yes	no	no	yes	no
1/28/2013 MA52	no	regularly	yes	yes	no	no	yes	no
1/28/2013 MA18	no	sometimes	yes	no	no	yes	yes	no
1/28/2013 MA10	no	no	yes	no	no	yes	yes	yes
1/28/2013 MA7	no	sometimes	yes	yes	no	yes	yes	no
1/28/2013 MA8	no	no	yes	no	no	no	yes	no
1/28/2013 MA57	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA59	no	sometimes	yes	no	no	no	yes	no
1/28/2013 MA19	no	regularly	yes	no	yes	no	yes	no
1/28/2013 MA13	in the past	regularly	yes	no	no	yes	yes	no
1/28/2013 MA58	no	no	yes	yes	no	no	yes	no
1/28/2013 MA20	no	sometimes	yes	no	no	yes	yes	no
1/28/2013 MA11	no	regularly	yes	yes	yes	no	yes	yes
1/28/2013 MA51	no	regularly	yes	no	yes	no	yes	yes

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA22	no	regularly	yes	no	no	no	yes	no
1/28/2013 MA60	no	sometimes	yes	yes	no	no	yes	no
1/28/2013 MA9	in the past	regularly	yes	no	no	no	no	no
1/28/2013 MA48	no	sometimes	yes	no	no	no	yes	no
1/28/2013 MA21	no	regularly	yes	no	yes	yes	yes	yes
1/28/2013 MA50	in the past	no	yes	yes	yes	yes	yes	no
1/28/2013 MA49	no	no	yes	yes	yes	no	yes	no
1/28/2013 MA3	in the past	regularly	yes	yes	no	no	yes	yes
1/28/2013 MA2	no	sometimes	yes	yes	no	no	yes	yes
1/28/2013 MA17	no	sometimes	no	no	no	no	yes	yes
1/28/2013 MA16	in the past	daily	yes	yes	yes	yes	yes	no
1/28/2013 MA14	in the past	sometimes	yes	yes	yes	yes	yes	yes
1/28/2013 MA15	no	regularly	yes	yes	yes	no	no	no
1/28/2013 MA4	no	sometimes	yes	yes	yes	yes	yes	no
1/28/2013 MA5	in the past	regularly	yes	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA6	no	sometimes	yes	yes	no	no	yes	no
1/28/2013 MA12	no	sometimes	yes	yes	yes	no	yes	no
1/28/2013 MA47	no	sometimes	yes	no	yes	no	yes	no
1/28/2013 MA46	no	sometimes	yes	yes	yes	no	yes	no
1/28/2013 MA54	no	no	yes	no	no	no	yes	no
1/28/2013 MA55	no	regularly	yes	yes	no	yes	yes	yes
1/28/2013 MA66	no	regularly	no	no	yes	no	yes	no
1/28/2013 MA62	no	sometimes	no	no	yes	yes	yes	no
1/28/2013 MA36	no	regularly	yes	no	no	no	yes	no
1/28/2013 MA37	no	daily	yes	yes	yes	no	yes	no
1/28/2013 MA40	no	daily	yes	yes	yes	no	yes	no
1/28/2013 MA39	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA41	in the past	daily	yes	no	no	no	yes	no
1/28/2013 MA42	no	daily	yes	no	no	no	yes	yes
1/28/2013 MA43	no	regularly	yes	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA44	no	regularly	yes	no	yes	no	yes	yes
1/28/2013 MA45	yes	daily	yes	no	no	no	yes	no
1/28/2013 MA49	no	sometimes	no	no	yes	no	yes	yes
1/28/2013 MA46	no	sometimes	no	no	yes	yes	yes	yes
1/28/2013 MA47	no	regularly	yes	no	no	yes	yes	yes
1/28/2013 MA51	in the past	regularly	no	no	yes	no	yes	no
1/28/2013 MA50	in the past	sometimes	no	no	no	no	yes	no
1/28/2013 MA52	no	regularly	no	no	no	no	yes	yes
1/28/2013 MA38	yes	daily	yes	no	yes	no	yes	no
1/28/2013 MA48	no	sometimes	yes	yes	yes	no	yes	no
1/28/2013 MA57	no	regularly	no	no	yes	no	yes	no
1/28/2013 MA53	no	sometimes	yes	yes	no	no	yes	no
1/28/2013 MA63	no	sometimes	yes	no	no	no	yes	no
1/28/2013 MA54	yes	daily	yes	no	yes	no	yes	no
1/28/2013 MA61	no	sometimes	no	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA55	yes	daily	no	no	yes	no	yes	no
1/28/2013 MA60	no	regularly	no	no	no	no	yes	yes
1/28/2013 MA59	no	sometimes	no	no	yes	no	no	no
1/28/2013 MA56	no	regularly	no	no	yes	no	yes	no
1/28/2013 MA58	no	regularly	no	no	no	no	yes	no
1/28/2013 MA72	in the past	regularly	no	no	yes	no	yes	no
1/28/2013 MA73	no	regularly	yes	no	yes	no	yes	no
1/28/2013 MA109	no	sometimes	no	no	no	yes	yes	no
1/28/2013 MA74	no	daily	no	no	no	no	yes	no
1/28/2013 MA77	in the past	sometimes	no	no	no	no	yes	yes
1/28/2013 MA76	in the past	regularly	no	no	yes	no	yes	no
1/28/2013 MA75	in the past	sometimes	yes	no	no	no	yes	no
1/28/2013 MA78	in the past	no	no	no	yes	no	yes	yes
1/28/2013 MA79	no	daily	no	no	yes	no	yes	no
1/28/2013 MA85	no	regularly	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA86	in the past	regularly	yes	no	yes	no	yes	yes
1/28/2013 MA87	no	daily	yes	yes	yes	no	yes	no
1/28/2013 MA88	no	sometimes	no	no	no	no	yes	yes
1/28/2013 MA80	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA81	in the past	sometimes	yes	no	yes	no	yes	no
1/28/2013 MA82	no	sometimes	no	no	no	no	yes	no
1/28/2013 MA83	in the past	sometimes	yes	no	yes	no	yes	yes
1/28/2013 MA84	no	daily	no	no	no	no	yes	yes
1/28/2013 MA106	in the past	daily	no	no	no	yes	yes	no
1/28/2013 MA105	yes	sometimes	no	no	no	no	yes	no
1/28/2013 MA104	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA103	in the past	regularly	yes	no	no	no	yes	no
1/28/2013 MA108	no	sometimes	no	no	yes	no	yes	no
1/28/2013 MA107	no	sometimes	yes	yes	no	no	yes	yes
1/28/2013 MA101	in the past	regularly	yes	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA102	no	regularly	yes	no	yes	yes	yes	no
1/28/2013 MA100	no	daily	yes	no	yes	yes	yes	yes
1/28/2013 MA92	in the past	sometimes	yes	yes	yes	no	yes	yes
1/28/2013 MA91	no	daily	yes	no	yes	no	yes	no
1/28/2013 MA90	in the past	sometimes	yes	no	no	no	no	no
1/28/2013 MA89	in the past	regularly	yes	no	no	no	yes	yes
1/28/2013 MA93	in the past	daily	yes	yes	yes	no	yes	yes
1/28/2013 MA95	in the past	daily	no	no	yes	no	yes	yes
1/28/2013 MA94	no	daily	yes	yes	yes	yes	no	no
1/28/2013 MA96	no	daily	yes	no	yes	no	yes	no
1/28/2013 MA97	no	daily	yes	yes	no	no	no	no
1/28/2013 MA98	in the past	regularly	yes	no	yes	no	yes	no
1/28/2013 MA99	no	regularly	yes	no	no	no	yes	no
1/28/2013 MA71	no	daily	yes	no	yes	no	yes	no
1/28/2013 MA70	in the past	daily	yes	no	yes	yes	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA69	in the past	daily	yes	no	no	no	yes	yes
1/28/2013 MA68	no	regularly	yes	no	yes	no	yes	no
1/28/2013 MA67	in the past	regularly	yes	yes	yes	no	yes	yes
1/28/2013 MA64	no	sometimes	no	no	yes	no	yes	no
1/28/2013 MA65	in the past	sometimes	yes	yes	yes	no	yes	no
1/28/2013 MA25	no	sometimes	yes	no	yes	no	yes	no
1/28/2013 MA1	yes	daily	no	no	no	no	yes	no
1/28/2013 MA2	yes	regularly	no	no	no	yes	yes	no
1/28/2013 MA6	no	daily	yes	no	yes	yes	yes	no
1/28/2013 MA5	in the past	sometimes	no	no	yes	no	yes	yes
1/28/2013 MA4	in the past	no	yes	yes	yes	no	yes	yes
1/28/2013 MA3	in the past	regularly	yes	no	no	no	no	no
1/28/2013 MA18	yes	daily	yes	yes	no	no	yes	no
1/28/2013 MA9	no	sometimes	yes	yes	no	no	yes	yes
1/28/2013 MA10	yes	daily	yes	yes	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA11	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA7	in the past	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA19	in the past	regularly	yes	no	yes	no	yes	yes
1/28/2013 MA8	no	sometimes	yes	yes	yes	no	yes	no
1/28/2013 MA28	no	sometimes	no	no	yes	no	yes	yes
1/28/2013 MA33	in the past	regularly	no	yes	yes	no	yes	no
1/28/2013 MA12	in the past	sometimes	yes	yes	no	no	yes	no
1/28/2013 MA31	yes	regularly	yes	yes	yes	yes	yes	no
1/28/2013 MA32	no	regularly	no	no	no	yes	yes	no
1/28/2013 MA29	no	daily	yes	yes	no	no	yes	yes
1/28/2013 MA20	in the past	regularly	no	no	no	no	yes	no
1/28/2013 MA17	in the past	sometimes	yes	yes	yes	no	yes	yes
1/28/2013 MA34	no	sometimes	yes	yes	yes	no	yes	no
1/28/2013 MA16	in the past	regularly	no	no	no	no	yes	no
1/28/2013 MA13	in the past	sometimes	yes	no	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
1/28/2013 MA14	no	regularly	yes	yes	yes	no	yes	no
1/28/2013 MA22	no	regularly	yes	yes	no	no	yes	no
1/28/2013 MA30	yes	daily	yes	no	no	no	yes	no
1/28/2013 MA27	in the past	sometimes	yes	no	yes	yes	yes	no
1/28/2013 MA23	in the past	sometimes	yes	no	yes	yes	yes	no
1/28/2013 MA15	in the past	sometimes	no	no	yes	no	yes	no
1/28/2013 MA26	no	sometimes	yes	yes	yes	yes	yes	yes
1/28/2013 MA35	no	sometimes	yes	no	no	no	yes	no
1/28/2013 MA24	in the past	regularly	yes	no	no	no	yes	no
1/28/2013 MA21	in the past	sometimes	yes	no	yes	no	yes	yes
2/19/2013 MA1	no	no	yes	yes	no	yes	yes	no
2/19/2013 MA2	no	sometimes	yes	yes	no	no	yes	yes
2/19/2013 MA3	in the past	regularly	yes	yes	no	no	yes	yes
2/19/2013 MA4	no	sometimes	yes	yes	yes	yes	yes	no
2/19/2013 MA5	in the past	regularly	yes	yes	yes	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
2/19/2013 MA6	no	sometimes	yes	yes	no	no	yes	no
2/19/2013 MA7	no	sometimes	yes	yes	no	yes	yes	no
2/19/2013 MA8	no	no	yes	no	no	no	yes	no
2/19/2013 MA9	in the past	regularly	yes	no	no	no	no	no
2/19/2013 MA10	no	no	yes	no	no	yes	yes	yes
2/19/2013 MA11	no	regularly	yes	yes	yes	no	yes	yes
2/19/2013 MA12	no	sometimes	yes	yes	yes	no	yes	no
2/19/2013 MA13	in the past	regularly	yes	no	no	yes	yes	no
2/19/2013 MA14	in the past	sometimes	yes	yes	yes	yes	yes	yes
2/19/2013 MA15	no	regularly	yes	yes	yes	no	no	no
2/19/2013 MA16	in the past	daily	yes	yes	yes	yes	yes	no
2/19/2013 MA17	no	sometimes	no	no	no	no	yes	yes
2/19/2013 MA18	no	sometimes	yes	no	no	yes	yes	no
2/19/2013 MA19	no	regularly	yes	no	yes	no	yes	no
2/19/2013 MA20	no	sometimes	yes	no	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
2/19/2013 MA21	no	regularly	yes	no	yes	yes	yes	yes
2/19/2013 MA22	no	regularly	yes	no	no	no	yes	no
2/19/2013 MA40	no	no	yes	no	no	yes	yes	no
2/19/2013 MA41	no	sometimes	yes	yes	no	no	yes	no
2/19/2013 MA42	in the past	sometimes	yes	no	yes	no	yes	no
2/19/2013 MA43	no	regularly	yes	yes	yes	no	yes	no
2/19/2013 MA44	no	no	yes	yes	no	no	yes	no
2/19/2013 MA45	no	no	yes	no	yes	no	yes	no
2/19/2013 MA46	no	sometimes	yes	yes	yes	no	yes	no
2/19/2013 MA47	no	sometimes	yes	no	yes	no	yes	no
2/19/2013 MA48	no	sometimes	yes	no	no	no	yes	no
2/19/2013 MA49	no	no	yes	yes	yes	no	yes	no
2/19/2013 MA50	in the past	no	yes	yes	yes	yes	yes	no
2/19/2013 MA51	no	regularly	yes	no	yes	no	yes	yes
2/19/2013 MA52	no	regularly	yes	yes	no	no	yes	no

Appendix 4. Cont.

Sample	Sports	Gym	Previous work in healthcare ?	Current work in Healthcare	Live with someone who work in healthcare	Dermatological conditions	Treated with antibiotics ?	Stopped antibiotics treatment when felt better?
2/19/2013 MA53	no	sometimes	yes	no	yes	no	yes	yes
2/19/2013 MA54	no	no	yes	no	no	no	yes	no
2/19/2013 MA55	no	regularly	yes	yes	no	yes	yes	yes
2/19/2013 MA56	in the past	sometimes	yes	yes	no	no	yes	no
2/19/2013 MA57	no	regularly	yes	yes	yes	no	yes	no
2/19/2013 MA58	no	no	yes	yes	no	no	yes	no
2/19/2013 MA59	no	sometimes	yes	no	no	no	yes	no
2/19/2013 MA60	no	sometimes	yes	yes	no	no	yes	no

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
9/25/2012 01	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 02	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 03	yes	no	no	no	not sure	TRUE	not sure	not sure
9/25/2012 04	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 05	yes	no	no	no	TRUE	not sure	TRUE	TRUE
9/25/2012 06	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 07	yes	no	no	no	not sure	not sure	not sure	TRUE
9/25/2012 08	yes	no	no	no	not sure	not sure	TRUE	not sure
9/25/2012 09	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 10	yes	no	no	no	TRUE	TRUE	TRUE	not sure
9/25/2012 11	yes	no	yes	no	FALSE	TRUE	not sure	TRUE
9/25/2012 12	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 13	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
9/25/2012 14	yes	no	no	no	TRUE	TRUE	not sure	TRUE
9/25/2012 15	yes	no	no	no	not sure	TRUE	not sure	TRUE
9/25/2012 16	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 17	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 19	yes	no	no	no	not sure	TRUE	TRUE	not sure
9/25/2012 20	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 21	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 22	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 23	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 24	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 25	yes	no	yes	no	FALSE	not sure	TRUE	TRUE
9/25/2012 26	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 27	yes	no	yes	yes	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
9/25/2012 28	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 29	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/25/2012 30	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/25/2012 31	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
9/25/2012 32	yes	no	no	no	FALSE	TRUE	FALSE	FALSE
9/25/2012 33	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
9/24/2012 01	yes	no	no	no	not sure	not sure	not sure	not sure
9/24/2012 02	no	no	no	no	not sure	not sure	not sure	not sure
9/24/2012 03	no	Not sure	no	no	TRUE	TRUE	TRUE	TRUE
9/24/2012 04	yes	no	no	no	not sure	not sure	not sure	not sure
9/24/2012 05	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
9/24/2012 06	yes	no	no	no	not sure	not sure	not sure	not sure
9/24/2012 07	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
9/24/2012 08	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/24/2012 09	yes	no	no	no	not sure	TRUE	TRUE	TRUE
9/24/2012 11	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
9/24/2012 12	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
11182012MA 19	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10182012MA 20	no	Not sure	yes	no	not sure	TRUE	TRUE	TRUE
10182012MA 19	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10182012MA 18	yes	no	no	no	TRUE	TRUE	not sure	not sure
10182012MA 17	yes	no	no	no	not sure	not sure	not sure	not sure
10182012MA 21	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10182012MA 22	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10182012MA 30	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10182012M	yes	no	no	no	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10182012MA 25	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10182012MA 23	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10182012MA 27	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10182012MA 26	yes	no	no	no	not sure	not sure	not sure	TRUE
10182012MA 28	no	no	no	no	not sure	TRUE	not sure	not sure
10182012MA 29	yes	no	no	no	TRUE	not sure	not sure	not sure
10182012MA 1	no	no	no	no	not sure	not sure	not sure	not sure
10182012MA 2	no	no	no	no	not sure	not sure	not sure	not sure
10182012MA 3	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10182012MA 4	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10182012MA 5	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10182012MA 6	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10182012M	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10182012MA8	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10182012MA9	yes	no	yes	yes	TRUE	TRUE	TRUE	TRUE
10182012MA10	yes	no	no	no	not sure	FALSE	TRUE	TRUE
10182012MA11	yes	no	no	no	not sure	not sure	TRUE	TRUE
10182012MA12	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10182012MA13	no	no	no	no	not sure	TRUE	not sure	not sure
10182012MA14	yes	no	yes	no	not sure	TRUE	not sure	TRUE
10182012MA15	yes	no	no	no	TRUE	TRUE	not sure	TRUE
10182012MA16	no	no	no	no	not sure	not sure	not sure	not sure
10112012AB20	yes	yes	no	no	TRUE	TRUE	TRUE	TRUE
10112012MA1	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10112012MA2	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
10112012MA3	yes	no	yes	no	not sure	TRUE	FALSE	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10112012MA 4	no	no	yes	no	TRUE	TRUE	TRUE	TRUE
10112012MA 5	no	no	no	no	TRUE	TRUE	FALSE	TRUE
10112012MA 6	no	no	no	no	TRUE	TRUE	FALSE	TRUE
10112012MA 8	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10112012MA 9	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10112012MA 15	no	no	no	no	not sure	not sure	not sure	not sure
10112012MA 11	no	no	no	no	not sure	not sure	not sure	TRUE
10112012MA 7	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10112012MA 10	no	Not sure	no	Not sure	not sure	TRUE	not sure	not sure
10112012MA 12	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10112012MA 13	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure
10112012MA 16	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure
10112012A	no	no	no	no	not sure	not sure	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10112012AB 2	no	no	no	no	not sure	not sure	not sure	not sure
10112012AB 3	yes	no	yes	no	TRUE	not sure	FALSE	TRUE
10112012AB 4	yes	no	no	no	not sure	not sure	TRUE	TRUE
10112012AB 5	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10112012AB 6	no	no	yes	no	not sure	TRUE	TRUE	TRUE
10112012AB 7	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE
10112012AB 8	no	no	no	no	not sure	not sure	not sure	not sure
10112012AB 9	yes	no	yes	no	not sure	TRUE	TRUE	FALSE
10112012AB 10	no	no	no	no	not sure	not sure	TRUE	TRUE
10112012AB 11	no	no	no	no	not sure	not sure	not sure	not sure
10112012AB 12	no	no	no	no	not sure	not sure	not sure	not sure
10112012AB 13	yes	no	no	no	not sure	TRUE	not sure	TRUE
10112012A	no	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10112012AB 15	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10112012AB 16	no	no	no	Not sure	not sure	TRUE	TRUE	TRUE
10112012AB 17	no	no	no	no	not sure	not sure	not sure	not sure
10112012AB 18	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure
10112012AB 19	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012A B20	yes	yes	no	no	TRUE	TRUE	TRUE	TRUE
10/11/2012M A1	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/11/2012M A2	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
10/11/2012M A3	yes	no	yes	yes	not sure	TRUE	FALSE	not sure
10/11/2012M A4	no	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/11/2012M A5	no	no	no	no	TRUE	TRUE	FALSE	TRUE
10/11/2012M A6	no	no	no	no	TRUE	TRUE	FALSE	TRUE
10/11/2012	yes	no	yes	no	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/11/2012M A9	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/11/2012M A15	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012M A11	no	no	no	no	not sure	not sure	not sure	TRUE
10/11/2012M A7	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/11/2012M A10	no	no	no	no	not sure	TRUE	not sure	not sure
10/11/2012M A12	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/11/2012M A13	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure
10/11/2012M A16	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure
10/11/2012A B1	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012A B2	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012A B3	yes	no	yes	no	TRUE	not sure	FALSE	TRUE
10/11/2012A B4	yes	no	no	no	not sure	not sure	TRUE	TRUE
10/11/2012	yes	no	no	no	FALSE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/11/2012A B6	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/11/2012A B7	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE
10/11/2012A B8	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012A B9	yes	no	yes	no	not sure	TRUE	TRUE	FALSE
10/11/2012A B10	no	no	no	no	not sure	not sure	TRUE	TRUE
10/11/2012A B11	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012A B12	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012A B13	no	no	no	no	not sure	TRUE	not sure	TRUE
10/11/2012A B14	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/11/2012A B15	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/11/2012A B16	no	no	no	no	not sure	TRUE	TRUE	TRUE
10/11/2012A B17	no	no	no	no	not sure	not sure	not sure	not sure
10/11/2012	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/11/2012A B19	no	no	no	no	not sure	not sure	not sure	not sure
10/3/2012 01	yes	no	no	no	not sure	not sure	not sure	TRUE
10/3/2012 03	yes	no	no	no	not sure	not sure	not sure	not sure
10/3/2012 04	no	no	no	no	not sure	not sure	not sure	not sure
10/3/2012 05	no	Not sure	no	no	not sure	TRUE	not sure	not sure
10/3/2012 06	no	Not sure	no	no	not sure	not sure	not sure	not sure
10/3/2012 07	no	no	no	no	not sure	not sure	not sure	not sure
10/3/2012 08	no	Not sure	no	no	not sure	TRUE	TRUE	TRUE
10/3/2012 09	no	no	no	no	not sure	not sure	not sure	not sure
10/3/2012 10	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/3/2012 11	yes	no	no	no	not sure	not sure	not sure	TRUE
10/3/2012 12	yes	Not sure	no	no	not sure	TRUE	not sure	not sure
10/3/2012 13	no	no	no	no	TRUE	TRUE	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/3/2012 14	yes	no	no	no	TRUE	TRUE	TRUE	not sure
10/3/2012 15	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/3/2012 16	yes	yes	yes	no	TRUE	TRUE	TRUE	TRUE
10/3/2012 17	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
10/3/2012 18	no	no	no	no	not sure	not sure	not sure	not sure
10/10/2012 MA1	yes	yes	no	no	TRUE	TRUE	not sure	TRUE
10/10/2012 MA2	yes	no	yes	no	not sure	TRUE	not sure	TRUE
10/10/2012 MA3	yes	no	no	no	not sure	not sure	TRUE	TRUE
10/10/2012 MA4	no	no	no	no	not sure	TRUE	TRUE	TRUE
10/10/2012 MA5	yes	no	yes	no	TRUE	not sure	TRUE	TRUE
10/10/2012 MA6	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/10/2012 MA7	no	no	no	no	not sure	not sure	not sure	not sure
10/10/2012	yes	no	yes	no	TRUE	TRUE	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/10/2012 MA9	yes	Not sure	yes	no	TRUE	TRUE	TRUE	TRUE
10/10/2012 MA10	no	no	no	no	TRUE	FALSE	not sure	not sure
10/10/2012 MA11	no	no	no	no	not sure	TRUE	not sure	TRUE
10/10/2012 MA12	yes	Not sure	no	no	TRUE	TRUE	FALSE	TRUE
10/10/2012 MA13	no	no	no	no	not sure	TRUE	TRUE	TRUE
10/10/2012 AB1	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/10/2012 AB2	no	no	no	no	TRUE	TRUE	not sure	TRUE
10/10/2012 AB3	yes	no	yes	no	not sure	not sure	not sure	TRUE
10/10/2012 AB4	no	no	no	no	not sure	TRUE	not sure	TRUE
10/10/2012 AB5	no	no	no	no	not sure	not sure	not sure	not sure
10/10/2012 AB6	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/10/2012 AB7	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/10/2012	no	no	no	no	FALSE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/10/2012 AB9	no	no	no	no	not sure	TRUE	TRUE	TRUE
10/10/2012 AB10	no	no	no	no	not sure	not sure	not sure	not sure
10/10/2012 AB11	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/10/2012 AB12	no	Not sure	no	no	TRUE	TRUE	not sure	TRUE
10/10/2012 AB13	no	no	no	no	not sure	TRUE	not sure	TRUE
10/10/2012 AB14	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/10/2012 AB15	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/10/2012 AB16	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/10/2012 AB17	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/10/2012 AB18	no	no	no	no	not sure	not sure	not sure	not sure
10/10/2012 AB19	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE
10/05/2012 AB12	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/05/2012	yes	no	no	no	not sure	not sure	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/05/2012 AB10	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/05/2012 AB09	yes	no	yes	no	not sure	TRUE	not sure	TRUE
10/05/2012 AB08	yes	no	yes	no	not sure	TRUE	not sure	TRUE
10/05/2012 AB07	yes	no	no	no	TRUE	not sure	not sure	TRUE
10/05/2012 AB06	no	no	yes	no	TRUE	TRUE	TRUE	FALSE
10/05/2012 AB05	no	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/05/2012 AB04	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/05/2012 AB04	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/05/2012 AB03	yes	no	no	no	not sure	not sure	not sure	TRUE
10/05/2012 AB02	no	no	no	no	not sure	TRUE	not sure	TRUE
10/05/2012 AB01	no	no	no	no	not sure	not sure	not sure	not sure
10/05/2012 AB16	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/05/2012	yes	no	no	no	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/05/2012 AB15	no	no	no	no	not sure	not sure	not sure	not sure
10/05/2012 AB17	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/05/2012 AB18	no	no	no	no	not sure	not sure	not sure	not sure
10/05/2012 AB14	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
09/26/2012 JR02	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
09/26/2012 JR01	yes	no	no	no	TRUE	not sure	not sure	TRUE
10/18/2012 MA30	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/18/2012 MA29	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA28	no	no	no	no	not sure	TRUE	not sure	not sure
10/18/2012 MA27	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA26	yes	no	no	no	not sure	not sure	not sure	TRUE
10/18/2012 MA25	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/18/2012	yes	no	no	no	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/18/2012 MA23	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/18/2012 MA22	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA21	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/18/2012 MA20	no	Not sure	yes	no	not sure	TRUE	TRUE	TRUE
10/18/2012 MA19	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/18/2012 MA18	yes	no	no	no	TRUE	TRUE	not sure	not sure
10/18/2012 MA17	yes	no	no	no	not sure	not sure	not sure	not sure
10/18/2012 MA16	no	no	no	no	not sure	not sure	not sure	not sure
10/18/2012 MA15	yes	no	no	no	TRUE	TRUE	not sure	TRUE
10/18/2012 MA14	yes	no	yes	no	not sure	TRUE	not sure	TRUE
10/18/2012 MA13	no	no	no	no	not sure	TRUE	not sure	not sure
10/18/2012 MA12	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/18/2012	yes	no	no	no	not sure	not sure	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/18/2012 MA10	yes	no	no	no	not sure	FALSE	TRUE	TRUE
10/18/2012 MA09	yes	no	yes	yes	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA08	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA07	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA06	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/18/2012 MA05	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA04	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/18/2012 MA03	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/18/2012 MA02	no	no	no	no	not sure	not sure	not sure	not sure
10/18/2012 MA01	no	no	no	no	not sure	not sure	not sure	not sure
10242012ma1	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10242012ma2	yes	no	no	no	not sure	not sure	not sure	TRUE
10242012m	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10242012ma4	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE
10242012ma5	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10242012ma6	yes	no	no	no	not sure	not sure	TRUE	TRUE
10242012ma7	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012ma8	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10242012ma9	yes	no	no	no	not sure	TRUE	not sure	not sure
10242012ma10	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012ma11	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10242012ma12	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012ma13	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012ma14	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10242012ma15	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012m	yes	no	no	no	FALSE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10242012ma17	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012ma18	no	no	no	no	not sure	not sure	not sure	not sure
10242012ma19	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10242012ma20	no	no	no	no	not sure	not sure	not sure	TRUE
10242012ma21	no	Not sure	no	no	not sure	not sure	not sure	not sure
10242012ma22	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10242012ma23	yes	no	yes	yes	TRUE	TRUE	FALSE	TRUE
10242012ma24	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10242012ma25	yes	no	yes	yes	not sure	TRUE	TRUE	TRUE
10242012ma26	yes	no	no	no	not sure	TRUE	not sure	TRUE
10242012ma27	yes	no	no	no	not sure	TRUE	not sure	not sure
10242012ma28	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10242012m	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10242012ma30	yes	no	no	no	TRUE	TRUE	not sure	not sure
10232012jr1	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10232012jr2	yes	no	no	no	FALSE	TRUE	TRUE	FALSE
10232012jr3	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10232012jr4	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10232012jr5	yes	no	no	no	not sure	not sure	not sure	TRUE
10232012jr6	yes	no	no	no	TRUE	not sure	FALSE	TRUE
10232012jr7	yes	no	no	no	not sure	not sure	not sure	not sure
10232012jr8	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
10232012jr9	yes	no	no	no	not sure	not sure	not sure	not sure
10232012jr10	no	no	no	no	not sure	not sure	not sure	not sure
10232012JR11	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10232012J	yes	no	no	no	FALSE	TRUE	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10232012JR13	yes	no	no	no	not sure	not sure	not sure	not sure
10232012J	yes	no	no	no	not sure	FALSE	FALSE	not sure
10/23/2012K M1	yes	no	no	no	TRUE	TRUE	not sure	TRUE
10/23/2012K M2	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/23/2012K M3	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
10/23/2012K M4	yes	no	no	no	TRUE	TRUE	not sure	not sure
10/23/2012K M5	yes	no	no	no	FALSE	TRUE	not sure	TRUE
10/23/2012K M6	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012K M7	yes	no	yes	yes	TRUE	TRUE	TRUE	TRUE
10/23/2012K M8	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/23/2012K M9	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012K M10	no	no	no	no	not sure	not sure	not sure	not sure
10/23/2012K M11	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/23/2012K M12	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012K M13	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012K M14	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012K M15	no	no	no	no	FALSE	TRUE	FALSE	TRUE
10/23/2012K M16	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/23/2012K M17	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A1	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A2	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/23/2012M A3	no	no	no	no	not sure	not sure	not sure	not sure
10/23/2012M A4	no	no	no	no	not sure	TRUE	not sure	TRUE
10/23/2012M A5	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A7	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/23/2012M A9	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A10	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A11	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A12	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A13	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A17	yes	no	no	no	not sure	TRUE	not sure	not sure
10/23/2012M A18	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A19	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A20	yes	no	no	no	not sure	not sure	not sure	not sure
10/23/2012M A21	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/23/2012M A22	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A24	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012	yes	no	no	no	not sure	TRUE	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/23/2012M A23	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A26	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A27	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A28	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A29	yes	Not sure	no	no	FALSE	TRUE	TRUE	TRUE
10/23/2012M A30	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A31	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A32	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A14	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A15	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
10/22/2012M A12	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/22/2012M A13	no	no	no	no	not sure	not sure	not sure	not sure
10/22/2012	yes	no	yes	no	not sure	TRUE	FALSE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/22/2012M A3	yes	no	no	no	not sure	TRUE	not sure	FALSE
10/22/2012M A7	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
10/22/2012M A6	no	no	no	no	not sure	TRUE	TRUE	TRUE
10/22/2012M A5	no	Not sure	no	no	not sure	not sure	not sure	not sure
10/22/2012M A10	no	no	no	no	not sure	not sure	not sure	not sure
10/22/2012M A9	no	no	no	no	not sure	not sure	not sure	not sure
10/22/2012M A8	no	no	no	no	TRUE	not sure	not sure	TRUE
10/22/2012M A14	no	no	no	no	not sure	not sure	not sure	not sure
10/22/2012M A1	no	no	no	no	not sure	not sure	not sure	not sure
10/22/2012M A4	no	no	no	no	not sure	TRUE	not sure	TRUE
10/22/2012M A2	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012JR 15	no	no	no	no	not sure	not sure	not sure	TRUE
10/23/2012J	no	no	no	no	TRUE	TRUE	FALSE	FALSE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/23/2012JR 17	yes	no	no	no	not sure	TRUE	not sure	TRUE
10/23/2012JR 18	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012JR 19	no	Not sure	no	no	not sure	not sure	not sure	not sure
10/23/2012JR 20	yes	no	no	no	not sure	TRUE	not sure	not sure
10/23/2012JR 21	yes	no	yes	yes	not sure	TRUE	not sure	not sure
10/23/2012JR 22	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012JR 23	yes	no	yes	no	TRUE	TRUE	TRUE	not sure
10/23/2012JR 24	no	no	no	no	not sure	TRUE	not sure	not sure
10/23/2012JR 25	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012JR 26	yes	no	no	no	TRUE	not sure	TRUE	TRUE
10/23/2012JR 27	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012JR 28	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012J	no	Not sure	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/24/2012JR30	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012MA1	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012MA2	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012MA3	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012MA4	yes	no	no	no	TRUE	TRUE	not sure	TRUE
10/23/2012MA5	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
10/23/2012MA6	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012MA7	yes	no	no	no	not sure	TRUE	TRUE	not sure
10/23/2012MA8	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012MA9	yes	no	no	no	FALSE	TRUE	TRUE	not sure
10/23/2012MA10	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/23/2012MA11	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/23/2012MA12	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/23/2012M A13	yes	no	no	no	not sure	not sure	not sure	not sure
10/23/2012M A14	yes	Not sure	no	no	TRUE	TRUE	TRUE	TRUE
10/23/2012M A15	yes	no	no	no	not sure	not sure	not sure	not sure
10/23/2012M A16	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/23/2012M A17	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
10/23/2012M A18	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012M A19	yes	no	yes	no	not sure	TRUE	FALSE	TRUE
10/23/2012M A20	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
10/23/2012M A21	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE
10/23/2012M A22	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
10/23/2012M A23	yes	no	no	no	not sure	not sure	FALSE	TRUE
10/23/2012M A24	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/23/2012 MA26	yes	Not sure	yes	yes	not sure	not sure	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/23/2012M A27	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/26/2012 AB8	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/26/2012 AB11	yes	no	no	no	not sure	TRUE	not sure	not sure
10/26/2012 AB5	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/26/2012 AB7	yes	no	yes	no	TRUE	FALSE	TRUE	TRUE
10/26/2012 AB12	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
10/26/2012 AB10	yes	no	no	no	TRUE	FALSE	TRUE	TRUE
10/26/2012 AB9	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
10/26/2012 AB4	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
10/26/2012 AB3	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/26/2012 AB2	no	no	no	no	not sure	not sure	not sure	not sure
10/26/2012 AB6	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/26/2012 AB1	yes	no	no	no	not sure	not sure	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
11/7/2012MA AB1	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
11/7/2012MA AB2	yes	no	no	no	FALSE	TRUE	FALSE	not sure
11/7/2012MA AB9	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB4	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB3	yes	no	yes	yes	not sure	not sure	TRUE	not sure
11/7/2012MA AB5	yes	yes	yes	yes	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB6	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB10	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB8	yes	no	no	no	not sure	TRUE	not sure	TRUE
11/7/2012MA AB7	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB14	yes	no	yes	no	TRUE	not sure	TRUE	TRUE
11/7/2012MA AB12	no	Not sure	no	no	not sure	not sure	not sure	not sure
11/7/2012MA AB11	yes	no	no	no	FALSE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
11/7/2012MA AB17	yes	yes	yes	no	not sure	TRUE	TRUE	TRUE
11/7/2012MA AB16	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB15	yes	yes	yes	yes	TRUE	TRUE	FALSE	TRUE
11/7/2012MA AB13	yes	no	no	no	not sure	TRUE	TRUE	TRUE
10/26/2012JR 6	no	no	no	no	not sure	not sure	not sure	TRUE
10/26/2012JR 4	no	no	no	no	not sure	not sure	not sure	not sure
10/26/2012JR 7	no	no	no	no	TRUE	TRUE	TRUE	TRUE
10/26/2012JR 5	yes	yes	yes	yes	FALSE	TRUE	TRUE	TRUE
10/26/2012JR 8	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
10/26/2012JR 2	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
10/26/2012JR 1	no	no	no	no	not sure	not sure	not sure	TRUE
10/26/2012JR 3	no	no	no	Not sure	FALSE	TRUE	not sure	TRUE
10/26/2012JR 9	no	no	no	no	not sure	not sure	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
10/26/2012JR10	yes	no	no	Not sure	not sure	TRUE	not sure	not sure
11/7/2012MAAB18	yes	no	no	no	FALSE	not sure	TRUE	TRUE
11/7/2012MAAB19	yes	no	yes	no	not sure	not sure	TRUE	TRUE
11/12/2012MAKM1	no	no	no	no	not sure	not sure	not sure	not sure
11/12/2012MAKM3	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
11/12/2012MAKM4	no	no	no	no	not sure	not sure	not sure	not sure
11/12/2012MAKM5	no	no	no	no	not sure	not sure	not sure	not sure
11/12/2012MAKM6	yes	no	yes	no	FALSE	TRUE	not sure	TRUE
11/12/2012MAKM7	no	no	no	no	not sure	not sure	not sure	not sure
11/12/2012MAKM8	no	no	no	no	not sure	not sure	not sure	not sure
11/12/2012MAKM11	no	no	no	no	not sure	TRUE	TRUE	not sure
11/12/2012MAKM10	yes	no	no	no	TRUE	TRUE	not sure	TRUE
11/12/2012MAKM15	yes	no	yes	no	not sure	FALSE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
11/12/2012M AKM16	yes	no	no	no	not sure	TRUE	not sure	not sure
11/12/2012M AKM17	no	no	no	no	TRUE	TRUE	TRUE	TRUE
11/12/2012M AKM14	no	no	no	no	FALSE	TRUE	TRUE	TRUE
11/12/2012M AKM13	yes	no	no	no	not sure	not sure	not sure	not sure
11/12/2012M AKM12	no	Not sure	no	no	not sure	not sure	not sure	not sure
11/12/2012M AKM2	no	no	no	no	not sure	not sure	not sure	not sure
11/12/2012M AKM9	no	no	no	no	not sure	not sure	not sure	not sure
11/7/2012MA AB29	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
11/7/2012MA AB27	no	no	no	no	not sure	not sure	not sure	not sure
11/7/2012MA AB28	no	no	no	no	not sure	TRUE	not sure	not sure
11/13/2012M AAB32	yes	no	no	no	TRUE	TRUE	not sure	TRUE
31	no	no	no	no	not sure	not sure	not sure	not sure
11/7/2012MA AB30	no	no	no	no	not sure	not sure	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
11/7/2012MA AB26	yes	no	no	no	not sure	TRUE	TRUE	TRUE
11/7/2012MA AB20	yes	no	no	no	not sure	TRUE	TRUE	TRUE
11/7/2012MA AB21	yes	no	no	no	not sure	TRUE	not sure	not sure
11/7/2012MA AB23	no	no	no	no	not sure	not sure	not sure	not sure
11/7/2012MA AB22	no	no	no	no	TRUE	TRUE	TRUE	TRUE
11/7/2012MA AB24	no	no	no	no	not sure	TRUE	not sure	TRUE
11/7/2012MA AB25	yes	no	no	no	FALSE	TRUE	not sure	TRUE
11/13/2012M AAB33	no	no	no	no	TRUE	TRUE	TRUE	TRUE
11/13/2012 MAAB13	yes	no	no	no	TRUE	TRUE	not sure	TRUE
11/13/2012M AABKM11	yes	no	no	no	not sure	TRUE	TRUE	TRUE
11/13/2012M AABKM9	no	no	no	no	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
11/13/2012M AABKM16	no	no	no	no	not sure	TRUE	not sure	not sure
11/13/2012M AABKM17	no	no	no	no	not sure	TRUE	not sure	TRUE
11/13/2012M AABKM14	no	no	no	no	not sure	not sure	not sure	not sure
11/13/2012M AABKM10	no	Not sure	no	no	not sure	TRUE	TRUE	TRUE
11/13/2012M AABKM5	no	no	no	no	not sure	TRUE	not sure	not sure
11/13/2012M AABKM12	no	no	no	no	not sure	not sure	not sure	TRUE
11/13/2012M AABKM6	no	no	no	no	not sure	TRUE	TRUE	TRUE
11/13/2012M AABKM7	no	no	no	no	not sure	TRUE	TRUE	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
11/13/2012M AABKM8	no	no	no	no	TRUE	TRUE	TRUE	TRUE
11/13/2012 MAABKM4	no	Not sure	no	no	TRUE	TRUE	TRUE	TRUE
11/13/2012M AABKM3	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
11/13/2012M AABKM1	no	no	no	no	TRUE	TRUE	TRUE	TRUE
11/13/2012M AABKM2	yes	no	no	no	not sure	not sure	TRUE	TRUE
1/28/2013 MA40	yes	no	yes	no	TRUE	TRUE	FALSE	not sure
1/28/2013 MA1	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA45	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA43	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA42	no	no	yes	yes	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA41	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!	#NULL!
1/28/2013 MA41	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA56	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA53	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA44	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA52	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA18	yes	Not sure	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA10	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA7	yes	no	no	no	TRUE	TRUE	not sure	not sure
1/28/2013 MA8	yes	no	yes	no	TRUE	FALSE	TRUE	TRUE
1/28/2013 MA57	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA59	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA19	yes	Not sure	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA13	yes	yes	yes	Not sure	not sure	TRUE	TRUE	TRUE
1/28/2013 MA58	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA20	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA11	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA51	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA22	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA60	yes	Not sure	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA9	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA48	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA21	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA50	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA49	yes	no	yes	no	not sure	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA3	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA2	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA17	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA16	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA14	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA15	yes	Not sure	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA4	yes	no	yes	yes	not sure	TRUE	TRUE	TRUE
1/28/2013 MA5	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA6	yes	no	yes	no	not sure	TRUE	not sure	not sure
1/28/2013 MA12	yes	no	yes	no	FALSE	TRUE	FALSE	TRUE
1/28/2013 MA47	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA46	yes	no	yes	no	FALSE	TRUE	TRUE	not sure
1/28/2013 MA54	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA55	yes	Not sure	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA66	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA62	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA36	no	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA37	yes	no	no	no	not sure	not sure	not sure	TRUE
1/28/2013 MA40	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA39	yes	no	yes	no	not sure	not sure	not sure	TRUE
1/28/2013 MA41	yes	no	no	no	FALSE	TRUE	not sure	TRUE
1/28/2013 MA42	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
1/28/2013 MA43	no	no	no	no	not sure	not sure	not sure	not sure
1/28/2013 MA44	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA45	yes	no	yes	no	FALSE	TRUE	not sure	TRUE
1/28/2013 MA49	yes	no	yes	no	not sure	TRUE	FALSE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA46	yes	Not sure	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA47	yes	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA51	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA50	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA52	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA38	yes	no	no	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA48	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 Ma57	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA53	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA63	no	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA54	yes	no	yes	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA61	yes	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA55	yes	no	no	no	TRUE	not sure	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA60	yes	no	yes	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA59	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA56	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE
1/28/2013 MA58	yes	no	no	no	TRUE	not sure	not sure	TRUE
1/28/2013 MA72	no	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA73	yes	no	no	no	TRUE	TRUE	FALSE	TRUE
1/28/2013 MA109	no	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA74	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA77	no	no	no	no	FALSE	not sure	not sure	not sure
1/28/2013 MA76	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA75	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA78	yes	no	yes	no	not sure	not sure	not sure	TRUE
1/28/2013 MA79	yes	no	no	no	TRUE	not sure	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA85	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA86	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA87	no	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA88	yes	no	no	no	not sure	FALSE	not sure	not sure
1/28/2013 MA80	yes	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA81	yes	no	no	no	not sure	not sure	TRUE	TRUE
1/28/2013 MA82	no	no	no	no	not sure	not sure	not sure	not sure
1/28/2013 MA83	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA84	yes	no	no	no	not sure	not sure	not sure	TRUE
1/28/2013 MA106	no	no	no	no	not sure	not sure	not sure	not sure
1/28/2013 MA105	no	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA104	yes	no	no	no	not sure	not sure	TRUE	TRUE
1/28/2013 MA103	yes	no	no	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA108	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA107	yes	no	no	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA101	no	Not sure	no	Not sure	not sure	not sure	not sure	not sure
1/28/2013 MA102	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA100	yes	no	no	no	FALSE	not sure	TRUE	TRUE
1/28/2013 MA92	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA91	yes	no	yes	no	not sure	not sure	not sure	TRUE
1/28/2013 MA90	yes	no	no	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA89	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA93	yes	no	no	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA95	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA94	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA96	yes	no	no	no	TRUE	TRUE	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA97	no	no	no	no	FALSE	TRUE	not sure	TRUE
1/28/2013 MA98	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA99	yes	no	yes	no	not sure	not sure	not sure	TRUE
1/28/2013 MA71	yes	no	yes	no	FALSE	not sure	not sure	not sure
1/28/2013 MA70	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA69	yes	no	yes	yes	not sure	not sure	not sure	not sure
1/28/2013 MA68	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA67	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA64	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA65	yes	no	yes	yes	not sure	not sure	not sure	TRUE
1/28/2013 MA25	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA1	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA2	yes	no	yes	no	not sure	not sure	not sure	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA6	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA5	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA4	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA3	yes	no	yes	no	not sure	not sure	not sure	TRUE
1/28/2013 MA18	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA9	no	no	no	no	not sure	not sure	not sure	TRUE
1/28/2013 MA10	yes	no	no	no	not sure	not sure	not sure	TRUE
1/28/2013 MA11	yes	no	yes	yes	not sure	TRUE	TRUE	TRUE
1/28/2013 MA7	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA19	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA8	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA28	yes	no	yes	no	not sure	TRUE	not sure	not sure
1/28/2013 MA33	yes	no	yes	no	TRUE	TRUE	FALSE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA12	yes	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA31	no	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA32	yes	no	no	no	TRUE	TRUE	not sure	TRUE
1/28/2013 MA29	yes	no	yes	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA20	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA17	yes	no	yes	yes	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA34	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA16	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
1/28/2013 MA13	yes	no	no	no	FALSE	not sure	TRUE	TRUE
1/28/2013 MA14	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
1/28/2013 MA22	yes	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA30	yes	no	no	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA27	yes	no	yes	yes	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
1/28/2013 MA23	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
1/28/2013 MA15	yes	no	yes	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA26	yes	no	yes	no	TRUE	FALSE	TRUE	TRUE
1/28/2013 MA35	no	no	no	no	not sure	TRUE	not sure	TRUE
1/28/2013 MA24	yes	no	no	no	not sure	not sure	TRUE	TRUE
1/28/2013 MA21	yes	no	no	no	TRUE	TRUE	not sure	not sure
2/19/2013 MA1	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA2	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA3	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA4	yes	no	yes	yes	not sure	TRUE	TRUE	TRUE
2/19/2013 MA5	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
2/19/2013 MA6	yes	no	yes	no	not sure	TRUE	not sure	not sure
2/19/2013 MA7	yes	no	no	no	TRUE	TRUE	not sure	not sure

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
2/19/2013 MA8	yes	no	yes	no	TRUE	FALSE	TRUE	TRUE
2/19/2013 MA9	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
2/19/2013 MA10	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA11	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA12	yes	no	yes	no	FALSE	TRUE	FALSE	TRUE
2/19/2013 MA13	yes	yes	yes	Not sure	not sure	TRUE	TRUE	TRUE
2/19/2013 MA14	yes	no	no	no	not sure	TRUE	TRUE	TRUE
2/19/2013 MA15	yes	Not sure	yes	no	not sure	TRUE	TRUE	TRUE
2/19/2013 Ma16	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA17	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA18	yes	Not sure	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA19	yes	Not sure	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA20	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
2/19/2013 MA21	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE
2/19/2013 MA22	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA40	yes	no	yes	no	TRUE	TRUE	not sure	not sure
2/19/2013 MA41	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA42	no	no	yes	yes	not sure	TRUE	TRUE	TRUE
2/19/2013 MA43	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA44	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA45	yes	no	yes	no	TRUE	TRUE	not sure	TRUE
2/19/2013 MA46	yes	no	yes	no	FALSE	TRUE	TRUE	not sure
2/19/2013 MA47	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA48	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA49	yes	no	yes	no	not sure	TRUE	TRUE	TRUE
2/19/2013 MA50	yes	no	yes	no	FALSE	TRUE	TRUE	TRUE

Appendix 4. Cont.

Sample	Do you know what's MRSA?	Previous infections with MRSA?	Know someone infected with MRSA?	Live with someone who had MRSA?	MRSA infect more than Aids	You can be MRSA carrier without being infected ?	You can catch MRSA from causal contact with infected person	you can catch MRSA from gym?
2/19/2013 MA51	yes	no	no	no	FALSE	TRUE	TRUE	TRUE
2/19/2013 MA52	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA53	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA54	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA55	yes	Not sure	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA56	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA57	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA58	yes	no	yes	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA59	yes	no	no	no	TRUE	TRUE	TRUE	TRUE
2/19/2013 MA60	yes	Not sure	yes	no	not sure	TRUE	TRUE	TRUE

Appendix 5. Isolates sequences of the 110 *Staphylococci* species collected

#	Samples number	Nucleotide Sequences
1	102312km14	CAGATGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCCA
2	102312ma24	CAGaTGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAG
3	101112ab8	CAGACGTGCACAGTTACTTACACGTTTGTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTACGTATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCAGGTC CATCTATAAGTGATAGCagaGCCATCTTTCACATCGAACCATGCGGTTT GAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTACCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTCGTCTGTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
4	101112ab15	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCCA
5	101112ma10	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCC
6	101812ma10	CAGACGTGCACAGTACTTACACGTTTGTCTTCCCTAATAACAGAGTTT TACGAGCCGAAACCCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTACGTATC GTCGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGGTC CATCTATAAGTGATAGCAAAACCATCTTTCACCTTTAGAACCATGCGGTTT CAAATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCCA

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
7	101012ma13	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCC
8	101812ab9	TTACTTACACGTTTGTCTTCCCTAATAACAGAGTTTTACGAGCCGAAAC CCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTCGCCATTGCGGA AGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCGTGTCTCAGTTCC AGTGTGGCCGATCACCCCTCTCAGGTCGGCTACGTATCGtegCCTTGGTAA GCCGTTACCTTACCAACTAGCTAATACGGCGCGGGTCCATCTATAAGTGA TAGCAAACCATCTTTCACCTTGAACCATGCGGTTCCAAATGTTATCCG GTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTATAGGTAGGTTACC CACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGGAGCAAGCTCCTTA TCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCCAGCGTTCATCCTG AGC
9	101812ma8	GaTGTGCACAGTACTTACACATTTGTTCTTCCCTGATAACAGAGTTTTA CGATCCGAAGACCTTcaagacTCACGCGGCGTTGCTCCGTCAGGCTTTTCG CCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCGT GTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTACGTATCGT TGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGATCCA TCTATAAGTGACAGCAAAGCCGCTTTCACCTATTGAACCATGCGGTTCAA TATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTATA GGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGGAG CAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCCAG CGTTCATCCTGAGCCAG

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
10	101812ma6	ACAGAGTTTTACGATCCGAagaCCTTCATCACTCACGCGGCGTTGCTCcG TCAggcTTTCgccCATTGcggAAGATTCCCTACTGCTGCCTCCCGTAGGA GTCTGGACCGTGTCTCAGttcCAGTGTGGCCGATCACCTCTCAGGTCCG CTATGCATCGtgCCTTGtgaGCCGTTACCTTaCCAACCTAGCTAATGCA CCGCGGATCCATCTA
11	101012ma10	CAGACGTGCACAGTTACTTACACGTTTGTCTTCCCTAATAACAGAGTTT TACGAGCCGAAACCCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCCGCTACGTATC GTCGCCTTGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGGTC CATCTATAAGTGATAGCAAACCATCTTTCACCTTATAGAACCATGCGGTTT CAAATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCAGTCTTA TAGGTAGGTTACCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTTATCTGTTGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
12	101112ab3	GTGCacgTTACTTACACATATGTTCTTCCCTAATAACAGAGTTTTACGAT CCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTCGCCA TTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCGTGTCT CAGTTCAGTGTGGCCGATCACCTCTCAGGTCCGCTATGCATCGTTGCC TTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATCCATCTA TAAGTGACAGCAAGACCGTCTTTCACCTTTGAACCATGCGGTTCAAATA TTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCAGTCTTATAGGTA GGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGAAGCAAG CTTCTCGTCCGTTGCTCGACTTGCATGTATTAGGCACGCCGCCAGCGTT CATCCTGAGCCAGGAtcAAACT

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
13	10312ms4	AGATGTGCacgTACTTACACATATGTTCTTCCCTAATAACAGAGTTTTA CGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTCG CCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCGT GTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATCGT TGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATCCA TCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTCAA AATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTATA GGTAGGTTATCCACGTGTTACTACCCGTCCGCCGCTAACATCAGAGAAG CAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCCAG CGTTCATCCTGAGCC
14	10312ms17	AGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTTT ACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTC GCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCG TGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATCG TTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATCC ATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTCA AAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTAT AGGTAGGTTATCCACGTGTTACTACCCGTCCGCCGCTAACATCAGAGAA GCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCCA GCGTTCATCCTGAGC
15	101012ma8	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
16	101012ab10	ACTAACGTCCTTGTTCTTCTCTAACAAACAGAGTTTTACGATCCGAAAACC TTCTTCACTCACGCGGCGTTGCTCGGTCAGACTTTCGTCCATTGCCGAAG ATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGGCCGTGTCTCAGTCCCAG TGTGGCCGATCACCTCTCAGGTCGGCTATGCATCGTGGCCTTGGTGAGC CGTTACCTCACCAACTAGCTAATGCACCGCGGGTCCATCCATCAGCGACA CCCGAAAGCGCCTTTCACCTTATGCCATGCGGCATAAACTGTTATGCGG TATTAGCACCTGTTTCCAAGTGTTATCCCCCTCTGATGGGTAGGTTACCC ACGTGTTACTCACCCGTCCGCCACTCCTCTTTCCAATTGAGTGCAAGCAC TCGGGAGGAAAGAAGCGTTCGACTTGCATGTATTAGGCACGCCGCCAGCG TTCGTCctGAGcC
17	101012ab9	CAGATGTGCACAGTTACTTACACATTTGTTCTTCCCTGATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTACGTATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGATC CATCTATAAGTGACAGCAAAGCCGCCTTTCACTATTGAACCATGCGGTTT AATATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
18	102312ma9	CAGATGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAAGCCGTCTTTCACTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
19	101012ab12	CAGACgtgcACAGTTACTTACACGTTTGTTCCTCCCTAATAACAGAGTTT TACGAGCCGAAACCCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTACGTATC GTCGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGGTC CATCTATAAGTGATAGCAAACCATCTTTCACCTTTAGAACCATGCGGTTT CAAATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTACCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCCA
20	101012ma4	CAGaTGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
21	10312ms12	CAGATGTGCACAGTTACTTACACATTTGTTCTTCCCTGATAACAGAGTTT TACGATcctaaGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTACGTATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGATC CATCTATAAGTGACAGCAAAGCCGCCTTTCACCTATTGAACCATGCGGTTT AATATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCCAGGATcAAACT

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
<u>22</u>	102212ma14	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
<u>23</u>	101812ma17	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
24	102312makm12	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
25	92512ms ⁷ N ⁷	GaTGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTTTA CGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTCG CCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCGT GTCTCAGTTCCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATCGT TGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATCCA TCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTCAA AATATTATCCGGTATTAGCTCCGGTTTCCC GAAGTTATCCCAGTCTTATA GGTAGGTTATCCACGTGTTACTACCCGTCCGCCGCTAACATCAGAGAAG CAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCCAG CGTTCATCCTGAGC
26	92012ma1	CAGATGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCC GAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
27	92512ms25	CAGATGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCC GAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
28	92012ma12	CAGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
29	92012ma4	TCAGATGTGCACAGTACTTACACATTTGTTCTTCCCTGATAACAGAGTT TTACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTT TCGCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGAC CGTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTACGTAT CGTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGAT CCATCTATAAGTGACAGCAAAGCCGCCTTTCACCTATTGAACCATGCGGTT CAATATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTT ATAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAG GAGCAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGC CAGCGTTCATCCTGAGCC
30	10512ab12	CAGACGTGCACAGTACTTACACGTTTGTCTTCCCTAATAACAGAGTTT TACGAGCCGAAACCCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCTCTCAGGTCGGCTACGTATC GtcgCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATACGGCGCGGGTC CATCTATAAGTGATAGCAAACCATCTTTCACCTTTAGAACCATGCGGTTT CAAATGTTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTACCCACGTGTTACTCACCCGTCCGCCGCTAACGTCAAAGG AGCAAGCTCCTTATCTGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
31	10312ms9	AGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTTT ACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTC GCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCG TGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATCG TTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATCC ATCTATAAGTGACAGCAAGACCGTCTTTCACTTTTGAACCATGCGGTTCA AAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTAT AGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGAA GCAAGCTTCTCGTCCGTTGCTCGACTTGCATGTATTAGGCACGCCGCCA GCGTTCATCCTGAGC
32	92512ms5	CAGaTGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTC CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACTTTTGAACCATGCGGTTTC AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCC
33	92412ma5	AGATGTGCACAGTACTTACACATATGTTCTTCCCTAATAACAGAGTTTT ACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTTC GCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACCG TGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATCG TTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATCC ATCTATAAGTGACAGCAAGACCGTCTTTCACTTTTGAACCATGCGGTTCA AAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTAT AGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGAA GCAAGCTTCTCGTCCGTTGCTCGACTTGCATGTATTAGGCACGCCGCCA GCGTTCATCCTGAGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
<u>34</u>	92512ms7	CAGATGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGC
<u>35</u>	92512ms12	CAGATGTGCACAGTTACTTACACATATGTTCTTCCCTAATAACAGAGTTT TACGATCCGAAGACCTTCATCACTCACGCGGCGTTGCTCCGTCAGGCTTT CGCCCATTGCGGAAGATTCCCTACTGCTGCCTCCCGTAGGAGTCTGGACC GTGTCTCAGTTCAGTGTGGCCGATCACCCCTCTCAGGTCGGCTATGCATC GTTGCCTTGGTAAGCCGTTACCTTACCAACTAGCTAATGCAGCGCGGATC CATCTATAAGTGACAGCAAGACCGTCTTTCACCTTTTGAACCATGCGGTTT AAAATATTATCCGGTATTAGCTCCGGTTTCCCGAAGTTATCCCAGTCTTA TAGGTAGGTTATCCACGTGTTACTCACCCGTCCGCCGCTAACATCAGAGA AGCAAGCTTCTCGTCCGTTTCGCTCGACTTGCATGTATTAGGCACGCCGCC AGCGTTCATCCTGAGCCA
36	92012ma14	<i>Staphylococcus aureus</i> subsp.
<u>37</u>	102412ma21	CAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACG GGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGGA AACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAAGTGA AAGACGGTCTTGCTGCTACTTATAGATGGATCCGCGCTGCATTAGCTAGT TGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCgaCCTGAGAGG GTGATCGGCCACACTGGAAGTgaGACACGGTCCagaCTCCTACGGGAGGC AGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGgaGCAACGCCG CGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGAA CATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAGCC ACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
38	102412ma3	GtCGAGCGAACAGATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGACGG GTGAgtcactcgtGGATAACCTACCTATAAGACTGGGATAACTTCGGGAA ACCGGAGCTAATACCGGATAAGATTTTGAACCGCATGGTTCAATAGTGAA AGACGGCCTTGCTGTCACCTATAGATGGATCCGCGCCGTATTAGCTAGTT GGTAAGGTAACGGCTTACCAAGGCAACGATACGTAGCCGACCTGAGAGGG TGATCGGCCACACTGGAAGTGAACACGGTCCAGACTCCTACGGGAGGCA GCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGC GTGAGTGATGAAGGTCTTCCGATCGTAAAACCTCTGTTATCAGGGAAGAAC AAACGTGTAAGTAACTGTGCACGTCTTGACGGTACCTGATCAGAAAGCCA CGGCTAACTACGTGC
39	102412ma13	AGTCGAGCGACAGATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGACGG GTGagtacttgGATAAccTACCTATAAGACTGggaTAACTTcggGAA ACCGGAGCTAATACCGGATAACATATTGAACCGCATGGTTCAATAGTGAA AGGCGGCTTTGCTGTCACCTATAGATGGATCCGCGCCGTATTAGCTAGTT GGTAAGGTAACGGCTTACCAAGGCAACGATACGTAgccGACCTGAGAGGG TGATCGGCCACACTGGAAGTGAACACGGTcCagaCTCCTACGGGAGGCA GCAGTaggGAATCTTCCGCAATGGGCGAAAGCCTGACgGAGCAACGCCGC GTGAGTGATGAAGGTCTTCCGATCGTAAAACCTCTGTTATCAgggAAGAAC AAATGTGTAAGTAACTGTGCACATCTTGACGGTACCTGATCAGAAAGCCA CGGCTAACTACGTGC
40	102312makm3	AtAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGACGGGTGAgtcactcgt GGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAATA CCGGATAAGATTTTGAACCGCATGGTTCAATAGTGAAAGACGGCCTTGCT GTCACCTATAGATGGATCCGCGCCGTATTAGCTAGTTGGTAAGGTAACGG CTTACCAAGGCAACGATACGTAGCCGACCTGAGAGGGTGATCGGCCACAC TGGAAGTGAACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAATC TTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCCGGTGAGTGATGAAG GTCTTCCGATCGTAAAACCTCTGTTATCAGGGAAGAACAACGTGTAAGTA ACTGTGCACGTCTTGACGGTACCTGATCAGAAAGCCACGGCTAACTACGT GC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
41	102412ma29	AGTcGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGG GTGAgtactcgtGGATAACCTACCTATAAGACTGGGATAACTTCGGGAA ACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAA AGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTT GGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGG TGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCA GCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCG GTGAGTGATGAAGGTCTTCCGATCGTAAAACCTCTGTTATTAGGGAAGAAC ATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCA CGGCTAACTACGTGCCAG
42	102412ma20	AGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGG GTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGGAA ACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAA AGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTT GGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGG TGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCA GCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCG GTGAGTGATGAAGGTCTTCCGATCGTAAAACCTCTGTTATTAGGGAAGAAC ATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCA CGGCTAACTACGTGC
43	102412ma22	GaCGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGGGTGAGTAActcg TGGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAAT ACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAAAGACGGTCTTGC TGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTTGGTAAGGTAACG GCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGGTGATCGGCCACA CTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAAT CTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCGTGAGTGATGAA GGTCTTCCGATCGTAAAACCTCTGTTATTAGGGAAGAACATATGTGTAAGT AACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCACGGCTAACTACG TGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
44	102312ma26	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAAActgTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC
45	102312jr14	CAGTCGAGCGACGGACgagaaGCTTGCTTCTCTGATGTTAGCGGCGGACG GGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGGA AACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTGA AAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGT TGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGG GTGATCGGCCACACTGGAAGTGGGACACGGTCCAGACTCCTACGGGAGGC AGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC CGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGAA CATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGCC ACGGCTAACTACGTGCC
46	102312ma18	CAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACG GGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGGA AACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTGA AAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGT TGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGG GTGATCGGCCACACTGGAAGTGGGACACGGTCCAGACTCCTACGGGAGGC AGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC CGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGAA CATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGCC ACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
47	102312makm15	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAACCTGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC
48	102312ma17	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAACCTGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
49	102312jr26	CAGTCGAGCGAACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTaaactgTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAACCTGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
50	102312ma6	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGagtcactcGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
51	102612ab4	GCAGTCGAGCGAACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC
52	102312makm24	GCAGTCGAGCGaacgATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGAC GGGTGAGTAAactcgTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAACATATTGAACCGCATGGTTCAATAGTG AAAGGCGGCTTTGCTGTCACTTATAGATGGATCCGCGCCGTATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATACGTAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATCAGGGAAGA ACAAATGTGTAAGTAACTGTGCACATCTTGACGGTACCTGATCAGAAAGC CACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
53	102312jr24	GaCGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGGGTGAGTAACACG TGGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAAT ACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAAAGACGGTCTTGC TGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTTGGTAAGGTAACG GCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGGTGATCGGCCACA CTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAAT CTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCGTGAGTGATGAA GGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAGAACATATGTGTAAGT AACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCACGGCTAACTACG TGCC
54	102412ma5	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTG AAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC
55	111712ma6	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
56	102312ma7	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC
57	102312makm29	CAGTCGAGCGaacgATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGACG GGTGAGTAACACGTGGGTAACCTACCTATAAGACTGGGATAACTTCGGGA AACCGGAGCTAATACCGGATAACATTTTGAACCGCATGGTTCTAAAGTGA AAGATGGTTTTGCTATCACTTATAGATGGACCCGCGCCGTATTAGCTAGT TGGTAAGGTAACGGCTTACCAAGGCGACGATACGTAGCCGACCTGAGAGG GTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGGC AGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC CGTGAGTGATGAAGGGTTTCGGCTCGTAAACTCTGTTATTAGGGAAGAA CAAACGTGTAAGTAAGTGTGCACGTCTTGACGGTACCTAATCAGAAAGCC ACGGCTAACTACGTGC
58	102312ma12	TGCAGTCGAGCGACAGATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAAGATTTTGAACCGCATGGTTCAATAGT GAAAGACGGCCTTGCTGTCACTTATAGATGGATCCGCGCCGTATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATACGTAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATCAGGGAAG AACAAACGTGTAAGTAAGTGTGCACGTCTTGACGGTACCTGATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
59	102212ma9	TGCAGTCGAGCGaacgATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGA CGGGTGAGTAACACGTGGGTAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAACATTTGGAACCGCATGGTTCTAAAGT GAAAGATGGTTTTGCTATCACTTATAGATGGACCCGCGCCGTATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCGACGATACGTAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGGTTTCGGCTCGTAAACTCTGTTATTAGGGAAG AACAAACGTGTAAGTAACTGTGCACGTCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
60	102312ma2	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAactgTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCCGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
61	102312makm1	GCAGTCGAGCGAACAGACAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGA CGGGTGAGTAACACGTGGGTAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTGAAACCGCATGGTTTCGATAGT GAAAGATGGTTTTGCTATCACTTATAGATGGACCCGCGCCGTATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCGACGATACGTAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCCGATCGTAAACTCTGTTATTAGGGAAG AACATACGTGTAAGTAACTATGCACGTCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
62	102612ab2	GCAGTCGAGCGAACAGATGAGGAGCTTGCTCCTTTGACGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATAAcggATAAGATTTTGAACCGCATGGTTCAATAGT GAAAGACGGCCTTGCTGTCACTTATAGATGGATCCGCGCCGTATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATACGTAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATCAGGGAAG AACAAACGTGTAAGTAACTGTGCACGTCTTGACGGTACCTGATCAGAAAG CCACGGCTAACTACGTGCC
63	101812ma17	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
64	102312jr27	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
65	102312ma27	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
66	102412ma9	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
67	102312makm8	GaCGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGGGTGAGTAACACG TGGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAAT ACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAAGACGGTCTTGC TGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTTGGTAAGGTAACG GCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGGTGATCGGCCACA CTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAAT CTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCGTGAGTGATGAA GGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAGAACATATGTGTAAGT AACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCACGGCTAACTACG TGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
68	102312jr1	GcagTCGAGCgaagGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGTG AAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
69	102312ma5	AcGAGGAGCTTGCTCCTCTGACGTTAGCGGCGGACGGGTGAGTAACACGT GGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAATA CCGGATAACATGTTGAACCGCATGGTTCAACAGTGAAAGACGGTctTGCT GTCATTATAGATGGATCCGCGCCGATTAGCTAGTTGGTAAGGTAACGG CTTACCAAGGCAACGATGCGTAGCCGACCTGAGAGGGTGATCGGCCACAC TGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAATC TTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCGTGAGTGAAGAAG GTCTTCGGATCGTAAACTCTGTTATTAGGGAAGAACAAATGTGTAAGTA ACTATGCACGTCTTGACGGTACCTAATCAGAAAGCCACGGCTAACTACGT GCCA
70	102312makm27	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
71	102312km16	TGCAGTCGAGCGaacgATAAGGAGCTTGCTCCTTTGACGTTAGCGGCGGA CGGGTGAGTAACACGTGGGTAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAACATTTGGAACCGCATGGTTCTAAAGT GAAAGATGGTTTTGCTATCACTTATAGATGGACCCGCGCCGTATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCGACGATACGTAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGGTTTCGGCTCGTAAACTCTGTTATTAGGGAAG AACAAACGTGTAAGTAACTGTGCACGTCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
72	102212ma1	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTG AAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCCGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
73	102412ma16	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCCGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
74	102212ma13	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC
75	111712ma13	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGagtcactcgTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTG AAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
76	10512ab3	GCAGTCGAGCgaagGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTG AAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
77	92512ms4	TGCAGTCGAGCGAACAGACAAGGAGCTTGCTCCTTTGACGTTAGCGGCGG ACGGGTGAGTAACACGTGGGTAACCTACCTATAAGACTGGGATAACTTCG GAAACCGGAGCTAATACCGGATAATATTTGAAACCGCATGGTTCGATAG TGAAAGATGGTTTTGCTATCACTTATAGATGGACCCGCGCCGTATTAGCT AGTTGGTAAGGTAACGGCTTACCAAGGCGACGATACGTAGCCGACCTGAG AGGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGA GGCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACG CCGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAA GAACATACGTGTAAGTAACTATGCACGTCTTGACGGTACCTAATCAGAAA GCCACGGCTAACTACGTGC
78	10312ms13	GCAGTCGAGCgaagGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGTG AAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC
79	92512ms16	TGCAGTCGAGCgaagGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
80	92412ms12	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC
81	021913ma52	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
82	012813ma5	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
83	012813ma23	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
84	021913ma43	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTG AAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
85	012813ma90	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
86	012813ma34	TGCAAGTCGAGCGAACAGATGAGGAGCTTGCTCCTTTGACGTTAGCGGCG GACGGGTGAGTAACACGTGGGTAACCTACCTATAAGACTGGAATAACTCC GGGAAACCGGGGCTAATGCCGGATAACATGTTGAACCGCATGGTTCAACA GTGAAAGACGGTCTTGCTGTCACCTTATAGATGGACCCGCGCCGTATTAGC TAGTTGGTAAGGTAACGGCTTACCAAGGCGACGATACGTAGCCGACCTGA GAGGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGA GGCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACG CCGCGTGAGTGATGAAGGTCTTCGGATCGTAAAGCTCTGTTGTTAGGGAA GAACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAACCAGAAA GCCACGGCAACTACGTGCCAGCAGCCGCGGTAA
87	021913ma42	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC
88	012813ma13	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAAGTG AAAGACGGTCTTGCTGTCACCTTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
89	012813ma87	AGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGGCGGACGG GTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGGAA ACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAA AGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAGTT GGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGG TGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCA GCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCG GTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAGAAC ATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCA CGGCTAACTACGTGCCA
90	012813ma98	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
91	012813ma91	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
92	012813ma26	GTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGGG TgagccctttaaggaTAACCTACCTATAAGACTGGGATAACTTCGgcaca tcgGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAAA GACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTAGTTG GTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGGT GATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCAG CAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCG TGAGTGATGAAGGTCTTCGGATCGTAAAAGCTCTGTTATTAGGGAAGAACA TATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAGCCAC GGCTAACTACGTGCCAGCAGCCGCGG
93	012813ma25	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAAGCTCTGTTATTAGGGAAG AACATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGCC
94	021913ma8	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAAGCTCTGTTATTAGGGAAG AACATATGTGTAAGTAAGTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
95	012813ma67	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
96	012813ma1	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
97	012813ma31	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
98	012813ma57	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
99	012813ma22	GaCGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGGGTGAGTAACACG TGGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAAT ACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAAGACGGTCTTGC TGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTTGGTAAGGTAACG GCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGGTGATCGGCCACA CTGGAAGTGGACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAAT CTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCGTGAGTGATGAA GGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGAACATATGTGTAAGT AACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCACGGCTAACTACG TGCC
100	012813ma29	GCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGAC GGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGGG AAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT AAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTAG TTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGAG GGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAGG CAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCC GCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAGA ACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAGC CACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
101	012813ma101	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
102	021913ma14	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAacatgtGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
103	012813ma106	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAacatgtGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
104	012813ma8	NONE
105	021913ma15	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTAtAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTtcaaAAGT GAAAGACGGTCTTGCTGTCACTTATAGaTGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGcCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGAGACACGgtcCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGGagcAACGC CGCGTGAGTGATGAAGGTctTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCagaAAG CCACGGCTAACTACGTGC
106	012813ma65	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAAG CCACGGCTAACTACGTGC
107	012813ma97	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGAGTAACACGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAAAGT GAAAGACGGTCTTGCTGTCACTTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGAGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAACTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAAG CCACGGCTAACTACGTGCC

Appendix 5. Cont.

#	Samples number	Nucleotide Sequences
108	012813ma27	TGCAGTCGAGCGACGGACGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGA CGGGTGagcaactGTGGATAACCTACCTATAAGACTGGGATAACTTCGG GAAACCGGAGCTAATACCGGATAATATTTTGAACCGCATGGTTCAAAGT GAAAGACGGTCTTGCTGTCACCTATAGATGGATCCGCGCTGCATTAGCTA GTTGGTAAGGTAACGGCTTACCAAGGCAACGATGCATAGCCGACCTGAGA GGGTGATCGGCCACACTGGAAGTGGACACGGTCCAGACTCCTACGGGAG GCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGC CGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAG AACATATGTGTAAGTAACTGTGCACATCTTGACGGTACCTAATCAGAAAG CCACGGCTAACTACGTGC
109	012813ma10	GaTgTTAGCGGCGGACGGGTGAGTAACACGTGGATAACCTACCTATAAGA CTGGGATAACTTCGGGAAACCGGAGCTAATACCGGATAATATTTTGAACC GCATGGTTCAaaaGTGAAAGACGgtcTTGCTGTCACCTATAGATGGATCC GCGctgcaTTAGCTAGTTGGTAAGGTAACGGCTTACCAAGGCAACGAtgc ATAGCCGACCTGAGAGGGTGATCGGCCACACTGGAAGTGGACACGGTCC AGACTCCTACGGGAGGCAGCAGTAGGGAATCTTCCGCAATGGGCGAAAGC CTGACGGAGCAACGCCGCGTGAGTGATGAAGGTCTTCGGATCGTAAAACCT CTGTTATTAGGGAAGAACATATGTGTAAGTAACTGTGCACATCTTGACGG TACCtaaTCAGAAAGCCACGGCTAACTACGTGC
110	012813ma32	GaCGAGAAGCTTGCTTCTCTGATGTTAGCGGCGGACGGGTGAGTAACACG TGGATAACCTACCTATAAGACTGGGATAACTTCGGGAAACCGGAGCTAAT ACCGGATAATATTTTGAACCGCATGGTTCAAAGTGAAGACGGTCTTGC TGTCACCTATAGATGGATCCGCGCTGCATTAGCTAGTTGGTAAGGTAACG GCTTACCAAGGCAACGATGCATAGCCGACCTGAGAGGGTGATCGGCCACA CTGGAAGTGGACACGGTCCAGACTCCTACGGGAGGCAGCAGTAGGGAAT CTTCCGCAATGGGCGAAAGCCTGACGGAGCAACGCCGCGTGAGTGATGAA GGTCTTCGGATCGTAAAACCTCTGTTATTAGGGAAGAACATATGTGTAAGT AACTGTGCACATCTTGACGGTACCTAATCAGAAAGCCACGGCTAACTACG TGC